DEPARTMENT OF DEFENSE

Department of the Navy

Record of Decision for the Final Supplemental Environmental Impact Statement/Overseas Environmental Impact Statement for Mariana Islands Training and Testing in Guam and Commonwealth of the Northern Mariana Islands

AGENCY: Department of the Navy, Department of Defense

ACTION: Record of Decision

SUMMARY: The United States (U.S.) Department of the Navy (Navy), after carefully weighing the strategic, operational, and environmental consequences of the Proposed Action, announces its decision to conduct training and testing (also referred to as military readiness activities) as identified in Alternative 2, the Navy's Preferred Alternative, in the Mariana Islands Training and Testing (MITT) Final Supplemental Environmental Impact Statement/Overseas Environmental Impact Statement (SEIS/OEIS). Implementation of this alternative will enable the Navy, other U.S. military services, and the U.S. Coast Guard to meet their respective missions. The Navy's mission, under Title 10 United States Code (U.S.C.) Section 8062, is to maintain, train, and equip combat-ready military forces capable of winning wars, deterring aggression, and maintaining freedom of the seas. The Navy will implement the full suite of mitigation measures detailed in Chapter 5 (Mitigation) of the MITT Final SEIS/OEIS to avoid or reduce potential environmental impacts during training and testing activities.

The MITT Final SEIS/OEIS supports the issuance of new authorization of marine mammal incidental take permits under the Marine Mammal Protection Act (MMPA) and incidental takes of threatened and endangered marine species under the Endangered Species Act (ESA).

The Navy's action proponents for this proposal are Commander, United States Pacific Fleet, Naval Sea Systems Command, Naval Air Systems Command, and the Office of Naval Research.

FOR FURTHER INFORMATION CONTACT: Naval Facilities Engineering Command Pacific, MITT SEIS/OEIS Project Manager, 258 Makalapa Drive, Suite 100, Pearl Harbor, HI 96860-3134, (808) 472-1402, Website: www.MITT-EIS.com.

A. SUPPLEMENTARY INFORMATION: Pursuant to section 102(2)(C) of the National Environmental Policy Act (NEPA) of 1969, sections 4321 et seq. of Title 42 U.S.C., Council on Environmental Quality (CEQ) regulations (Parts 1500–1508 of Title 40 Code of Federal Regulations [CFR]), Department of Navy regulations (32 CFR Part 775), and Executive Order 12114, *Environmental Effects Abroad of Major Federal Actions*, the Navy announces its decision to implement the Navy's Preferred Alternative, Alternative 2, including the full range of mitigation measures, as described in the MITT Final SEIS/OEIS and this Record of Decision (ROD). This decision will enable the Navy to support and conduct current, emerging, and future training and testing activities in the Study Area, which is made up of the Mariana Islands Range Complex (MIRC), additional ocean areas outside of the MIRC, and a transit corridor between the MIRC and the Hawaii Range Complex. A detailed description of the selected alternative, Alternative 2, is provided in Chapter 2 (Description of Proposed Action and Alternatives) of the MITT Final SEIS/OEIS. This decision will enable the Navy to meet changing military requirements to achieve the levels of operational readiness required under Title 10 U.S.C. Section 8062.

B. BACKGROUND AND ISSUES: The Navy has conducted military readiness activities in the Study Area for decades. The tempo and types of training and testing activities have fluctuated because of the

introduction of new technologies, the evolving nature of international events, advances in warfighting doctrine and procedures, and changes in force structure (organization of ships, submarines, aircraft, weapons, and personnel). Such developments influence the frequency, duration, intensity, and location of required training and testing activities from year to year. The MITT Final SEIS/OEIS reflects the most up-to-date compilation of the types and numbers of training and testing activities deemed necessary to meet military readiness requirements into the reasonably foreseeable future.

While specific training and testing activities, activity levels, and locations have evolved to meet changing threats and incorporate improved technology, the geographic area in which the Navy has conducted training and testing activities has not appreciably changed in several decades. The vast majority of Navy training and testing activities occur in areas designated by the Navy as "range complexes." A range complex comprises a set of adjacent areas of sea space, undersea space, land ranges, and overlying airspace delineated for military training and testing activities. Range complexes provide controlled and safe environments where military ship, submarine, amphibious forces, and aircraft crews can conduct training and testing in realistic conditions. The combination of undersea ranges and ocean operating areas (OPAREAs) with land ranges, safety landing fields, and nearshore amphibious landing sites is critical to realistic training and testing.

Military readiness training must be as realistic as possible to provide the experiences vital to success and survival during military operations because simulated training, even using technologically advanced simulators, cannot duplicate the complexity faced by military personnel in the real world. While simulators and synthetic training are critical elements of training that provide early skill repetition and enhance teamwork, there is no substitute for live training in a realistic environment. The training ranges and ocean OPAREAs provide these realistic environments, with sufficient sea and airspace vital for safety and mission success.

The Navy's systems commands design, test, and build components, systems, and platforms to address requirements identified by the fleet. The Navy's systems commands must test and evaluate a platform, system, or upgrade to validate whether it performs as expected and to determine whether it is operationally effective, suitable, survivable, and safe for its intended use by the fleet. The Navy uses a number of different testing methods including computer simulation and analysis, as well as at-sea testing, throughout the development of platforms and systems. Although computer simulation is a key component in the development of platforms and systems, it cannot provide information on how a platform or system will perform or whether it will be able to meet performance and other specification requirements in the environment in which it is intended to operate. Actual performance data are needed. For this reason, platforms and systems must undergo at-sea testing at some point in the development process. Thus, as with fleet training, the research and acquisition community require access to large, relatively unrestricted OPAREAs, multiple strike targets, and unique range attributes to support its testing requirements.

Purpose and Need

The purpose of the Navy's Proposed Action is to conduct training and testing activities to ensure that the Navy, other U.S. military services, and the U.S. Coast Guard can meet their respective missions. The Navy's mission, under Title 10 U.S.C. Section 8062, is to maintain, train, and equip combat-ready military forces capable of winning wars, deterring aggression, and maintaining freedom of the seas. The respective missions are achieved in part by training and testing within the Study Area in accordance with established military readiness and policy requirements. Section 1.4 (Purpose and Need) of the MITT Final SEIS/OEIS discusses the need for the Proposed Action in detail but, in general, training and testing

is needed to ensure military forces are prepared to protect U.S. national security interests and defend the nation.

The National Marine Fisheries Service (NMFS) is a cooperating agency on the SEIS/OEIS, and has its own distinct purpose and need, as described fully in the MITT Final SEIS/OEIS. Briefly, NMFS's purpose is to evaluate the Navy's Proposed Action pursuant to their authority under the MMPA, and to make a determination whether to issue incidental take regulations and a Letter of Authorization (LOA) for the action, including any conditions needed to meet the statutory mandates of the MMPA. The need for NMFS's action is to consider the impacts of the Navy's activities on marine mammals and meet their obligations under the MMPA. NMFS has issued its own ROD documenting its decision of whether to issue authorizations for the Navy's Proposed Action. The U.S. Coast Guard is also a cooperating agency, and the SEIS/OEIS addresses it's at-sea training activities, which are included in the Proposed Action. The U.S. Coast Guard will issue its own ROD.

Public Involvement

The Navy published a Notice of Intent for the preparation of the MITT SEIS/OEIS (which is a supplement to the 2015 MITT Final Environmental Impact Statement [EIS]/OEIS) in the *Federal Register* (FR) (84 FR 35767) on August 1, 2017. The Navy also published notices in three local and regional newspapers (*Pacific Daily News*, *Marianas Variety*, *Saipan Tribune*) beginning July 28, 2017, and distributed a notification letter to 291 federal and local elected officials and government agencies at the beginning of the scoping period. The Navy mailed postcards to 341 recipients on the project mailing list, including individuals, community groups, nongovernmental organizations, and businesses. The Notice of Intent and public notices provided information about the Proposed Action, methods for commenting, and the project website address. In accordance with CEQ regulations for implementing the requirements of NEPA, scoping is not required for a supplement to a draft or final EIS (40 CFR section 1502.9(c)(4)); however, in an effort to maximize public participation and ensure the public's input was considered, the Navy chose to conduct scoping for the MITT SEIS/OEIS.

During the development of the MITT Draft SEIS/OEIS, the Navy initiated a mutual exchange of information through early and open communication and provided briefings to interested stakeholders. The Navy established a public involvement website for the project, which provided various project-related informational materials, including fact sheets and videos. Scoping comments could be submitted via the project website or by mail. A total of 36 scoping comments were received, all of which were considered during preparation of the MITT Draft SEIS/OEIS. Scoping comments included requests for additional information about the Proposed Action and the differences from the 2015 MITT Final EIS/OEIS; development and analysis of additional alternatives; analysis of cumulative effects on multiple resource areas; and additional assessments or studies on the impacts of military activities on multiple resource areas. Comments expressed concern regarding the impacts of training and testing on water quality and sediments, marine species, public access, socioeconomic resources, environmental justice, public health and safety, and cultural resources, with specific focus on impacts on Farallon de Medinilla (FDM).

The Navy released the MITT Draft SEIS/OEIS for public review and comment from February 1, 2019, through April 17, 2019. A Notice of Public Meetings in the *Federal Register* (84 FR 677) was published on January 31, 2019, followed by the issuance of the Notice of Availability (84 FR 1119) on February 1, 2019. Due to the effects of Typhoon Wutip, the Navy rescheduled the Draft SEIS/OEIS public meetings from February 2019 to March 2019, and the public comment period was extended by 15 days. The Navy published a Notice of Rescheduled Public Meetings and Extension of Public Comment Period in the *Federal Register* (84 FR 8515) on March 8, 2019. At the request of the public, the Navy again extended

the comment period by an additional 15 days (*Federal Register* (84 FR 12238) on April 1, 2019), resulting in a 77-day comment period. The public comment period closed on April 17, 2019. In addition, the Navy made significant efforts to notify the public and facilitate maximum public participation during the Draft SEIS/OEIS public review and comment period including:

- Briefing elected officials and agency representatives on the Proposed Action and environmental impact analysis.
- Sending 218 notification letters to federal and local elected officials and agency representatives. Mailed postcards to 350 recipients on the project mailing list, including individuals; nongovernmental organizations; community and business groups; fishing, aviation, and recreation groups; and private companies.
- Placing newspaper advertisements to announce the availability of the Draft SEIS/OEIS and public meetings in the three local and regional newspapers (*Pacific Daily News, Marianas Variety, and Saipan Tribune*). Distributed news releases to announce the availability of the Draft SEIS/OEIS and dates/locations of public meetings.
- Participating in media interviews to broadcast the availability of the Draft SEIS/OEIS, dates/locations of public meetings, and how to provide comments during the public comment period. Mailed postcards, distributed news releases, and placed newspaper advertisements to announce the rescheduled public meetings and extensions of the public comment period. Posted project-related information, including fact sheets, posters, and videos, on the project website.
- Providing electronic and printed copies of the MITT Draft SEIS/OEIS to five libraries on Guam and the CNMI (two libraries on Guam, one on Saipan, one on Tinian, and one on Rota).

The Navy provided the public with several options for submitting comments on the MITT Draft SEIS/OEIS. Four open house public meetings were held on March 14, 2019 (Tinian); March 15, 2019 (Rota); March 18, 2019 (Saipan); and March 19, 2019 (Guam). At these meetings, Navy representatives were available to provide information and answer questions posed by members of the public one-on-one. Attendees could provide comments using paper comment forms or via an onsite digital voice recorder. Additionally, the public could provide comments electronically via the project website or by mailing letters to the address provided in all correspondence and outreach materials. Throughout the public review and comment period, the Navy received a total of 318 public comments. The Navy's responses to public comments made on the Draft SEIS/OEIS are included in the MITT Final SEIS/OEIS.

In response to comments received through the public comment process and consultations with regulators, the Navy made adjustments to the analysis to add, clarify, or correct information. These changes are reflected in the MITT Final SEIS/OEIS. Additionally, the Navy worked with NMFS to develop new procedural mitigation measures for manta rays and enhance existing procedural mitigation measures for protection of marine mammals, sea turtles, and hammerhead sharks during explosive mine neutralization activities involving Navy divers. The Final SEIS/OEIS also included updates to geographic mitigation measures developed as a result of consultations under the MMPA and ESA.

