DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 219

[Docket No. 250505–0076]

RIN 0648–BG31

Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to Pacific Islands Fisheries Science Center Fisheries Research

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

ACTION: Final rule; notice of issuance of letter of authorization.

SUMMARY: NMFS' Office of Protected Resources (OPR), upon request from NMFS' Pacific Islands Fisheries Science Center (PIFSC), hereby issues regulations to govern the unintentional taking of marine mammals incidental to fisheries research conducted in multiple specified geographical regions over the course of 5 years. These regulations, which allow for the issuance of Letters of Authorization (LOAs) for the incidental take of marine mammals during the described activities and specified timeframes, prescribe the permissible methods of taking and other means of effecting the least practicable adverse impact on marine mammal species or stocks and their habitat, as well as requirements pertaining to the monitoring and reporting of such taking. Upon publication of this final rule, NMFS will issue an LOA to PIFSC for the effective period of the final rule.

DATES: Effective May 16, 2025, the sunset date of January 15, 2026, for part 219 added at 86 FR 3868, Jan. 15, 2021, is removed. This rule is effective as of May 16, 2025, except for amendatory instruction 4, which is effective from May 16, 2025 through May 15, 2030.

ADDRESSES: A copy of PIFSC's application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: *www.fisheries.noaa.gov/action/incidental-take-authorization-noaa-fisheries-pifsc-fisheries-and-ecosystem-research.* In case of problems accessing these documents, please call the contact listed below.

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

SUPPLEMENTARY INFORMATION:

Availability

A copy of PIFSC's application and any supporting documents, as well as a list of the references cited in this document, may be obtained online at: *https://www.fisheries.noaa.gov/action/incidental-take-authorization-noaa-fisheries-pifsc-fisheries-and-ecosystem-research.* In case of problems accessing these documents, please call the contact listed above (see **FOR FURTHER INFORMATION CONTACT**).

Purpose and Need for Regulatory Action

These regulations establish a framework under the authority of the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1361 *et seq.*) to allow for the authorization of take of marine mammals incidental to the PIFSC's fisheries research activities in the Hawaiian Archipelago, Mariana Archipelago, American Samoa Archipelago, and Western and Central Pacific Ocean.

We received an application from the PIFSC requesting 5-year regulations and an LOA to take multiple species of marine mammals. Take would occur by Level B harassment incidental to the use of active acoustic devices, as well as by visual disturbance of pinnipeds, and by Level A harassment, serious injury, or mortality incidental to the use of fisheries research gear. Please see Background below for definitions of harassment.

Legal Authority for the Final Action

Section 101(a)(5)(A) of the MMPA (16 U.S.C. 1371(a)(5)(A)) directs the Secretary of Commerce to allow, upon request, the incidental, but not intentional taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region for up to 5 years if, after notice and public comment, the agency makes certain findings and issues regulations that set forth permissible methods of taking pursuant to that activity and other means of effecting the ''least practicable adverse impact'' on the affected species or stocks and their habitat (see the discussion below in the Mitigation section), as well as monitoring and reporting requirements. Section 101(a)(5)(A) of the MMPA and the implementing regulations at 50 CFR part 216, subpart I, provide the legal basis for issuing this rule containing 5-year regulations, and for any subsequent LOAs. As directed by this legal authority, this rule contains mitigation, monitoring, and reporting requirements.

Summary of Major Provisions Within the Regulations

Following is a summary of the major provisions of this final rule regarding PIFSC fisheries research activities. These measures include, but are not limited to:

- Monitoring the sampling areas to detect the presence of marine mammals before and during deployment of certain research gear;
- Delaying setting or haul in gear if marine mammal interaction may occur;
- Hauling gear immediately if marine mammals may interact with gear; and
- Implementing the mitigation strategy known as the ''move-on rule,'' which incorporates best professional judgment, when necessary during certain research fishing operations.