The Navy published the Notice of Availability for the Final SEIS/OEIS in the *Federal Register* on June 5, 2020 (85 FR 34626). Federal and local government measures put in place to prevent the widespread outbreak of respiratory illness from the novel coronavirus disease (COVID-19) resulted in the temporary closure of government offices and public facilities. Therefore, the Navy took additional steps to broaden public notification of the availability of the MITT Final SEIS/OEIS, including publication of notices in the *Pacific Daily News*, *Marianas Variety*, and *Saipan Tribune*. The Navy also sent approximately 700

notification letters to federal and local elected officials, government agencies, organizations, and individuals. The letters provided a description of the Proposed Action, project website address, and other project information, and included a flash drive enclosure containing the MITT Final SEIS/OEIS. A news release and public service announcement were disseminated to local and regional media. The Navy posted information about the availability of the document on its existing social media platforms, and sent emails to individuals who subscribed on the project website to receive project announcements. The MITT Final SEIS/OEIS was also made available on the project website and was sent to five libraries on Guam and the CNMI (two libraries on Guam, one on Saipan, one on Tinian, and one on Rota). The Navy met with representatives of the CNMI government from June 16 to 18, 2020, to discuss comments and issues CNMI resources agencies raised based upon the Draft SEIS/OEIS and to listen to their remaining concerns on the MITT Final SEIS/OEIS. The Navy also briefed the Governor of Guam and staff on the MITT Final SEIS/OEIS on June 19, 2020.

Alternatives Considered

The identification, consideration, and analysis of alternatives are critical components of the NEPA process and contribute to the goal of informed decision-making. The Navy developed the alternatives considered in the MITT Final SEIS/OEIS after careful assessment by subject matter experts, including military commands that utilize the ranges, military range management professionals, and Navy environmental managers and scientists, and (with respect to the mitigation measures that are incorporated into each action alternative) in consultation with NMFS and other agencies. The Navy also considered public input and used Department of Defense (DoD) and Navy policy and historical data in developing alternatives.

The military's anticipated level of training and testing activity evolves over time. Through the collection of several years' worth of classified data regarding the number of hull-mounted mid-frequency active sonar hours used to meet anti-submarine warfare training and testing requirements, the Navy has an increased understanding of the usage of sonar, the competing training and testing requirements, and outside global realities that may cause sonar usage to fluctuate. These data allow for a more accurate projection of the number of active sonar hours required to meet anti-submarine warfare training and testing requirements into the reasonably foreseeable future. In light of this information, the Navy was able to better formulate a range of reasonable alternatives that meet the Navy's training and testing requirements.

In the MITT Final SEIS/OEIS, the Navy reanalyzed at-sea and FDM training and testing activities that could potentially impact the human environment. The range of alternatives includes a No Action Alternative and other reasonable alternatives for achieving the purpose and need. Direct, indirect, cumulative, short-term, long-term, irreversible, and irretrievable impacts were identified. For the purposes of analysis and presentation within the MITT Final SEIS/OEIS, data were organized and evaluated in one-year and seven-year increments to account for the anticipated seven-year term of the requested MMPA authorization, but the Proposed Action is framed as continuing into the reasonably foreseeable future. Based on current knowledge and the proposed training and testing, continuation of the Proposed Action into the reasonably foreseeable future (beyond 2027) would not change the Navy's impact conclusions.

The Navy analyzed three alternatives in the MITT Final SEIS/OEIS. The Navy's entire suite of mitigation measures, including procedural and geographic mitigation areas, are incorporated into both action alternatives.

- **No Action Alternative.** Under the No Action Alternative, the Navy would not conduct the proposed training and testing activities in the MITT Study Area. Other military activities not

associated with this Proposed Action would continue to occur. For FDM, the lease agreement between the U.S. government and the CNMI would remain in place, and the island would continue to be maintained as a Navy range, although air-to-ground bombing (strike warfare) would no longer continue on the island. For NMFS, denial of an application for an incidental take authorization constitutes the NMFS No Action Alternative, which is consistent with NMFS' statutory obligation under the MMPA to grant or deny requests for take incidental to specified activities. If NMFS were to deny the Navy's application, the Navy would not be authorized to incidentally take marine mammals in the MITT Study Area and, under the No Action Alternative, the Navy would not conduct the proposed training and testing activities in the MITT Study Area. The No Action Alternative is the environmentally preferred alternative. The No Action Alternative fails to meet the Navy's Purpose and Need for the Proposed Action.

- **Alternative 1.** Alternative 1 consists of an adjustment from the level of training and testing activities analyzed in the 2015 MITT Final EIS/OEIS Preferred Alternative, accounting for changes in the types and tempo (increases or decreases) of activities necessary to meet current and future military readiness requirements beyond 2020. Alternative 1 includes changes to training and testing requirements necessary to accommodate current and future training and testing requirements at sea and on FDM, including new at-sea activities as well as activities subject to previous analysis that are currently ongoing and have historically occurred in the Study Area. Specifically, the types and tempo of training activities are based on changing world events, advances in technology, and U.S. tactical and strategic priorities. These activities account for force structure changes and include training with new aircraft, vessels, unmanned/autonomous systems, and weapons systems that will be introduced to the Navy after August 2020. This alternative includes the testing of new and existing technologies, systems, and weapons. The majority of testing activities that would be conducted under this alternative are the same as or similar to those conducted currently or in the past.

  Alternative 1 reflects a representative year of training and testing to account for the typical fluctuation of training cycles, testing programs, and deployment schedules that generally limit the maximum level of training and testing from occurring for the reasonably foreseeable future. The Navy's entire suite of mitigation measures, including procedural mitigation measures and geographic mitigation areas, would be implemented under Alternative 1.

- **Alternative 2.** Alternative 2 (Preferred Alternative) includes the same types of training and testing activities as Alternative 1 but also considers additional fleet exercises and associated unit-level activities should unanticipated emergent world events require increased readiness levels. For example, Alternative 2 contemplates Joint Multi-Strike Group Exercises (e.g., Valiant Shield) occurring annually as compared to every other year under Alternative 1. Additionally, Alternative 2 contemplates three (instead of two) Small Joint Coordinated Anti-Submarine Warfare exercises (Multi-Sail/Guam Exercises) per year with a 50 percent increase in associated unit-level events (e.g., Missile Exercise [Surface-to-Air]).

  Alternative 2 reflects the maximum number of training and testing activities that could occur within a given year, and assumes that the maximum number of fleet exercises would occur annually. This allows for the greatest flexibility for the Navy to maintain readiness when considering potential changes in the national security environment, fluctuations in training and deployment schedules, and anticipated in-theater demands. Under Alternative 2, types and tempo of testing activities would increase compared to Alternative 1. The Navy's entire suite of mitigation measures, including procedural mitigation measures and geographic mitigation areas, would be implemented under Alternative 2.

The Navy thoroughly considered and then eliminated from further consideration several alternatives that did not meet the purpose of and need for the Proposed Action. See Section 2.4.1 of the MITT Final SEIS/OEIS for a detailed description of alternatives considered but not carried forward for detailed analysis.

Environmental Impacts

The Navy's analysis in the MITT Final SEIS/OEIS addressed the potential environmental impacts of implementing the selected alternative, Alternative 2, and found that, with the implementation of standard operating procedures, there will be negligible impacts on the following resources: sediments and water quality, air quality, cultural resources, socioeconomic resources and environmental justice, and public health and safety. The discussion below summarizes the remaining resources and their associated environmental impacts as a result of implementing the selected alternative. Where appropriate, the Navy consulted with designated resource agencies in accordance with applicable statutes. The results of those consultations are included in Agency Consultation and Coordination later in this ROD.

Marine Habitats. Stressors analyzed for marine habitats included explosives and physical disturbance and strike. Most of the explosive military expended materials will detonate at or near the water surface. Potential impacts on marine habitat structure will be from bottom-laid in-water explosions, but these activities will occur in an area that has been previously disturbed, and impacts will be localized. Mitigation measures will help the Navy avoid or reduce impacts on seafloor resources (including shallow-water coral reefs, live hard bottom, artificial reefs, and submerged cultural resources) from explosives during applicable activities. Potential impacts from physical disturbance and strikes will be from vessel and in-water device strikes, military expended materials, seafloor devices, and from personnel disturbance (walking, standing, or swimming in the nearshore waters during amphibious activities such as raids and assaults), but impacts will be short-term and temporary, and therefore remain inconsequential.

Marine Mammals. Navy training and testing activities have the potential to expose marine mammals to multiple acoustic stressors. Exposures to sound-producing activities present risks to marine mammals that could include temporary or permanent hearing threshold shift, auditory masking, physiological stress, or behavioral responses. Some marine mammals in the MITT Study Area may behaviorally respond to acoustic stressors, and a limited number of individuals may experience temporary or permanent auditory effects; however, these are very unlikely to lead to long-term consequences for populations.

The use of explosives may cause temporary or permanent hearing threshold shift, auditory masking, physiological stress, or behavioral responses in certain marine mammals, equivalent to Level A take (which includes permanent hearing threshold shift) or Level B harassment (which includes behavioral disruption and temporary hearing threshold shift) under the MMPA. The quantitative analysis does not predict any mortalities or non-auditory injuries. Population-level impacts are unlikely because most estimated impacts from explosions are behavioral responses or temporary threshold shifts and the number of marine mammals potentially impacted by explosives is small compared to each species' respective abundance.

Navy training and testing activities have the potential to expose marine mammals to electromagnetic fields or high energy lasers as energy stressors. These activities are temporary and localized in nature, and may result in short-term and minor impacts on individual marine mammals, but will not result in long-term impacts on marine mammal populations.

Long-term consequences to marine mammal populations from physical disturbance and strike associated with the use of vessels, in-water devices, military expended materials, and seafloor devices during training and testing activities are not anticipated. Short-term impacts on individual marine mammals and long-term impacts on marine mammal populations from entanglement associated with training and testing activities are not anticipated. Long-term consequences to marine mammal populations from ingesting expended materials associated with training and testing activities are not anticipated.

The Navy determined that sonar and other transducers are likely to adversely affect ESA-listed marine mammals in the MITT Study Area, including blue whale (*Balaenoptera musculus*), fin whale (*Balaenoptera physalus*), humpback whale Western Pacific Distinct Population Segment (DPS) (*Megaptera novaeangliae*), sei whale (*Balaenoptera borealis*), and sperm whale (*Physeter macrocephalus).*

The Navy determined that explosives are likely to adversely affect humpback and sei whales, but not likely to adversely affect blue, fin and sperm whales.

The Navy determined that remaining stressors will either have no effect or are not likely to adversely affect ESA-listed marine mammals. NMFS concurred with Navy determinations.

There is no designated marine mammal critical habitat within the MITT Study Area.

Sea Turtles. Exposure(s) to sound-producing activities present risks to sea turtles that could include temporary or permanent hearing threshold shift, auditory masking, physiological stress, or behavioral responses. Acoustic modeling results indicate there will be no temporary or permanent hearing threshold shift for sea turtles, and only a small number of sea turtles may behaviorally respond. Therefore, Navy activities are unlikely to lead to any long-term consequences for populations.

Explosions in the water or near the water's surface present a risk to sea turtles proximate to the explosion, because the resulting shock waves can cause injury or result in the death of an animal. Acoustic modeling indicates the use of explosives could result in a small number of temporary or permanent hearing threshold shifts; no mortalities or non-auditory injuries are predicted. Due to the low numbers of sea turtles anticipated to be in locations where explosives at sea are used, it is predicted that impacts are unlikely to occur. The Navy analyzed use of explosives with a lower net explosive weight for potential impacts on sea turtles within nearshore habitats of Guam. Potential impacts resulting from these activity types are anticipated to be few, if any, due to the fact that other stressor types occur before nearshore explosives occur (such as small vessel movements and other activities on or above the water) that will likely induce sea turtles to leave the area.

In-water electromagnetic devices are not expected to result in population-level impacts for sea turtles due to the low intensity, localized potential impact area and short duration of use. The use of high-energy lasers is not expected to impact sea turtles as a result of the very low probability of a strike by a high-energy laser.

Sea turtles may be exposed to multiple physical disturbance and strike stressors associated with training and testing. Green sea turtles and hawksbill sea turtles occur inside or in proximity to port locations where vessel movements will be most frequent. Use of vessels and in-water devices, military expended materials, and seafloor devices may cause short-term disturbance to an individual turtle; however, due to the low numbers of sea turtles anticipated to be in locations where these stressors occur, impacts are unlikely.

Sea turtles could be exposed to multiple entanglement and ingestion sources associated with training and testing. While it may be possible for a sea turtle to become entangled in cables or wires, the sparse

distribution of these items indicates a very low potential for encounter. The likelihood that a sea turtle will ingest a military expended item associated with training and testing is considered low.

The Navy determined that explosives are likely to adversely affect four of the five ESA-listed sea turtles in the MITT Study Area, including the green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricata*), loggerhead sea turtle (*Caretta caretta*), and leatherback sea turtle (*Dermochelys coriacea*). However, explosives are not likely to adversely affect the ESA-listed olive ridley sea turtle (*Lepidochelys olivacea*).

The Navy determined that vessel strike during training and testing may affect, but is not likely to adversely affect olive ridley, leatherback and loggerhead sea turtles. However, vessel strike is likely to adversely affect green and hawksbill sea turtles.

The Navy determined that the remaining stressors will either have no effect or are not likely to adversely affect ESA-listed sea turtles. NMFS concurred with Navy determinations.

There is no designated sea turtle critical habitat within the MITT Study Area.

Marine Birds. Navy training and testing activities have the potential to expose marine birds to multiple acoustic stressors, such as sonar and other transducers, vessel noise, aircraft noise, and weapons noise. Birds are less susceptible to both temporary or permanent hearing threshold shift relative to other marine species because birds have adaptions to protect the middle ear and tympanum from pressure changes during diving that may affect hearing. Thus, the likelihood of a diving bird experiencing an underwater exposure to sonar or other transducer that could result in an impact on hearing is considered low.

Explosions in the water or near the water's surface present a risk to marine birds located proximate to the explosion, because the resulting shock waves can cause injury or result in the death of an animal. Potential exposure to stressors associated with ordnance use will increase under the selected alternative compared to what was analyzed previously. Factors that limit the potential for additional adverse impacts include maintaining the same ordnance type and targeting restrictions analyzed as part of the 2015 MITT Final EIS/OEIS. All ordnance expended on FDM will target existing impact zones, with the same ordnance restrictions imposed on all FDM activities and with the same avoidance and minimization measures in place.

Navy training and testing activities have the potential to expose marine birds to multiple physical disturbance and strike stressors. In at-sea environments, the risk for marine birds is low because of the wide dispersal of training and testing activities throughout the Study Area. On FDM, where military training activities occur on an island that supports marine bird rookery locations, the Navy analyzed munitions use and possible wildfires (from munitions or weather) for potential impacts on marine birds. All ordnance expended on FDM will target existing impact zones, with the same ordnance restrictions imposed on all FDM activities. Further, since ESA-listed birds also utilize habitat on FDM, the same avoidance and minimization measures required under the 2015 U.S. Fish and Wildlife Service (USFWS) Biological Opinion will also benefit other non-listed marine birds on the island. Ongoing relocation of target positions from the cliff to inland areas within impact zones further reduces potential impacts on marine bird rookeries on FDM.

Marine birds in the Study Area include those listed under the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703–712; Ch. 128; 13 July 1918; 40 Stat. 755 as amended) (U.S. Department of Defense and U.S. Fish and Wildlife Service, 2006). In 2006, the USFWS and DoD signed a Memorandum of Understanding to promote conservation of migratory birds (U.S. Department of Defense and U.S. Fish and Wildlife Service, 2006). Of the 1,093 species protected under the MBTA, over 100 species are known

or believed to occur in the Study Area. These species were not analyzed individually, but rather are grouped based on taxonomic or behavioral similarities based on the stressor being analyzed. Through the National Defense Authorization Act, Congress determined that allowing incidental take of migratory birds as a result of military readiness activities is consistent with the MBTA. The Final Rule was published in the Federal Register on February 28, 2007 (Federal Register Volume 72, No. 29, February 28, 2007), and may be found at 50 CFR Part 21.15. The measure directs the Armed Forces to assess the effects of military readiness activities on migratory birds, in accordance with NEPA. It also requires the Armed Forces to develop and implement appropriate conservation measures if a proposed action may have a significant adverse effect on a migratory bird population. Specifically, 50 CFR Part 21.15 specifies a requirement to confer with the USFWS when the military readiness activities in question will have a significant adverse effect on a population of migratory bird species.

Since the stressors introduced during training and testing activities will not result in a significant adverse effect on any population of a migratory bird species, consultation with USFWS on marine birds protected under the MBTA was not warranted.

Marine Vegetation. Stressors analyzed for marine vegetation included explosives and physical disturbance and strike. However, potential impacts will be from in-water explosives. Explosives could affect vegetation by destroying or removing marine vegetation; however, the use of explosives is not expected to impact the long-term survival, annual reproductive success, and lifetime reproductive success of marine vegetation. Physical disturbance and strike could affect vegetation by destroying individuals or damaging parts of individuals; however, impacts at the population level will be negligible.

Marine Invertebrates. Marine invertebrates may be exposed to non-impulsive sounds generated by sonar and other acoustic sources, vessel noise, and aircraft noise during training and testing activities. Acoustic impacts on marine invertebrates will be inconsequential because most will not be close enough to intense sound sources to cause an injury. Non-impulsive sounds are not expected to impact the majority of marine invertebrates or cause more than a short-term behavioral disturbance (e.g., change in orientation or swim speeds) to those capable of detecting nearby sound. No population-level impacts on the survival, growth, recruitment, or reproduction of marine invertebrate populations are expected.

Explosions at the water surface will not injure benthic marine invertebrates, including those living in hydrothermal vents. Explosives may impact individuals or groups of marine invertebrates, but are unlikely to impact populations or subpopulations.

The impact of physical disturbance and strike stressors on marine invertebrates is likely to cause injury or mortality to individuals, but impacts on marine invertebrate populations, including ESA-listed corals, are unlikely.

Impacts on marine invertebrates from in-water electromagnetic devices, entanglement, and ingestion of military expended materials will be negligible.

Stressors from Navy training and testing activities could pose secondary impacts on marine invertebrates via habitat, sediment, or water quality. Concentrations of metals in water are extremely unlikely to be high enough to cause injury or mortality to marine invertebrates, or cause bioaccumulation of chemicals from metals or plastics. Therefore, indirect impacts on water quality from metals are likely to be negligible and not detectable. Marine invertebrates could be indirectly impacted by chemicals from plastics but, absent bioaccumulation, these impacts will be limited to direct contact with the material because relatively few military expended materials contain plastics.

The Navy determined that training and testing activities with explosives and other stressors such as strike may adversely affect ESA-listed invertebrate species (*Acropora globiceps*) in the MITT Study Area.

The Navy determined that the remaining stressors are not likely to adversely affect *Acropora globiceps*. The Navy determined and NMFS concurred that stressors introduced into the marine environment from training and testing activities will either have no effect or are not likely to adversely affect *Acropora retusa* or *Seriatopora aculeata*. NMFS concurred with Navy determinations.

Fishes. Some sonars and other transducers, vessel noise, and weapons noise could result in hearing loss, masking, physiological stress, or behavioral reactions. Aircraft noise will not likely result in impacts other than brief, mild behavioral responses in fishes that are close to the surface. Most impacts, such as masking or behavioral reactions, are expected to be temporary and infrequent as most activities involving acoustic stressors will be at low levels of noise, temporary, localized, and infrequent.

The use of explosives could injure or kill fishes within the Study Area; however, the number of individuals impacted will be small relative to the overall size of fish populations. Repeated exposure of individual fish is unlikely because activities involving explosions are dispersed in space and time. Most impacts, including behavioral responses, are expected to be short term and localized.

The use of in-water electromagnetic devices may elicit brief behavioral or physiological stress responses only in those exposed fishes with sensitivities to the electromagnetic spectrum. This behavioral impact is expected to be temporary and minor. In-water electromagnetic fields will be continuously moving and cover only a small spatial area during use; thus, population-level impacts are unlikely.

Impacts on fishes from vessel strikes, in-water device strikes, military expended material strikes, and seafloor device strikes are unlikely because most fishes are highly mobile and have sensory capabilities that enable the detection and avoidance of vessels, expended materials, or objects in the water column or on the seafloor. The only exceptions are a few large, slow-moving species such as manta rays, ocean sunfish, and whale sharks that occur near the surface in some areas. Long-term consequences from vessel strikes for individuals and fish populations are not expected.

Fishes could be exposed to multiple entanglement and ingestion stressors associated with Navy training and testing activities. There is a low probability of entanglement because of the physical characteristics of the stressors and the sparse distribution of these items. Population-level impacts are unlikely because of the low numbers of fishes potentially impacted by entanglement or ingestion stressors.

Effects on sediment or water quality could have short-term, small-scale secondary effects on fishes; however, there will be no persistent or large-scale effects on the growth, survival, distribution, or populations of fishes.

The Navy determined that explosives used during training and testing are likely to adversely affect ESA-listed fish in the MITT Study Area, including scalloped hammerhead sharks (*Sphyrna lewini*), oceanic whitetip sharks (*Carcharhinus longimanus*), and giant manta rays (*Manta birostris*).

The Navy determined that the remaining stressors may affect, but are not likely to adversely affect those three ESA-listed fish. NMFS concurred with Navy determinations.

Terrestrial Species and Habitats. Sources of noise from weapons firing that may be heard by wildlife on FDM include close-in weapons firing from vessels, helicopters, close-combat surface firing from fixed-wing aircraft, and surface firing, with the largest increase in munitions use resulting from small arms, medium-caliber explosives, and mortar and grenade use during Direct Action training activities. These training events will occur within the Northern Special Use Area and fire into the impact areas towards the south; therefore, more megapodes and bats (along with other wildlife species) will be exposed to more weapons firing noise.

There will be an increase in the number of explosions on FDM, which will increase the number of exposures to percussive force. Although more ordnance could be used on FDM, all of the ordnance will target impact zones, with the same avoidance and minimization measures as previously analyzed, and will remain within total net explosive weight amounts considered authorized in the 2015 USFWS Biological Opinion.

Navy training activities have the potential to impact terrestrial species and habitats through direct strike, habitat disturbance, and potential wildfires ignited by training activities on FDM. Factors that limit the potential for additional adverse impacts from physical disturbance and strike include maintaining the same ordnance type and targeting restrictions included as part of the 2015 MITT Final EIS/OEIS. All ordnance expended on FDM will target existing impact zones with the same ordnance restrictions imposed on all FDM activities and with the same avoidance and minimization measures in place as required under the 2015 USFWS Biological Opinion.

Recent Scientific Information

The scientific community continues to conduct research and generate new data in an effort to expand and improve the understanding of the marine environment. The Navy is a strong advocate for and sponsor of marine research and is vigilant in its review of new information that may inform the analyses or affect the conclusions. The Navy has identified additional references, many of them published within the last year, that are relevant to the analyses in the MITT Final SEIS/OEIS. These references are peer-reviewed journal articles and present the results of ongoing and new research on the topics of general auditory capabilities and the effects of anthropogenic sound on marine resources. These new references do not change the impacts analyses or conclusions summarized above. In addition, numerous studies and data sources were identified from comments received on the MITT Final SEIS/OEIS for the Navy to consider. The Navy is aware of these studies and data sources and after careful consideration, determined that they would not change the Navy's analysis or conclusions presented in the MITT Final SEIS/OEIS. The Navy will continue to monitor and review the results of new research and evaluate how those results apply to the Navy's assessment of marine resources. Due to their relevance to the analysis of the Proposed Action, however, several of these studies are described below.

Marine Mammals. New information concerning mysticete hearing capabilities was produced by exposing migrating gray whales (*Eschrichtius robustus*) to moored-source Integrated Marine Mammal Monitoring and Protection System sonar transmissions in the 21–25 kilohertz (kHz) frequency band (Frankel & Stein, 2020). The results showed that, compared to controls, gray whales changed their path and moved closer to the shore when the vessel range was 1–2 kilometers (km) during sonar transmissions. Estimated received levels were approximately 148 decibels referenced to 1 micropascal squared. Frankel and Stein (2020) conclude that gray whales can hear up to 21 kHz. This evidence supports the Southall et al., 2019 and U.S. Department of the Navy 2017 estimated mysticete hearing range extending up to 30 kHz.

Several publications described masking and spatial release from masking in marine mammals. Kloepper and Branstetter (2019) demonstrated that individual bottlenose dolphins can have different strategies for avoiding sonar jamming (i.e., masking of echolocation by echolocation signals from others). One subject responded by omitting clicks, a temporal response, and the second subject increased peak frequency and lowered center frequency, increasing click bandwidth (i.e., a spectral response). Spatial release from masking will occur when a noise and signal are separated in space, resulting in a reduction or elimination of masking (Popov et al., 2020). The relative position of sound sources can act as one of the most salient cues that allow the listener to segregate multiple sounds in a complex auditory scene. Marine mammals have excellent sound source localization capabilities (Byl et al., 2019) and a directional

receiving beam pattern which likely combine to aid in separating auditory events, thus improving detection performance.