Background

The MMPA prohibits the ''take'' of marine mammals, with certain exceptions. Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed incidental take authorization may be provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other ''means of effecting the least practicable adverse impact'' on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stocks for taking for certain subsistence uses (referred to in shorthand as ''mitigation''); and set forth requirements pertaining to the mitigation, monitoring and reporting of the takings. The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

Summary of Request

On November 30, 2015, we received an adequate and complete application

from PIFSC requesting authorization to take small numbers of marine mammals incidental to fisheries research activities. On December 7, 2015 (80 FR 75997), we published a notice of receipt of PIFSC's application in the **Federal Register**, requesting comments and information related to the PIFSC request. The public comment period was open for 30 days, from December 7, 2015, through January 1, 2016. We received joint comments from The Humane Society of the United States and Whale and Dolphin Conservation (HSUS/WDC). These comments were considered in development of the proposed rule and are available online at: *https://www.fisheries.noaa.gov/action/incidental-take-authorization-noaa-fisheries-pifsc-fisheries-and-ecosystem-research*.

In accordance with the MMPA, we published a notice of proposed rulemaking in the **Federal Register** on March 22, 2021 (86 FR 15298), and requested comments and information from the public. The public comment period was open for thirty days, from March 22, 2021, through April 21, 2021. We did not receive any comments on the proposed rule.

As explained below, subsequent to the publication of the proposed rule, PIFSC advised NMFS of an additional research program that was not identified in the proposed rule. Despite the time that has elapsed since the PIFSC's application was initially received and publication of the proposed rule and although the additional research program was not identified in the proposed rule, we believe it is unnecessary to engage in another round of notice and comments because the description of the specified activity that can be expected to result in incidental take of marine mammals, the type of incidental take authorization that is being requested, the method of incidental take, and the anticipated impact of the activity on the species or stock of marine mammals remains unchanged. Further, new science and information necessary to evaluate this application that has become available since the PIFSC submitted their application has been considered and is addressed in this rule. NMFS has reviewed newly available information since publication of the proposed rule for comment, including updated SARs and scientific literature, and determined that there is no new information that would warrant new solicitation of public comment.

PIFSC plans to conduct fisheries research using trawl gear used at various levels in the water column, hook-and-line gear (including longlines with multiple hooks, bottomfishing, and trolling), and deployed instruments (including various traps). If a marine mammal interacts with gear deployed by PIFSC, the outcome could potentially be Level A harassment, serious injury (*i.e.,* any injury that will likely result in mortality), or mortality. Although any given gear interaction could result in an outcome less severe than mortality or serious injury, we do not have sufficient information to allow parsing these potential outcomes. Therefore, PIFSC presents a pooled estimate of the number of potential incidents of gear interaction and, for analytical purposes we assume that gear interactions would result in serious injury or mortality. PIFSC also uses various active acoustic devices while conducting fisheries research, and use of some of these devices has the potential to result in Level B harassment of marine mammals. Level B harassment of pinnipeds hauled out may also occur, as a result of visual disturbance from vessels conducting PIFSC research.

The LOA issued under this final rule authorizes take of small numbers of marine mammals of 15 species by serious injury or mortality (hereafter referred to as M/SI) or Level A harassment incidental to gear interactions, and of 20 species by Level B harassment incidental to use of active acoustic devices and vessel operation during fisheries and ecosystem research.

Description of the Specified Activity

Overview

The Federal Government has a responsibility to conserve and protect living marine resources in U.S. waters and has also entered into a number of international agreements and treaties related to the management of living marine resources in international waters outside the United States. NOAA has the primary responsibility for managing marine finfish and shellfish species and their habitats, with that responsibility delegated within NOAA to NMFS.