Additionally, a study that analyzed sounds from air gun arrays and pile driving at different distances described how impulsive characteristics (rise time, pulse duration, peak pressure, and crest factor) changed with range to source (Hastie et al., 2019). Impulsive characteristics underwent the most change in the 0.5 – 10 km range, after which they plateaued. This study provides support for the conclusion that the quotient of peak pressure and signal duration exceeds 5,000 Pascal seconds in the 2 – 3 km range, but the authors suggest that more research be conducted to determine whether the quotient of these metrics is biologically meaningful (i.e., relationship to temporary threshold shift). No modification of analysis of auditory impacts is currently suggested, as auditory impact thresholds are based on best available data for impulsive and non-impulsive exposures to marine mammals.

Recent publications on marine mammals' behavioral reaction to vessel noise and presence support existing literature on a variety of species [humpback whale – Fiori et al. (2019); bottlenose dolphins - Kassamali-Fox et al., (2020)]. For example, most primary literature cited in Erbe et al.'s (2019) review was already addressed in the MITT Final SEIS/OEIS, but their metanalysis identified gaps in the literature and confirmed that the impacts of ship noise on marine mammals appears to be largely context- and species-dependent. Fiori et al. (2019) and Kassamali-Fox et al. (2020) measured ceatacean's behavioral responses to tourism activities. Fiori et al. (2019) identified the most invasive type of vessel approach, which correlated with avoidance responses much more than parallel approaches. Mother humpback whales were particularly adverse to these "J" type approaches. They also spent significantly more time diving when tour boats and swimmers were present, indicating a preference for a vertical avoidance strategy. Kassamali-Fox et al. (2020) found that in the presence of tour boats, bottlenose dolphins were less likely to continue socializing, more likely to travel, and were not likely to begin foraging during avoidance responses.

Impacts from other non-Navy anthropogenic sources such as unmanned aerial vehicles (Christiansen et al., 2020), pingers (Omeyer et al., 2020), multibeam echosounders (Varghese et al., 2020), and pile driving (Graham et al., 2019) support the MITT Final SEIS/OEIS analysis on behavioral reactions. Christiansen et al. (2020) flew unmanned aerial vehicles 5–30 meters (m) above 10 southern right whale mother-calf pairs and did not observe any behavioral response in the form of changes in swim speeds, respiration rates, turning angles, or inter-breath intervals. In addition, some of the animals were equipped with digital sound recording tags to measure the sound of the unmanned aerial vehicle; the received levels in the 100–1500 Hertz band were 86 ± 4 decibels (dB) referenced to 1 micropascal , very similar to ambient noise levels measured at 81 ± 7 dB in the same frequency band. Varghese et al. (2020) analyzed group vocal periods from Cuvier's beaked whales during multibeam echosounder activity recorded in the Southern California Antisubmarine Warfare Range. No clear evidence of behavioral response due to multibeam echosounder was found. These results are in contrast to previous work, where beaked whales reduced foraging or left the area in response to sonar sounds**.** Omeyer et al. (2020) tested a 50–120 kHz pinger near harbor porpoises and found that a response only occurred in relatively close proximity to the pinger. While clicking returned to normal levels as soon as the pinger was shut off (implying no long-term displacement), the response to the active pinger remained consistent over the nine-month study period, indicating that the pingers remained an effective deterrent. Effects on harbor porpoise from other anthropogenic sound sources, such as wind-farm construction, has been investigated by Graham et al. (2019), which monitored harbor porpoise echolocation clicks during impulsive pile-driving. The results revealed that distance at which behavioral responses were probable decreased over the course of the construction project, suggesting habituation to pile-driving noise in the local harbor porpoise population**.** The above studies contribute to the

understanding of marine mammal responses to anthropogenic stressors, but do not modify the conclusions in the MITT Final SEIS/OEIS.

Publications about cetacean stranding covered topics ranging from reasons stranding might take place [magnetoreception – Granger et al., (2020), beaked whale dive behavior – De Soto et al. (2020) and Barlow et al. (2020)], and factors that could complicate the assessment of a marine mammal carcass's cause of death, such as decomposition, buoyancy, oceanic conditions, and environmental mechanical damage (Moore et.al, 2020). While these publications add to the understanding of potential mechanisms of stranding and the caution that should be taken during autopsy, they do not affect the results of the MITT Final SEIS/OEIS stranding analysis or established mitigation measures.

Fish. Prior to the publication of the MITT Final SEIS/OEIS, Dahl et al. (2020) reported the effects of underwater explosions on one species of Clupeiform fish, Pacific sardines (*Sardinops sagax*), with a physostomous swim bladder (an open swim bladder with direct connection to the gut via pneumatic duct). Fish were stationed at various distances prior to each explosion, in addition to a control group that was not exposed. Necropsies following explosions observed significant injuries, including fat hematoma, kidney rupture, swim bladder rupture, and reproductive blood vessel rupture. While most significant injuries were consistently present at close range (<50 m), there were inconsistent findings at the 50–125 m range, suggesting possible acoustic refraction effects, including waveform paths that were bottom-reflected, surface-reflected, or a combination of both. Ranges at which injuries were observed within the present study are similar to those estimated by the Navy's Acoustic Effects Model for fishes with a swim bladder for detonations modeled in southern California (where the study took place). The conclusions from this paper would not change the impact analysis in the MITT Final SEIS/OEIS. Furthermore, the Navy continues to fund similar projects, including survival studies and those examining other types of fish (such as physoclists, species with a closed swim bladder), as they are crucial to consider before extrapolating findings to other fish species.

Currently, fishes are classified into specific hearing groups depending on the presence/absence of a swim bladder and morphological adaptations that enhance a fish's frequency detection capabilities (see Popper et al., 2014). Both the quantitative literature review conducted by Wiernicki et al. (2020) and x-ray and image processing performed by Schulz-Mirbach et al. (2020) continue to support these hearing group classifications. Additional research is still needed to better understand species-specific frequency detection capabilities and overall sensitivity to sound.

Analysis of noise induced hearing loss in the MITT Final SEIS/OEIS is further supported by playback studies on African cichlids (*Astatotilapia burtoni*), a freshwater species with a swim bladder involved in hearing (Butler & Maruska, 2020). Observed threshold shifts were only significantly different than controls in lower frequencies (200 and 300 Hertz) which corresponds to the species best range of hearing sensitivity. Although this information is specific to a freshwater species, it aligns well with observations of hearing loss in other species of the same hearing group.

General behavioral and physiological stress responses documented in recent studies are similar to those observed and summarized in the MITT Final SEIS/OEIS. Some examples include: changes in swimming depth and speed; avoidance or increases in horizontal movement; changes in attention/distraction; decreased group cohesion (inter-individual distance); changes in stress hormones; and reduction in catch rates (Bruce et al., 2018; Hubert et al., 2020; Ivanova et al., 2020; Mills et al., 2020). New observations not previously observed or described in the MITT Final SEIS/OEIS include modification of aggressive and reproductive behaviors and decreased efficacy in learning due to distraction (Butler & Maruska, 2020). In addition, two studies showed a lack of response during noise exposure compared to ambient or quiet treatments (Hubert et al., 2020; Staaterman et al., 2020). Overall new research continues to highlight the importance of considering inter-species variability, test environments (small

tanks vs open ocean), and context of the exposure when analyzing a fish's response to anthropogenic noise as conclusions from studies with seemingly similar methodologies continue to produce different results.

Birds. Two new scientific publications on wild-caught birds (Larsen et al., 2020; Mooney et al., 2019) provide valuable contributions to our understanding of diving bird hearing in air and in water. Mooney et al. (2019) showed that Atlantic puffins (*Fratercula arctica*), hear best at 1–3 kHz in air, and the authors suggest that the upper-cutoff of hearing is between 6 and 8 kHz. Larsen et al. (2020) measured in-air and underwater hearing of fledgling great cormorants (*Phalacrocorax carbo sinensis*), and found a best frequency of 1 kHz for both media, whereas an adult test subject of the same species showed a best frequency of 2 kHz underwater (Hansen et al., 2017). However, none of the new findings contradict what is known about bird hearing in general.

Sea Turtles. Ferrara et al. (2019) and McKenna et al. (2019) recorded sound characteristics in turtle nests and represent the best available science regarding the purpose and production of vocalizations for Kemp's ridley and olive ridley sea turtle embryos and hatchlings.

There is no new and relevant scientific literature found in this review that would substantially change the Navy's analysis and conclusions in the MITT Final SEIS/OEIS.

Agency Consultation and Coordination

NMFS has served as a cooperating agency throughout the SEIS/OEIS process pursuant to 40 CFR section 1501.6 because of its expertise and regulatory authority over certain marine resources. Additionally, NMFS intends to use this document as its NEPA documentation in support of its rule-making process under the MMPA. The MITT SEIS/OEIS is also being prepared in coordination with the U.S. Coast Guard as a cooperating agency, as its at sea and FDM training and testing activities in the Study Area are included in the Proposed Action. The Navy also consulted and coordinated with other federal and local agencies, including Historic Preservation Officers and Coastal Zone Management Act (CZMA) administrators within the Study Area in conjunction with actions addressed in the MITT SEIS/OEIS. A summary of the results from each consultation and coordination process is included below:

- **Marine Mammal Protection Act.** The Navy submitted an application for incidental take authorizations to NMFS on February 11, 2019, for stressors associated with certain training and testing activities (the use of sonar, other transducers, and explosives), as described under the Preferred Alternative (Alternative 2). On July 30, 2019, the Navy submitted a revised request to NMFS, which included corrections to errors, typos, and transcription mistakes. This revision did not change any of the Navy's analysis or conclusions, but reaffirmed the Navy's position for not requesting ship strike and mortality takes. Finally, on December 11, 2019, a second revised request was submitted to NMFS to correct additional transcription mistakes as well as ensure the file was Section 508 compliant. Based on additional analyses conducted by the NMFS ESA staff in the context of the MITT ESA consultation, estimated takes under the MMPA for humpback whales were altered to align the analyses under the two statutes. This resulted in an increase in Level B takes as well as the addition of 2 permanent threshold shift (PTS) takes over the course of the 7-year rule. The Final Rule is scheduled to be published on July 31, 2020, and NMFS has indicated their intent is to conclude that the Navy's training and testing activities will have a negligible impact on the marine mammal species and stocks present in the MITT Study Area and, when considering implementation of the mitigation measures described in the MITT Final SEIS/OEIS, the Navy will affect the least practicable adverse impact on marine mammal species or stocks and their habitat. Following the publication of the Final Rule, NMFS is expected to issue an LOA for Navy training and testing activities. The LOA authorizes the taking of marine

mammals incidental to Navy training and testing activities conducted in the MITT Study Area pursuant to Section 101 (a)(5)(A) of the MMPA. The LOA specifies the type and amount of incidental take that is authorized, by species, as well as the Navy's mitigation, monitoring, and reporting requirements. NMFS intends to coordinate the LOA with the Incidental Take Statement (ITS) the Navy anticipates to receive for endangered marine mammals pursuant to section 7 of the ESA.

- **Endangered Species Act.** The Navy requested initiation of formal consultation with NMFS (Headquarters, Office of Protected Resources) on ESA-listed species in a letter on June 18, 2019. Species addressed were the blue whale; fin whale; humpback whale from the Western North Pacific DPS; sei whale; sperm whale; green sea turtle from the Central West Pacific DPS, East Indian-West Pacific DPS, and North Central Pacific DPS; hawksbill sea turtle; leatherback sea turtle; loggerhead sea turtle; olive ridley sea turtle; giant manta ray; oceanic whitetip shark; scalloped hammerhead shark from the Indo-West Pacific DPS; and three coral species.

  In the conduct of their independent analysis, NMFS revised the total number of predicted exposures to humpback whales, by incorporating a preliminary assessment generated by the Pacific Islands Fishery Science Center (PIFSC) staff of the density of humpback whales specific to Marpi and Chalan Kanoa reefs. NMFS's approach did not utilize acoustic propagation modeling to generate these takes. Instead, they assumed that the entire abundance of the population of the reefs could be affected by Navy sonar during the conduct of every Tracking Exercise event, representing 20 hours of MF1 mid-frequency active sonar use. NMFS' independent analysis raised the number of Level B takes as well as added two PTS takes for humpback mom/calves over the 7-year authorization. The Navy and NMFS' overall conclusion is that training and testing activities will not result in long term consequences to humpback whale populations, which is consistent with the conclusions in the MITT Final SEIS/OEIS.

  NMFS issued their Biological Opinion on July 10, 2020**,** and has concluded that any adverse effects to ESA-listed species, as described above, are not likely to jeopardize the continued existence of threatened or endangered species. In addition to the Biological Opinion, NMFS will issue a LOA for the incidental take of marine mammals by July 31, 2020**,** pursuant to section 101(a) (5) of the MMPA, for Navy training and testing activities. The Biological Opinion's ITS for marine mammals becomes effective once the Final Rule is issued. The ITS will exempt Navy actions as described in the MITT SEIS/OEIS from the prohibitions set forth in section 9 of the ESA. Section 9 of the ESA makes it unlawful for any person – including private and public entities – to "take" individuals of an endangered species and, by regulation, a threatened species (16 U.S.C. section 1538).

  In 2015, the USFWS determined that stressors related to training activities on FDM are not likely to jeopardize the continued existence of the Micronesian megapode and the Mariana fruit bat. Because of the small increases in the amount of net explosive weight used on FDM, the number of ordnance items expended, the number of activities conducted, the use of the same select targeted areas on FDM, the continuation of conservation measures and terms and conditions outlined in the 2015 Biological Opinion, and no new science that would change the analysis, activities proposed under Alternative 2 do not trigger the general conditions for reinitiating consultation. Therefore, the Navy did not reinitiate ESA section 7 consultation with USFWS for training activities on FDM because the requirements for reinitiation were not met, pursuant to 50 CFR section 402.16.

- **Magnuson-Stevens Fishery Conservation and Management Act.** On November 21, 2019, the Navy submitted an Essential Fish Habitat (EFH) package to NMFS Pacific Islands Region Office to initiate supplemental EFH consultation. The supplemental consultation focused on changes in training and testing activities since the 2014 EFH consultation and any new applicable science not already considered by the Navy. The NMFS Pacific Island Regional Office letter of December 19, 2019 provided the NMFS response to the Navy's consultation request and included seven additional conservation recommendations. On January 29, 2020, the Navy provided a response to the additional conservation recommendations to avoid, minimize, offset for, or otherwise mitigate potential impacts. The Navy's letter noted that many of the additional conservation recommendations are already addressed under the mandates of the Joint Region Marianas Integrated Natural Resources Management Plan (INRMP), to which NMFS is a signatory. The INRMP contains management goals and specifies resource areas for future monitoring. Many of these INRMP goals and resources align with NMFS' EFH conservation recommendations.

- **Coastal Zone Management Act.** The Navy completed the CZMA federal consistency process for proposed training and testing activities in the Mariana Islands.

  For Guam, based on an evaluation of the effects of the Proposed Action and the enforceable policies of the Guam Coastal Management Program, and pursuant to 15 CFR section 930.39, the Navy submitted a consistency determination to the Guam Bureau of Statistics and Plans (BSP) on December 9, 2019. Guam BSP responded with a conditional concurrence on March 6, 2020 Chamorro Standard Time (ChST) (received by the Navy on April 21, 2020). After discussion with Guam BSP to understand their conditions and resolve any differences, the Navy responded with a letter indicating its intention to proceed over Guam BSP's objection to the Navy's consistency determination on June 8, 2020. Guam BSP subsequently informed the Navy and NOAA's Office of Coastal Resources of their desire to enter into informal or, if needed, formal mediation to resolve issues leading to objections. BSP made that request after the close of the 90-day notice period and after the Navy notified BSP of its intention to proceed over the BSP objection. Due to lack of time remaining before the expiration of the existing MMPA permit, the Navy was unable to postpone the final action and declined mediation, while committing to regular meetings with Guam resource agencies to address concerns with Navy's action.

  For the CNMI, based on an evaluation of the effects of the Proposed Action and the enforceable policies of the CNMI Coastal Resource Management Program, and pursuant to 15 CFR section 930.39, the Navy submitted a consistency determination to the CNMI Bureau of Environmental and Coastal Quality, Division of Coastal Resources Management (DCRM) on December 10, 2019. DCRM replied with a letter on March 9, 2020 (ChST), stating their finding that the Navy's proposed activities "are not consistent" with DCRM's enforceable policies and the need for additional data. The Navy and DCRM met in May 2020 to discuss proposed activities and the environmental impact analysis, as well as to resolve differences. The Navy sent DCRM a letter dated June 8, 2020, providing supplemental information and requesting DCRM's determination. DCRM responded with a letter dated July 20, 2020 (ChST), with a conditional concurrence. The Navy completed the CZMA process by responding to the conditional concurrence with a letter indicating its intention to proceed over DCRM's objection to the Navy's consistency determination on 22 July 2020.

- **National Historic Preservation Act.** The Navy is required to comply with National Historic Preservation Act (NHPA) Section 106 to support its undertaking. Previous analysis of activities under the 2010 MIRC EIS/OEIS had determined there was a potential for adverse effects on

historic properties, resulting in the development of a Programmatic Agreement (PA) covering Navy's activities on Guam and the CNMI. In anticipation of the December 2019 expiration of the 2009 MIRC PA, the Navy initiated Section 106 consultation in January 2019 with a focus toward developing a new PA (or separate PAs for each jurisdiction). Consultation in both jurisdictions included Historic Preservation Officers, the National Park Service, and a number of consulting and interested parties. The Navy held five consultation meetings on Guam and eight meetings throughout the CNMI open to consulting and interested parties. Additionally, site visits and working group sessions with Historic Preservation Officers and the National Park Service have taken place. On August 15, 2019, the Navy invited the Advisory Council on Historic Preservation (ACHP) to participate, but the ACHP declined. In March 2020, the Guam Historic Preservation Office also invited ACHP to participate but did not receive a response. While the Navy continues to actively consult with and develop new long-term PAs for the MITT undertaking, the Parties have executed interim PAs, which incorporate all of the terms and mitigation measures included in the 2009 MIRC PA. The interim PAs took effect after the expiration of the 2009 MIRC PA and address DoD's compliance under Section 106 of the NHPA for MITT activities. The interim PA with the CNMI expires September 10, 2020, while the interim PA with Guam expires September 30, 2020.

The 2015 MITT Final EIS/OEIS evaluated the findings of a preliminary archaeological field survey of FDM conducted in 1996 (Welch, 1997). While no archaeological remains were identified during the survey, the reconnaissance effort was incomplete due to an approaching typhoon and the discovery of "dangerous submunitions" on the island, which prohibited the archaeologists from continuing the work. As part of the current PA development, the Navy, in cooperation with the CNMI Historic Preservation Office, is exploring the feasibility of conducting archeological surveys on FDM as well as in the nearshore waters surrounding the Island. The scope of these surveys must account for the risk of encountering unexploded ordnance on and around FDM as well as the remote location of FDM to ensure the safety of those conducting the effort. The Navy is committed to conducting an archaeological survey of FDM, subject to the limits of feasibility, safety, and availability of funding by September 30, 2023. The Navy is, as part of the development of a new PA, coordinating with the CNMI State Historic Preservation Office on the specifics of archaeological surveys on FDM to enhance the Navy's cultural resource management and to improve the historical record of the people of the Mariana Islands.

Based on the best available site data, implementation of standard operating procedures and mitigation measures to avoid and protect submerged historic properties, and adherence to the terms outline in the interim PAs, the Navy has determined that training and testing activities are not expected to adversely affect submerged cultural resources.

Mitigation Measures

Chapter 5 (Mitigation) of the Final SEIS/OEIS includes mitigation measures that the Navy will implement to avoid or reduce potential impacts from the MITT SEIS/OEIS Proposed Action. The Navy will also implement standard operating procedures specific to training and testing activities conducted under the Proposed Action. The Navy worked collaboratively with the appropriate regulatory agencies through the consultation and permitting processes to develop and finalize the mitigation measures included in the MITT Final SEIS/OEIS, and accepted several additional mitigation measures requested by those agencies.

The Navy's mitigation measures are also identified in the NMFS Biological Opinion, Final Rule, and LOA (see Agency Consultation and Coordination section of this ROD for further details).

In its mitigation measures, the Navy has taken all practicable means to avoid or minimize environmental harm. The Navy's mitigation measures are organized into three categories: procedural mitigation measures for at-sea activities, at-sea geographic mitigation areas, and terrestrial mitigation measures for activities on FDM.

At-Sea Procedural Mitigation. The Navy will implement procedural mitigation measures whenever and wherever training or testing activities involving applicable acoustic, explosive, and physical disturbance and strike stressors take place within the at-sea portion of the Study Area. Procedural mitigation generally involves (1) the use of one or more trained Lookouts to observe for specific biological resources within a mitigation zone, (2) requirements for Lookouts to immediately communicate sightings of specific biological resources to the appropriate watch station for information dissemination, and (3) requirements for the watch station to implement mitigation measures until a pre-activity commencement or during-activity recommencement condition has been met. After completion of explosive activities and when practical, the Navy will also observe the vicinity of where detonations occurred and will follow established incident reporting procedures if any injured or dead marine mammals or ESA-listed species are observed.

At-Sea Mitigation Areas. The Navy will implement geographic mitigation areas within the at-sea portion of the Study Area to (1) avoid or reduce potential impacts on biological resources located on the seafloor or submerged cultural resources in particularly sensitive locations; (2) in combination with procedural mitigation, effect the least practicable adverse impact on marine mammal species or stocks and their habitat; or (3) in combination with procedural mitigation, ensure the Proposed Action does not jeopardize the continued existence of endangered or threatened species. The Navy considers a mitigation area to be effective if it meets the following criteria:

- **The geographic mitigation area is a key area of biological or ecological importance or contains cultural resources:** The best available science suggests that the mitigation area contains submerged cultural resources (e.g., shipwrecks) or is particularly important to one or more species or resources for a biologically important life process (e.g., foraging, migration, reproduction) or ecological function (e.g., shallow-water coral reefs that provide critical ecosystem functions).
- **The geographic mitigation area will result in an avoidance or reduction of impacts:** Implementing the mitigation measure(s) will likely avoid or reduce potential impacts on (1) species, stocks, or populations of marine mammals based on data regarding their seasonality, density, and behavior; or (2) other biological or cultural resources based on their distribution and physical properties. Furthermore, implementing the mitigation measure will not shift or transfer adverse effects from one species to another (e.g., to a more vulnerable or sensitive species).

Mitigation area requirements in the MITT Study Area include the following:

- **Marpi Reef and Chalan Kanoa Reef Mitigation Areas:** The Navy will conduct a maximum combined total of 20 hours of surface ship hull-mounted MF1 mid-frequency active sonar during training and testing from December 1 to April 30 within the Marpi Reef Mitigation Area and Chalan Kanoa Reef Mitigation Area. The Navy will report the total hours of active sonar (all bins, by bin) used in the Marpi Reef Mitigation Area and Chalan Kanoa Reef Mitigation Area from December 1 to April 30 in its annual training and testing activity reports submitted to NMFS. Should national security present a requirement to use surface ship hull-mounted MF1 mid-

frequency active sonar between December 1 and April 30, the Navy will provide NMFS with advance notification of the activity. The Navy will not use in-water explosives in the Marpi Reef and Chalan Kanoa Reef Mitigation Areas year-round. The Navy will issue an annual seasonal awareness notification message to alert ships and aircraft operating in the Marpi Reef and Chalan Kanoa Reef Mitigation Areas to the possible presence of increased concentrations of humpback whales from December 1 through April 30. To maintain safety of navigation and to avoid interactions with large whales during transits, the Navy will instruct vessels to remain vigilant to the presence of humpback whales, that when concentrated seasonally, may become vulnerable to vessel strikes. Platforms will 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.

- **Agat Bay Nearshore Mitigation Area:** The Navy will not use surface ship hull-mounted MF1 mid-frequency active sonar in the Agat Bay Nearshore Mitigation Area year-round. The Navy will not use in-water explosives in the Agat Bay Nearshore Mitigation Area year-round.

Should national security present a requirement to conduct training or testing that exceeds the geographic and/or temporal restrictions, naval units 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 relevant information (e.g., sonar hours, explosives use) in its annual activity reports submitted to NMFS.

Terrestrial Mitigation Measures. The Navy will continue to implement the terrestrial mitigation measures from the 2015 USFWS Biological Opinion during applicable training activities on FDM. The Navy's mitigation measures on FDM primarily involve access, targeting, and ordnance restrictions. Terrestrial mitigation measures are designed to avoid or reduce potential impacts on ESA-listed species that inhabit FDM or could occur at the island during migrations.

Monitoring, Research, and Reporting

The Navy is committed to environmental stewardship, complying with federal environmental laws and regulations, and providing required and relevant reports to appropriate regulatory agencies while executing its national security mission.