In order to direct and coordinate the collection of scientific information needed to make informed fishery management decisions, Congress created six regional fisheries science centers, each a distinct organizational entity and the scientific focal point within NMFS for region-based Federal fisheries-related research. This research is aimed at monitoring fish stock recruitment, abundance, survival and biological rates, geographic distribution of species and stocks, ecosystem process changes, and marine ecological research. The PIFSC is the research arm of NMFS in the Pacific Islands region of the United States. The PIFSC conducts research and provides scientific advice to manage fisheries and conserve protected species in the geographic research area described below and provides scientific information to support the Western Pacific Fishery Management Council and other domestic and international fisheries management organizations.

The PIFSC collects a wide array of information necessary to evaluate the status of exploited fishery resources and the marine environment. PIFSC scientists conduct fishery-independent research onboard NOAA-owned and operated vessels or on chartered vessels. Such research may also be conducted by cooperating scientists on non-NOAA vessels when the PIFSC helps fund the research. The PIFSC plans to administer and conduct multiple survey programs over the 5-year period, within 4 separate research areas (some survey programs are conducted across more than 1 research area; see table 1–1 in PIFSC's application). Surveys identified and described here are a representative but not necessarily exclusive list of the research that PIFSC may undertake during the period for which this authorization will be valid. The gear types used fall into several categories: towed trawl nets fished at various levels in the water column, hook-and-line gear (including longlines with multiple hooks, bottomfishing, and trolling), deployed instruments (including various traps), and other instruments. Only use of trawl nets, longlines, and deployed instruments are likely to result in interaction with marine mammals via entanglement or hooking. Many of these surveys also use active acoustic devices that may result in Level B harassment.

Dates and Duration

The specified activity may occur at any time during the 5-year period of validity of the regulations. Dates and duration of individual surveys are inherently uncertain, based on congressional funding levels for the PIFSC, weather conditions, or ship contingencies. In addition, cooperative research is designed to provide flexibility on a yearly basis in order to address issues as they arise. Some cooperative research projects last multiple years or may continue with modifications. Other projects only last 1 year and are not continued. Most cooperative research projects go through an annual competitive selection process to determine which projects should be funded based on proposals developed by many independent researchers and fishing industry participants. PIFSC survey activity occurs during most

months of the year. Trawl surveys occur primarily during May through June and September but may occur during any month, and hook-and-line surveys generally occur during fall.

Specified Geographical Region

The PIFSC conducts research in the Pacific Islands within four research areas: the Hawaiian Archipelago Research Area (HARA), the Mariana Archipelago Research Area (MARA), the American Samoa Archipelago Research Area (ASARA), and the Western and Central Pacific Research Area (WCPRA). The first three research areas are considered to extend approximately 24 nautical miles (nmi; 44.5 kilometers (km)) from the baseline of the respective archipelagos (*i.e.,* approximately the outer limit of the contiguous zone). The WCPRA is considered to include the remainder of archipelagic U.S. exclusive economic zone (EEZ) waters, the high seas between the archipelagic U.S. EEZ waters, and waters around the Pacific remote islands. Please see figures 1.2 and 2.1 through 2.4 in the PIFSC application for maps of the four research areas. Detailed descriptions of the PIFSC's research areas were provided in the notice of proposed rulemaking (86 FR 15298, March 22, 2021). Those descriptions remain accurate and sufficient, and we refer the reader to that document rather than reprinting the information here.

Detailed Description of Activities

A detailed description of the PIFSC's planned activities was provided in the notice of proposed rulemaking (86 FR 15298, March 22, 2021) and is not repeated here except for the list of surveys provided in table 1. No changes aside from the addition of one research program, as described below, have been made to the specified activities described therein.