As a complement to the Navy's commitment to avoiding and reducing impacts of the Proposed Action through mitigation, the Navy will continue to undertake monitoring efforts to better understand the impacts of the Proposed Action. In recognition of concerns in the CNMI regarding the potential changes in the geophysical condition of FDM that may have occurred over time, the Navy will prepare a baseline assessment of FDM geophysical conditions subject to the limits of feasibility, safety, and availability of funding by September 30, 2023 and will conduct monitoring to gauge changes in FDM's geophysical condition. For marine resources, an additional seven beaked whale focused monitoring and research projects were committed to by the Navy during consultations with the NMFS. This full list is presented in Section 5.1.2.2.1 (Marine Species Research and Monitoring Programs) of the MITT Final SEIS/OEIS.

The Navy developed the Integrated Comprehensive Monitoring Program to serve as the overarching framework for coordinating its marine species monitoring efforts in the Pacific and Atlantic and as a planning tool to focus its monitoring priorities. The purpose of the program is to coordinate monitoring efforts across all regions and to allocate the most appropriate level and type of monitoring effort for each range complex based on a set of standardized objectives, regional expertise, and resource availability. Marine species monitoring studies have been conducted since 2007, when the Navy completed a systematic shipboard survey for marine mammals in the Mariana Islands. This survey

produced the first density estimates for the region. More recently, the Navy has funded research on sea turtle distribution, humpback whale population identity and distribution, baseline occurrence surveys using small boats, passive acoustic monitoring using several different devices, and coral surveys around FDM. Data acquired from past surveys were compiled and used to inform the MITT Final SEIS/OEIS, impacts analysis, geographic mitigation areas, and consultations under the MMPA and ESA. The Navy will continue to fund marine species monitoring studies, including another systematic shipboard survey for marine mammals in 2021 and in-depth investigations into marine mammal strandings in the Mariana Islands. More information, data, and annual reports can be found on the Marine Species Monitoring website at www.navymarinespeciesmonitoring.us/. Taken together, mitigation and monitoring comprise the Navy's integrated approach for reducing environmental impacts from the Proposed Action.

The Navy will continue submitting annual training and testing activity reports as required by the MMPA and ESA, that describe the level of training and testing conducted during the reporting period (e.g., the location and total hours and counts of active sonar hours and in-water explosives used). For major training exercises, the reports include information on each individual marine mammal sighting related to mitigation measure implementation. If they occur, the Navy will report incidents involving biological and cultural resources, such as aircraft or vessel strikes, observed injuries or mortalities to marine mammals or ESA-listed species after the use of explosives, or observed impacts on submerged historic properties.

The Navy and NMFS use the information contained within monitoring, research, activity, and incident reports when evaluating the effectiveness and practicality of mitigation measures and determining if adaptive adjustments may be appropriate. These reports also facilitate a better understanding of the biological resources that inhabit the Study Area and the potential impacts of military readiness activities on them.

Adaptive Management

The Navy's adaptive management process and reporting requirements serve as the basis for evaluating performance and compliance, and involve technical review meetings and ongoing discussions between the Navy, NMFS, and the Marine Mammal Commission. The Navy hosts an annual adaptive management review meeting for the Integrated Comprehensive Monitoring Program, where the Navy, NMFS, and MMC jointly consider the prior year's monitoring goals, monitoring results, scientific advances, and compliance monitoring structure to determine if modifications are warranted to address program goals more effectively. Potential modifications to the Navy's compliance monitoring structure or in how the Navy implements mitigation measures based on national security concerns, evolving readiness requirements, or other factors (e.g., significant changes in the best available science) are evaluated through adaptive management or the appropriate consultations. The Navy also uses the adaptive management process to provide information to NMFS about certain topics, such as technological developments. For example, the Navy will provide information to NMFS about the status and findings of Navy-funded thermal detection studies and any associated practicality assessments at the annual adaptive management meetings.

Since the publication of the MITT Final SEIS/OEIS, the Navy, NMFS, and the authors of the recent beaked whale stranding analysis (Simonis et al. 2020) have continued discussion regarding beaked whale strandings in the Marianas, the analysis presented in Simonis et al. (2020), and the subsequent analysis conducted by the Center for Naval Analysis using the complete sonar data set that is presented in Section 3.4.2.1.1.6 (Stranding) of the MITT Final SEIS/OEIS. These discussions have resulted in all parties gaining a fuller appreciation and understanding of the data sets, statistical methods, and management decisions undertaken. Based on these discussions, the Navy agreed to clarify that a statement included in the MITT Final SEIS/OEIS mischaracterized an aspect of the Simonis et al. (2020) analysis. Specifically,

the MITT Final SEIS/OEIS stated "the study claimed a correlation ($p<0.01$) between strandings and Navy sonar"; instead, it is more accurate to express this as "the study claimed a correlation between sonar and strandings and determined there was a 1 percent probability of the strandings and sonar occurring randomly". Given the history of beaked whale strandings in the Marianas, where more strandings have occurred without the presence of Navy sonar use than with the presence of Navy sonar, there is a need for additional information to more fully understand the potential causes of these strandings. As discussed above in Monitoring, Research, and Reporting, the Navy will co-fund additional beaked whale monitoring and stranding analysis in the MITT Study Area. Further, the Navy will also co-fund and organize a workshop to improve the understanding of beaked whale occurrence and potential effects from Navy activities in the Mariana Islands. The scope of these efforts and the results will be addressed through the adaptive management process with annual reports posted on the Navy's public monitoring website.

Responses to Comments Received on the MITT Final SEIS/OEIS

The Navy reviewed and considered all comments received following the issuance of the MITT Final SEIS/OEIS. The comments summarized here represent the major substantive comments received. Twenty-one comment letters were received and 31 individuals submitted comments online on the MITT Final SEIS/OEIS. The majority of the comments received were concerned with the adequacy of analyses, mitigation measures, and data relied upon by the Navy in its impact conclusions. Comments warranting specific responses are provided below.

Multiple Comments. Multiple comments were received on similar topics. Comments are summarized below, with the Navy's response following.

> Comment: Concern regarding noncompliance with the CNMI's Anti-Degradation Policy and impacts on water quality and sedimentation from erosion of corals surrounding FDM. Recommend an increased frequency of dive surveys (more than once every five years) to more closely monitor impacts from increased bombing and munitions use. Request the Navy identify specific regulatory thresholds and guidelines used to assess impacts on sediment and water quality.
>
> Response: Similar concerns were raised during review of the Draft SEIS/OEIS and responded to in the MITT Final SEIS/OEIS (Section 3.1, Sediments and Water Quality, and Appendix K). These concerns were reiterated after publication of the MITT Final SEIS/OEIS, and the CNMI DCRM , EPA, as well as other commenters raised an additional concern regarding whether or not the Proposed Action was in compliance with the CNMI's Anti-Degradation Policy, outlined in Title 65: Division of Environmental Quality, Part 001, Chapter 65-130-010 of the Environmental Protection Agency's Territory Standards in Effect for Clean Water Act (CWA) Purposes. The Navy does not agree that these standards are applicable to waters surrounding FDM, because they overlay federal submerged lands and are located outside of the CNMI's coastal zone (Public Law 94-241, Presidential Proclamation 9077). The waters around FDM do not appear to meet the requirements to be classified as Tier 3 waters as described in the regulations. To the Navy's knowledge, water quality sampling has not been conducted in waters around FDM, and in the absence of such data, waters are presumed to be Tier 2 waters (see section (b)(3)(A) of the regulation). Further, FDM has been specifically leased to the Navy for use as a bombing range and has been used for this purpose for decades. While the Navy agrees that the waters and environment surrounding FDM appear to be supporting a healthy ecosystem, these waters do not meet the definition of Tier 3 which includes "waters of national parks, marine sanctuaries, wildlife refuges and waters of exceptional recreational or ecological significance."

Nevertheless, the waters surrounding FDM will not be degraded by the Navy's activities as evidenced by over a decade of dive surveys which observed a thriving ecosystem in FDM nearshore waters (Carilli et al., 2018; Smith & Marx, 2016), numerous studies which support the Navy's conclusion that water and sediment quality impacts from munitions constituents will be negligible (see Section 3.1, Sediments and Water Quality, for citations), as well as the fact that the FDM nearshore environment is a high energy, open ocean environment that would limit any increases in turbidity or concentrations of chemical constituents from munitions or erosion caused by munitions. Any such increases will be short-term and not cumulative.

Comment: Concern regarding overall increased toxicity in the marine environment from military activities. Consider recent scientific studies conducted within the CNMI archipelago, which found evidence of significant bioaccumulation of heavy metals in the nearshore environment of Saipan. Request additional quantitative study of the impact of Navy activities on the food supply, particularly marine foods. Use available ethnographic information about food sources used by the people of the Marianas which extend beyond pelagic fish filets. Evaluate a fish consumption pathway, including potential sampling of fished species for munitions constituents, through the consumption of reef fish, whole fish, mollusks, and crustaceans. Consider existing scientific studies by Denton et al., (2014, 2016, 2018).

Response The Navy reviewed the additional studies conducted by Denton et al. (2014); Denton et al. (2016); and Denton et al. (2018) and determined that these studies would not change the analysis in the MITT Final SEIS/OEIS. This determination was based on the following reasons: (1) The Denton et al. studies cited in the comment identify measurable levels of metals in soils on land and in the nearshore waters of Saipan, with many of those sites linked with the locations of World War II-era munitions dumpsites. With the exception of FDM, munitions expended during the activities described in the MITT Final SEIS/OEIS will occur far from shore and in hundreds of meters of water; and (2) The studies cited in the MITT Final SEIS/OEIS (e.g., University of Hawaii studies) are more relevant to the analysis of munitions on the seafloor even though they are not from the Mariana Islands, because the conditions of the deep water environment in those studies that analyzed munitions degradation impacts are very similar to the deep water environment where most munitions used in the Study Area will be expended. The studies cited in the MITT Final SEIS/OEIS better approximate training and testing locations where munitions will be expended.

The one exception to the discussion above is munitions use on FDM. On FDM, explosive munitions that fail to detonate on the bombing range (or non-explosive practice munitions) could remain embedded in soil on the island or in sediments in the shallow nearshore areas surrounding the target area. Munitions remaining on land, if not completely buried in the soil, will be at least partially exposed to the elements (e.g., precipitation, heat, wind, sunlight) that will contribute to degrading the munition over time. Routine Operational Range Clearance activities will limit the amount of time munitions and metal items remain on the range. Erosion of soil in the immediate vicinity of the degrading munition could transport metals and other constituent compounds into nearshore waters. The rate at which this transport might occur is unknown, but munitions are expected to degrade over years to decades, and transport of metals and other compounds will be gradual.

A better analog than the Denton et al. studies for assessing potential impacts from bombing at FDM are the numerous studies conducted at the now closed bombing range at Vieques, Puerto Rico (Agency for Toxic Substances and Disease Registry, 2003, 2013; Bauer & Kendall, 2010; National Oceanic and Atmospheric Administration & Ridolfi Inc., 2006; Pait et al., 2010; Whitall

et al., 2016). Both FDM and Vieques are islands exposed to the open ocean that have been used for years by the Navy for training with the same types of explosive munitions. The Agency for Toxic Substances and Disease Registry evaluated the public health risk from drinking groundwater, incidentally ingesting or touching soil, eating fish and shellfish caught off the island, and breathing air to residents living approximately 8 miles from the Live Impact Area (Agency for Toxic Substances and Disease Registry, 2003). Specifically regarding potential contamination of fish and shellfish, the results showed no explosive compounds in edible fish and shellfish from Vieques and, although metals were detected in some fish and shellfish, the levels were determined to be too low to result in harmful health effects if people consumed the fish. The species collected and tested were grouper, snapper, parrotfish, grunt, goatfish, blue land crab, spiny lobster, and queen conch, because they were identified by several sources as types of seafood that are commonly caught and eaten by residents of Vieques (Agency for Toxic Substances and Disease Registry, 2003), and both fillets and mussel tissues were tested. In summary, the Agency concluded that residents of Vieques have not been exposed to harmful levels of chemicals resulting from Navy training activities at the former Live Impact Area. Bauer and Kendall (2010) reported on the collection and analysis of sediment samples that were tested for the presence of explosive compounds at Vieques, Puerto Rico following the cessation of Navy training activities on the island. Sediment samples were analyzed for the parent compounds (e.g., trinitrotoluene [TNT], Royal Demolition Explosive [RDX], High Melting Explosive [HMX]) and for their degradation products. Of the 78 samples collected, 14 showed signs of explosive compounds and required a more in-depth analysis to confirm the presence of explosive compounds or degradation products. Further analysis revealed that explosives were either not present or were present at such low concentrations that they could not be measured.

NMFS also addressed the potential for explosive byproducts, unexploded munitions, metals, and chemicals to impact ESA-listed marine mammals in their recently concluded Mariana Islands Training and Testing Activities Biological Opinion (OPR-2019-00469) and stated: “The concentration of munitions, explosives, expended material, or devices in any one location in the (MITT) action area are expected to be a small fraction of that from the sites described above. As a result, explosion by-products and unexploded munitions are not anticipated to have adverse effects on water quality or cetacean prey abundance in the action area. For this reason, the effects of explosive byproducts and unexploded munitions on ESA-listed cetaceans through impacts on prey and water quality are considered insignificant, and thus are not likely to cause adverse effects.” NMFS further concluded the following regarding metals and other chemicals: “Thus, the effects of metals introduced into seawater and sediments as a result of MITT activities on ESA-listed cetaceans through impacts to their prey or habitat are insignificant, and thus are not likely to cause adverse effects,” and “In summary, the effects of chemicals used during Navy training and testing on ESA-listed cetaceans via water quality and prey are considered discountable.”

For the reasons described above and in Section 3.1 (Sediments and Water Quality) of the MITT Final SEIS/OEIS, the Navy does not expect that activities at FDM have resulted or will result in elevated concentrations of any munition constitutes that would impact sediments and water quality at FDM or result in any health risk from eating fish or shellfish caught in FDM nearshore waters.

The Navy believes we have adequately addressed the potential impacts from munitions constituents on human health and the environment at FDM; however, to address concerns expressed in comments from the local community and others, the Navy will perform a

supplemental literature review of reef fish bioaccumulation pathway and nearshore sediment and water quality to further assess potential pathways.

CNMI Government (Governor Torres, Department of Lands and Natural Resources, and Bureau of Environmental and Coastal Quality). Comments in the letter are summarized below, with the Navy's response following.

Comment: The Governor, Department of Lands and Natural Resources, and Bureau of Environmental and Coastal Quality provided numerous and varied comments about their concerns on the MITT actions, analysis and impacts, supporting data used, mitigation measures, and the ongoing relationship between the Navy and CNMI resource agencies regarding matters of species monitoring, collaboration, and data sharing.

Response: The Navy values our partnership with the people of Guam and CNMI and will work with both jurisdictions to establish a process through which necessary engagement, such as routine meetings between appropriate Navy representatives and local government officials and resource agencies, can be held to address these and future concerns. The Navy will provide each jurisdiction a draft Standard Operating Procedure outlining the objectives, Navy support, and meeting periodicity (minimum annually) for this engagement within six months of signing the MITT ROD.

Comment: Numerous comments were made regarding the appropriateness and currency of studies and data sources used to support the Navy's conclusions in the MITT Final SEIS/OEIS.

Response: There were numerous assertions by commenters during the wait period that the Navy did not use best available science in the MITT Final SEIS/OEIS. The Navy disagrees with these assertions. The Navy used the best available science in its analysis, including extensive quarterly literature searches during the MITT Draft SEIS/OEIS development and for updates prior to finalizing the MITT Final SEIS/OEIS. The Navy has an ongoing program to conduct online and inter-library loan searches for a Navy-wide reference library supporting Navy at-sea environmental documents. This search process entails direct scans of over 25 marine science related journals, OpenChannels Literature Library, National Oceanic and Atmospheric Administration Research News, Sparrho Scientific Recommendations, the Marine Mammal Society MARMAM e-mail list, the International Association of Aquatic and Marine Science Libraries and Information Centers mailing list, and Google Scholar. New relevant published literature citations are assembled in a consolidated quarterly list sent to Navy EIS subject authors (e.g., corals, fish, marine mammals). The Navy has agreed to provide its library of resources, subject to copyright laws, to the regulatory agencies in Guam and the CNMI. Furthermore, the Navy's Office of Naval Research, Living Marine Resources and Fleet/System Command programs (www.navymarinespeciesmonitoring.us/) fund tens of millions of dollars per year to develop technology and conduct field surveys to address occurrence, exposure, response, and consequences of Navy training and testing activities.

Specific to the MITT Study Area, the following are a few examples broken out by subject area.

- **Marine mammal density**: In 2007, seeing that there was no systematic data and no density estimates for the Mariana Islands, the Navy proactively funded an approximately $4M line transect survey for marine mammals and sea turtles. This resulted in the first density estimates for the region (Fulling et al. 2011). A revised minke whale density estimate and a new spatial habitat model for sperm whales using passive acoustic data were also derived from the 2007 survey (Norris et al. 2017; Yack et al. 2016) used for the MITT Draft SEIS/OEIS and the MITT Final SEIS/OEIS (). When preparing density estimates for at-sea documents,

the expert team uses a hierarchy of data sources (see the Navy's MITT density technical report for more detail). For the MITT SEIS/OEIS, this included density estimates from Fulling et al (2011). For some species where MITT-specific densities had too much uncertainty (e.g., coefficient of variation), more conservative estimates from other similar geographic areas were used. All of the density data is approved by appropriate subject matter experts from NMFS prior to use.

- **Coral**: The Navy began proactively surveying around FDM to assess coral health in 1997. The results of those surveys were published in 2016 (Smith & Marx 2016) and described FDM as a de -facto preserve that had not been impacted by human anthropogenic activities. Surveys for coral reef health and the presence of endangered coral are required under the ESA consultation and scheduled for continuation into the foreseeable future.
- **Marine mammal occurrence**: When the Navy developed the first monitoring plan for the Marianas in support of the MMPA and ESA authorizations, NMFS' Office of Protected Resources suggested that instead of the Navy conducting behavioral response studies in the Marianas, that the Navy focus first on obtaining basic occurrence and distribution of marine mammals and sea turtles. From 2011 to the present, the Navy has been the largest funder of marine mammal and sea turtle research in the region. The Navy partnered with NMFS/PIFSC to conduct small boat surveys, biopsy and tagging of marine mammals, including humpback whales, in Guam and the CNMI from 2010 to 2019. The Navy also partnered with NMFS/PIFSC stating in 2014 to conduct in water surveys, captures, tagging and measurements of sea turtles in the same region. Some of these data are not yet published, but they still represent the best available science and were used as the basis for the Geographic Mitigation Areas. Marine species monitoring reports can be found at https://www.navymarinespeciesmonitoring.us/, marine mammal visual survey data can be found at http://seamap.env.duke.edu/dataset/2071/ and http://seamap.env.duke.edu/partner/NAVY/, and marine mammal tag data can be found at https://portal.atn.ioos.us/?ls=b23012fc-d085-e028-f261-0ad992dd7f68#metadata/5689c621-6d38-4738-b38d-4e160679367d/project/.
- **Mitigation Areas**: The Navy proactively proposed geographic mitigation areas for the MITT Study Area. In other Navy study areas, NMFS designated biologically important areas, which formed the basis of geographic mitigation areas for the Hawaii-Southern California Training and Testing EIS/OEIS. Since biologically important areas have not been designated in the MITT Study Area, the Navy compiled all the existing survey data for the region into a database and used those current data as the basis for proposing geographic mitigation areas for humpback whales, sea turtles and spinner dolphins. The Navy and NMFS considered the best available information for other mitigation areas suggested by commenters. While sightings and transits of the area by some species were noted in review of available scientific research, there is currently no information on specific uses for biologically important life processes beyond normal species broad-area occurrence (e.g., the areas are not exclusive feeding areas, migration routes, or breeding locations). Given this, there is no evidence that limiting training in these areas would reduce impacts on marine mammals, and accordingly, no additional geographic mitigation is warranted, regardless of whether it would be practicable.
- **Acoustic Criteria**: As NMFS stated in their Final Rule, the Navy's acoustic criteria and NMFS Acoustic Technical Guidance also represents best available science. From the Final Rule: "The Navy uses the best available science in the analysis, which has been reviewed by external scientists and approved by NMFS. The Navy considered all data available at the time for the development of updated criteria and thresholds… In addition, the Navy

accounts for the fact that captive animals may be less sensitive, and the scale at which a moderate-to-severe response was considered to have occurred is different for captive animals than for wild animals, as the Navy understands those responses will be different. The new risk functions were developed in 2016, before several recent papers were published or the data were available. The Navy and NMFS continue to evaluate the information as new science is made available. The criteria have been rigorously vetted within the Navy community, among scientists during expert elicitation, and then reviewed by the public before being applied. It is unreasonable to revise and update the criteria and risk functions every time a new paper is published. NMFS concurs with the Navy's evaluation and conclusion that there is no new information that necessitates changing the acoustic thresholds at this time."

Comment: Explain the rationale for the 3-nautical-mile (NM) access restriction at FDM and consider revising for increased access**.**

Response: FDM is used for hazardous training activities involving explosive ordnance. Due to decades of training, there is likely unexploded ordnance in the nearshore areas as a result of ordnance missing or falling short or long of the impact area. It is, therefore, appropriate the Navy maintain permanent access restrictions to both land and nearshore waters. The lease agreement with the CNMI, under which FDM is used as a training range, recognizes this and specifically allows for permanent restriction of waters "immediately adjacent" in the interest of public safety. In response to the CNMI's request, the Navy will reevaluate the current 3 NM restriction using current policy and safety standards and inform the CNMI of the outcome.

Comment: Resolve access issues for research or independent study in and around FDM and other DoD-leased properties in the CNMI. Provide a list of requirements for access to include necessary training, education, and other resources needed for access.

Response: FDM is a bombing range and much of the Island is an impact area. It is an extremely dangerous and potentially lethal area to access. However, the Navy will investigate current policy and safety standards to determine what level of access to FDM, its near shore waters, and other DoD properties is possible, in support of independent study or as a collaborative effort with the Navy. The Navy will provide the CNMI with criteria and standards which must be met to facilitate such access.

Comment: Consider a reduction of the proposed 12 NM exclusion zone to the existing exclusion zone at FDM when the range is in use to allow for public and fishing access.

Response: The current 12 NM Restricted Airspace and the proposed formal 12 NM Surface Danger Zone are based on current weapons safety footprints and are necessary to ensure public safety. If established, the 12 NM Surface Danger Zone will only be activated when hazardous operations are scheduled at FDM, which is similar to the current practice of issuing Notices to Mariners to alert the public of hazardous operations. In either case, the water space between 3 NM and 12 NM will be open during all other times.

Comment: Consider collaborative research design and surveys with potential to support or fund either independent or collaborative studies, research, further data development at FDM and other DoD-leased properties and operation areas.

Response: The Navy will continue to collaborate with both the CNMI and Guam as appropriate during the process for the INRMP as it relates to ongoing and future studies. Additionally, the Navy will seek ways to improve communication and collaboration outside the INRMP process.

Comment: Prioritize commitments made in the MITT Final SEIS/OEIS, including FDM cultural, geological, and beaked whale surveys and studies. Consider coordinating survey development and data sharing with the CNMI.

Response: The Navy has separately articulated these commitments in the NHPA and Monitoring, Research, and Reporting sections of this ROD.

Comment: Consider additional mitigation measures, including requested "no use" mitigation areas at Marpi and Chalan Kanoa reefs, inclusion of rays and sharks in Lookout trainings, and procedural mitigation measures (monitoring and shutdown). Coordinate seasonal range closures and operational range clearance at FDM to coincide with bird breeding season. Consider off-site mitigation for habitat loss and expended material impacts, increase wait time to account for diving marine mammals and sea turtles, limit explosives, high energy lasers, and sonar within CNMI waters

Response: The Navy coordinated with NMFS via ESA section 7 consultation and the MMPA authorization process to identify appropriate monitoring and mitigation measures, which provide the least practicable impact on protected species while accommodating Navy requirements. The Navy will comply with a seasonal sonar cap in both the Marpi Reef Mitigation Area and Chalan Kanoa Reef Mitigation Area to minimize impacts on calving humpback whales. The Navy determined and NMFS concurred that a “no use” sonar mitigation for these areas would be impracticable because it would significantly impact access to nearshore habitat available to support shallow water anti-submarine warfare training in the Study Area. The Navy will continue to comply with procedural mitigation measures designed to protect ESA-listed scalloped hammerhead sharks and giant manta rays when conducting underwater detonations where divers are involved. It would be impracticable to include scalloped hammerhead sharks and giant manta rays in other procedural mitigation measures, such as gunnery events, due to the difficulty in observing or identifying such species from above the water’s surface.

Seasonal closures of FDM to protect breeding seabirds would not be practicable, as Navy access to FDM must support real-world schedules that drive the timing of training.