After publication of the proposed rulemaking, PIFSC informed us of an additional research program that was not identified in the proposed rulemaking. The Marine Turtle Biology and Assessment Program (MTBAP) conducts research with the potential to cause incidental disturbance of Hawaiian monk seals only. No take of any other species of marine mammals is expected to occur incidental to MTBAP research activities. The MTBAP engages in long-term monitoring of sea turtles in order to understand population status, abundance, and trends, including permitted directed research which may result in incidental disturbance of seals present near turtles that are the target of the research activities. MTBAP conducts research activities year round in the HARA, with a peak in activities occurring typically between March and September each year when Northwestern Hawaiian Islands (NWHI) field camps are deployed. Most field work that may incidentally disturb Hawaiian monk seals occurs on shore where seals haul out, and in the nearshore waters, while operating a vessel, where seals may be swimming.

TABLE 1—SUMMARY DESCRIPTION OF PIFSC FISHERIES AND ECOSYSTEM RESEARCH ACTIVITIES IN THE PACIFIC ISLANDS REGION

Survey name	Survey description	General area of operation	Season, frequency & yearly days at sea (DAS)	Gear used	Gear details	Total number of samples (approximated)
Sampling Pelagic Stages of Insular Fish Species.	Results of sampling inform life history and stock structure studies for pelagic larval and juvenile stage specimens of insular fish. Additional habitat information is also collected. Target species are snapper, grouper, and coral reef fish species within the 0–175 m depth range.	• HARA, MARA, ASARA, WCPRA. • 3–200 nmi from shore.	• Year-round ..... • HARA: up to 20 Days at Sea (DAS). • MARA, ASARA, WCPRA: up to 30 DAS approximately once in research area every three years. • Midwater trawls are conducted at night, surface trawls are conducted day and night.	• Cobb trawl (midwater trawl) or Isaacs-Kidd 10-foot (ft) (3-meter (m)) net (midwater trawl). • Isaacs-Kidd 6-ft (1.8-m) net (surface trawl). • Dip net (surface). • Trawl mounted OES Netmind (midwater).	• Tow speed: 2.5–3.5 kt ..... • Duration: 60–240 minutes (min). • Depth: deployed at various depths during same tow to target fish at different water depths, usually to 250 m. • Tow speed: 2.5–3.5 kts. • Duration: 60 min. • Depth: Surface.	• 40 tows per survey per year. • 40 tows per survey per year.
Spawning Dynamics of Highly Migratory Species.	Early life history studies provide larval stages for population genetic studies and include the characterization of habitat for early life stages of pelagic species. Egg and larval collections are taken in surface waters using a variety of plankton gear, primarily Isaacs-Kidd 6-ft (1.8-m) surface trawl, but also sometimes including 1-m ring net and surface neuston net.	• HARA, MARA, ASARA, WCPRA. • 1–25 nmi from shore.	• Year-round ..... • HARA: up to 25 DAS. • MARA, ASARA, WCPRA: up to 25 DAS approximately once in research area every three years. • Surface trawls are conducted day and night.	• Isaacs-Kidd 6-ft (1.8-m) net (surface). • Neuston tows (surface). • 1-m ring net (surface)	• Tow speed: 2.5–3.5 kts ..... • Duration: 60 min. • Depth: Surface. • Tow Speed: 2.5–3.5 kts ..... • Duration: 30–60 min. • Depth: 0–3 m.	• 140 tows per survey per year. • 140 tows per survey per year.
Cetacean Ecology Assessment.	Survey transects conducted in conjunction with cetacean visual and acoustic surveys within the Hawai'i EEZ to develop ecosystem models for cetaceans. Sampling also includes active acoustics to determine relative biomass density of sound scattering layers; trawls to sample within the scattering layers; cetacean observations; surface and water column oceanographic measurements and water sample collection.	• HARA, MARA, ASARA, WCPRA.	• Variable timing, depending on ship availability, up to 180 DAS. • Usually conducted in non-winter months. • Midwater trawls are conducted at night, surface trawls are conducted day and night.	• Cobb trawl (midwater trawl). • Small-mesh towed net (surface trawl).	• Tow speed: 3 kts ..... • Duration: 60–240 min. • Tow Speed: 2.5–3.5 kts ..... • Duration: 30–60 min.	• 180 tows total per year. • 180 tows per research area.
Marine Debris Research and Removal.	Surface and midwater plankton tows to quantify floating microplastic in seawater.	• HARA, MARA, ASARA, WCPRA.	• Annually, or on an as-needed basis, up to 30 DAS. • Surface trawls are conducted day and night. • Unmanned aircraft surveys are conducted during the day or night.	• Neuston, or similar, plankton nets surface towed alongside ship and/or small boats.	• Tow Speed: varied ..... • Duration: <1 hour.	• Up to 250 tows per survey per year.