The Navy addresses habitat impacts at both FDM and throughout the Study Area in the MITT Final SEIS/OEIS. The Navy consulted with NMFS on potential effects on EFH and conducted regular dive surveys at FDM since 1997. Results of these surveys were published in 2016 by Smith and Marx who reported that FDM had become a “de-facto preserve” despite its use by the DoD. All evidence, as well as Navy’s analysis, indicate proposed activities will result in minimal effects on habitat; therefore, offsite mitigation is not warranted.

Wait times for activities to resume after an animal dives are based on information that both the Navy and NMFS believes to be protective of the species and practical to implement.

Requests were made to limit the use of explosives, high energy lasers, and sonar within CNMI waters (within 3 NM of land). The Navy is not proposing to conduct any explosive events within 3 NM of land with the exception of existing Mine Warfare training and testing sites in and around Apra Harbor in Guam and at the FDM range. High energy lasers are also not proposed for use within 3 NM of land. Sonar use within 3 NM of land is infrequent and typically involves use of Mine Warfare and other acoustic systems to detect mines and map the seafloor. All sonar use will be conducted and mitigated in accordance with the Navy’s MMPA Authorization and Biological Opinion, as outlined in Chapter 5 of the MITT Final SEIS/OEIS.

Comment: Acknowledge the lack of consensus on conclusions, methods, and data considered, as well as the definition of "truly meaningful" cumulative impacts. Recognize the commitment of the Navy and the CNMI to continue working to increase understanding, agreement, develop data, and work towards a transparent and enduring process.

Response: The Navy followed CEQ policy and guidance to prepare its cumulative impacts analysis in the Final SEIS/OEIS and believe it is thorough and accurate. The Navy acknowledges the CNMI's concerns and will engage stakeholders to work towards increased understanding and agreement on analytical data needs and methods in support of future NEPA analyses.

Comment: Revise the seven-year permitting request for MMPA and ESA take authorizations to a five-year authorization to align with existing planning cycles of INRMP and Integrated Cultural Resource Management Plan, making it easier for the DoD and the CNMI to ensure data gaps are addressed and allow the Navy to incorporate data produced on beaked whales and cultural and geological resources.

Response: The Navy expects NMFS to issue a seven-year LOA, as supported in NMFS' Proposed Rule that will be published on July 31, 2020. If substantive new science regarding beaked whales or other protected species becomes known, both the Navy and NMFS would be obligated to address the new science via the adaptive management process outlined in NMFS' Final Rule, amend the current LOA, and reinitiate consultation under ESA if necessary. While the Sikes Act requires INRMPs be reviewed for operation and effect every five years, DoD and Navy policy requires annual reviews and INRMPs can be updated any time as necessary.

Comment: Discuss CNMI's resource management and mitigation standards in future analyses, especially for areas and species of particular concern. Acknowledge CNMI's 2019 Eco-valuation of Coral and Seagrass, which estimates these systems generate an annual value of $114.8 million in Saipan, Tinian, and Rota.

Response: The Navy is aware of CNMI's 2019 Eco-valuation of Coral and Seagrass and will continue to consider similar studies as well as CNMI's resource management and mitigation standards in future analyses.

Comment: Improve communication, information sharing, and collaboration.

Response: The Navy recognizes the importance and value of continued communication, outreach, and engagement with local governments and resource agencies. The Navy is committed to identifying opportunities to improve communication, transparency, and trust.

Comment: Include data and a robust discussion of socioeconomic impacts for ongoing and increased activities, including assessment of long-term cleanup requirements for FDM and potential effects to cruise ship routes and development activities in the Northern Islands.

Response: Current and forecasted economic data, until recently, indicated positive economic trends with simultaneously occurring training and testing (ongoing). Proposed activities are similar to ongoing activities, and, based on trend data, are not be expected to impact tourism. Per the CNMI lease, the extent of the restoration of FDM will be determined upon the expiration or termination of the lease, and will be based on any planned future use of FDM by the CNMI. One cruise ship route to the northern Marianas by the cruise line Silver Sea was found; however, the company no longer seems to offer the cruise, according to their website. The cruise route appears to stay west of FDM.

Comment: Address the lack of baseline data on heavy metal contaminants in sediments and water quality to support analysis on human and environmental health risks and associated socioeconomic impacts on tourism, travel, and future development of proposed activities in the larger context of environmental justice research, data collection, analysis and data sharing mandates.

Response: While there is a lack of baseline data for the MITT study area, data from surrogate ranges where munitions concentrations are much higher than is likely in the MITT Study Area show very localized concentrations of constituent contaminants in sediments (i.e., within feet of the munition) compared to baseline samples and no bioaccumulation in benthic fauna.

Laura Taylor, PhD, Northern Marianas College. Comments in the letter are summarized below, with the Navy's response following.

Comment: Consider recent studies regarding whale beaching events for beaked whales that are correlated with the Navy's sonar use. Recommend the Navy conduct surveys of the population of Blaineville's beaked whales and Cuvier's beaked whales within the MITT prior to the expansion of military activities.

Response: The Navy has committed to co-fund additional beaked whale monitoring and stranding analysis in the MITT Study Area. Further, the Navy has committed to also co-fund and organize a workshop to improve the understanding of beaked whale occurrence and potential effects from Navy activities in the Mariana Islands. These efforts will be addressed through the adaptive management process with annual reports posted on the Navy's public monitoring website.

Navy and NMFS thoroughly considered and discussed all scientific evidence relative to the assessing if the Navy's sonar use in the MITT study area could reasonably be likely to result in beaked whale mortality due to stranding (see Section 3.4.2.1.1.6, Stranding, of the MITT Final SEIS/OEIS). Among the information NMFS and the Navy considered was the historical evolution of this issue, the findings in the Simonis et al. (2020) paper, and the subsequent analysis conducted by the Center for Naval Analysis using the complete sonar data set that is presented in Section 3.4.2.1.1.6 (Stranding) of the MITT Final SEIS/OEIS. Given the history of beaked whale strandings in the Marianas, where more strandings occurred without the presence of the Navy's sonar use, the Navy recognizes the need for additional information to more fully understand the potential causes of these strandings.

Comment: Consider the 2020 study by University of Hawaii, which found a breeding ground for the endangered humpback whale. Take action to conserve humpback whale habitat.

Response: The Navy is aware of the reference cited and considered this and the prior references (Hill et al. 2016; 2017) first published four years ago and reporting the same observations on the likely discovery of a breeding ground for humpback whales in the Mariana Islands. The implementation of geographic mitigation measures for humpback whale reproductive behavior in areas off Saipan as described in Appendix I of the MITT Draft SEIS/OEIS and MITT Final SEIS/OEIS is a direct result of those findings and has been incorporated into the analysis.

Comment: Recommend that until methods have been recorded to better assess acoustic capabilities in all species endemic to the Marianas islands, as well as studies implemented to address the lack of data analysis in the MITT Final SEIS/OEIS, acoustic practices such as underwater explosives and sonar use should not increase within the MITT.

Response: The Navy shares concerns over potential impacts on marine species, but the Navy is required to fulfill its mission to defend the people and territory of the United States, which requires the Navy to train and test on aircraft, vessels, and systems, including sonar systems that it needs to complete that mission. The Navy has completed the MITT Final SEIS/OEIS within the framework of NEPA and has analyzed impacts using the best available science. The Navy has funded and will continue to fund numerous surveys of marine mammals in the MITT Study Area to expand the scientific understanding of these animals. One of the primary reasons so few marine mammal species have had direct hearing measurements is because these types of measurements must be conducted while animals are in a controlled setting (i.e., in captivity), and that is neither feasible nor humane for many species, in particular large cetaceans. Both the Navy and NMFS have determined there are no population level impacts on any marine species expected to result from the proposed Navy activities, which includes beaked whale populations and humpback whale populations.

Comment: Use of marine debris survey from Hawaii is an insufficient basis of comparison for the Mariana Islands, given the vast difference in population demographics, commercial activity, ocean currents, and marine populations. Conduct further studies on marine debris located within the MITT before drawing conclusions that expanded testing will not have a major impact on marine debris accumulation.

Response: Please note that the section cited in the comment was part of a general review of threats to marine mammals in consideration of the existing environment, and is not an analysis of marine debris potentially resulting from the Navy's Proposed Action. Also note that the section contains many more references than to just a single study from Hawaii. Analysis of potential impacts to marine mammals from the Navy's expended materials are discussed in Section 3.4.2.6 (Ingestion Stressors) and Section 3.4.2.7 (Secondary Stressors).

Comment: Use of data that is no longer current for coral reefs. Consider more current studies regarding coral bleaching events in the MITT Study Area, which indicate bleaching events may be either directly or indirectly related to the use of activities using explosives. Recommend a reduction in activities using explosives until species are able to recover and no longer retain an "endangered" designation.

Response: The Navy has completed the MITT SEIS/OEIS within the framework of NEPA and has analyzed impacts using the best available science. The Navy had funded the 2017 coral reef surveys off FDM (Carilli et al., 2018), as well as previous coral reef surveys off FDM (see Smith & Marx, 2016) and will continue to fund surveys in the MITT Study Area to expand the scientific understanding of marine organisms.

Coral bleaching is primarily caused by stress associated with changes to temperature, light, or nutrients. There is no evidence that widespread bleaching events in the MITT Study Area are caused by Navy activities, including explosions, as these activities have no effect on water temperature, ambient light, or nutrients. As detailed in the MITT Final SEIS/OEIS, mitigation measures will prevent the use of explosives within a specified distance of shallow-water coral reefs, live hard bottom, and artificial reefs (except within designated training areas) to help the Navy avoid potential impacts on these habitats. Carilli et al. (2020) further discusses coral bleaching at FDM.

Comment: Consider recent studies demonstrating high importance of oceanic island habitats to the endangered hammerhead shark, particularly regions with shallow seamounts (such as the

Marianas Islands). Conduct a survey of the resident population within the MITT prior to increased military activities to ensure sites do not interfere habitation zones.

Response: The Navy has completed the MITT Final SEIS/OEIS within the framework of NEPA and has analyzed impacts using the best available science. While the citation Nalesso et al (2019) is a recent study on movement patterns of ESA-listed scalloped hammerhead sharks, this study does not present new information related to the habitat and geographic range of this species. Therefore, the information presented in the 2015 MITT Final EOS/OEIS, as stated in the MITT Final SEIS/OEIS, is valid. In addition, NMFS has issued a Biological Opinion that supports the Navy's analysis and determined that the effects of training and testing activities within the MITT Study Area are not expected to appreciably reduce the likelihood of survival and recovery of Indo-West Pacific DPS scalloped hammerhead sharks in the wild.

Our Common World 670. Comments in the letter are summarized below, with the Navy's response following.

Comment: Consider how the continuation of training and testing within the MITT Study Area compound the economic hardships facing the CNMI, including impacts of the coronavirus.

Response: While the economic impacts of the worldwide coronavirus pandemic are uncertain, continuing training and testing in the MITT Study Area will require the continued presence of military personnel in the region, who, along with their families, will help sustain the economies of Guam and the CNMI in the absence of tourism and associated sources of income from outside of the territories.

Comments Related to the Navy's NHPA Section 106 Consultation

Multiple Comments. Multiple comments were received regarding the Navy's NHPA Section 106 consultation process and the need for additional cultural and archaeological surveys throughout the MITT Study Area. Comments are summarized below, with the Navy's response following.

Comment: Consult with indigenous people in regard to cultural resources. Conduct additional cultural and archaeological surveys of the coastal waters of the Mariana Islands, Tinian, and FDM, including surveys of the nearshore area of FDM to ensure the nearshore actions and activities do not inadvertently damage or alter existing cultural or historical sites and resources.

Response: The Navy is consulting with interested parties, which include indigenous people from the Mariana Islands, through the NHPA Section 106 process. The request for additional surveys is addressed in this ROD under the NHPA discussion above.

C. CONCLUSION: Based on factors analyzed in the MITT Final SEIS/OEIS, including military training and testing objectives, best available science and modeling data, potential environmental impacts, and input and expertise of federal and local agencies and nongovernmental organizations, as well as from the public, the Navy selects Alternative 2 for implementation. Alternative 2, identified as the Navy's Preferred Alternative in the Final SEIS/OEIS, will fully meet the Navy's current and future training and testing requirements in the MITT Study Area. By implementing the mitigation measures identified in the Final SEIS/OEIS and associated regulatory documents, and adhering to management plans and monitoring requirements described herein, the Navy has adopted all practicable means to avoid or minimize environmental harm. In addition, the Navy assessed the effects of Alternative 2 in accordance with Executive Order 12114 and concluded that there will be no significant harm to the environment in areas outside the United States and possessions.

7/29/20

Date

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(Energy, Installations & Environment)