TABLE 1—SUMMARY DESCRIPTION OF PIFSC FISHERIES AND ECOSYSTEM RESEARCH ACTIVITIES IN THE PACIFIC ISLANDS REGION—Continued

Survey name	Survey description	General area of operation	Season, frequency & yearly days at sea (DAS)	Gear used	Gear details	Total number of samples (approximated)
Insular Fish Life History Survey and Studies.	Provide size ranges of deep-water eteline snappers, groupers, and large carangids to determine sex-specific length-at-age growth curves, longevity estimates, length and age at 50% reproductive maturity within the Bottomfish Management Unit Species (BMUS) in Hawai'i and the other Pacific Islands regions. Specimens are collected in the field and sampled at markets.	• HARA, MARA, ASARA, WCPRA. • 0.2–5 nmi from shore	• HARA: July–September, up to 15 DAS/yr. • Other areas: Year-round, up to 30 DAS for each research area once every three years. • Day and night.	• Hook-and-line	• Hand line, electric or hydraulic reel: • Each operation involves 1–3 lines with. 4–6 hooks per line; soaked 1–30 min. • Squid bait on circle hooks (typically 10/0 to 12/0).	• HARA: 350 operations per year. • Other areas: 240 operations per year for each research area.
Pelagic Troll and Handline Sampling.	Surveys would be conducted to collect life history and molecular samples from pelagic species. Other target species would be tagged-and-released. Different tags would used depending upon the species and study, but could include: passive, archival, ultrasonic, and satellite tags.	• HARA, MARA, ASARA,. • 0 to 24 nmi from shore (excluding any special resource areas).	• Variable, up to 14 DAS Day and night.	• Pelagic troll and handline (hook and line) fishing.	• Troll fishing with up to 4 troll lines each with 1–2 baited hooks or 1–2 hook trolling lures at 4–10 kts. • Pelagic handline (hook-and-line) fishing at 10–100 m midwater depths, with hand, electric, or hydraulic reels. Up to 4 lines. Each line is baited with 4 hooks.	• A total of up to 2 operations of any of these gear types per DAS, totaling 28 operations (all types combined) for the survey.
Insular fish Abundance Estimation Comparison Surveys.	Comparison of fishery-independent methods to survey bottomfish assemblages in the Main Hawaiian Islands: coordinated research between PIFSC and various partners Day and night surveys are used to develop fishery-independent methods to assess stocks of economically important insular fish.	• HARA, MARA, ASARA, WCPRA.	• Variable, up to 30 DAS per research area per year. • HARA surveyed annually, ASARA, WCPRA surveyed every 3 years. • Sampling occurs day and night	• Hook-and-line	• Hand, electric, hydraulic reels • Each vessel fishes 2 lines. Each line is baited with 4–6 hooks. • 1–30 minutes per fishing operation.	• HARA: 7,680 operations per year. • MARA: 1.920 every 3rd year (average) 640 operations per year). • ASARA: 1,920 every 3rd year (average e 640 per year). • WCPRA: 1,920 every 3rd year (average 640 per year).
Kona Integrated Ecosystem Assessment Cruise.	Survey transects conducted off the Kona coast and Kohala Shelf area to develop ecosystem models for coral reefs, socioeconomic indicators, circulation patterns, larval fish transport and settlement. Sampling includes active acoustics to determine relative biomass density of sound scattering layers; trawls to sample within the scattering layers; cetacean observations; surface and water column oceanographic measurements and water sample collection.	• HARA; 2–10 nmi from shore.	• Variable timing, depending on ship availability, up to 10 DAS. • Day and night.	• Cobb trawl (midwater trawl). • Hook-and-line	• Tow speed: 3 kts ..... • Duration: 60–240 min. • Electric or hydraulic reel: Each operation involves 1–3 lines, with squid lures, soaked 10–60 min at depths between 200m to 600m.	• 15–20 tows/yr. • No more than 50 hours of effort. • Approximately 10 mesopelagic squid caught per yr.

Sampling of Juvenile-stage Bottomfish via Settlement Traps.	Sampling activity to capture juvenile recruits of eteline snappers and grouper that have recently transitioned from the pelagic to demersal habitat. Target species include Deep-7 bottomfish and the settlement habitats these stages are associated with.	• HARA ..... • 0.2–5 nmi from shore.	• July–September ..... • Up to 25 DAS Day and night.	• Trap (settlement)	• Cylindrical traps are clipped throughout the water column onto a vertical line anchored on bottom at up to 400 m, supported by a surface float.	• 10 traps per line set; up to 4 line sets soaked per day, from overnight up to 3 days. • Up to 100 lines of traps set per yr. • Catch of 2500 juvenile stage bottomfish per year.
Mariana Resource Survey ..	Sampling activity to quantify baseline bottomfish and reef fish resources in the Mariana Archipelago Research Area. Various artificial habitat designs, Cobb trawl and IK trawls will be developed, enclosed in mesh used to retain captures, and evaluated collect pelagic-stage specimens of reef fish and bottomfish species. Traps will be primarily set in mesophotic habitats (50–200 m depths) and in the quality of each habitat for recent recruits. deep-slope bottomfish habitats (200–500m depths).	• MARA ..... • 0–25 nmi from shore.	• May–August Up to 102 DAS (once every three years). • Midwater trawls are conducted at night, surface trawls are conducted day and night. • In-water activities are conducted during the day. All others are day and night.	• Large-mesh Cobb midwater trawl. • Isaacs-Kidd midwater trawl.	• Tow speed: 3 kts ..... • Duration: 60–240 min trawls; 2 tows per night. • Depth(s): deployed at various depths during same tow to target fish at different water depths, usually between 100 m and 200m.	• 15–20 tows per survey per year
				• Small-mesh surface trawl nets (Isaacs-Kidd, neuston, ring, bongo nets).	• Tow speed: 3 kts ..... • Duration: up to 60 min. • Depth: 0–200 m.	• 15–20 tows (any combination of the nets described).
				• Traps (Kona crab, enclosure).	• Up to ten Kona crab traps can be tied together with a buoy on the end net for retrieval. They are left for approximately 20 min. Two strings of six enclosure traps each would be deployed at night on sand, rubble and pavement (*i.e.,* not coral) substrate, and retrieved the next morning. • Up to 20 traps per string, separated by 20 fathoms of ground line; two depths 10–35 fathoms. • Up to 2 strings per DAS.	• 25 gear sets per cruise. • Up to 400 strings set per year.
				• Hook-and-line	• Electric or hydraulic reel: each operation involves 1–3 lines, with squid lures, soaked 10–60 min at depths between 200 m to 600 m.	• 1,000 sets per survey.
Pelagic Longline, Troll, and Handline Gear Trials.	Investigate effectiveness of various types of hooks, hook guards, gear configurations, or other modified fishing practices for reducing the bycatch of non-target species and retaining or increasing target catch.	• HARA ..... • Longline fishing would occur outside of: (1) all longline exclusions zones in the Hawai'i EEZ; (2) the Insular False Killer Whale range, and (3) all special resource areas. • Longline fishing would occur up to approximately 500 nmi from the shores of the Hawai'i Archipelago. • Trolling and handline occurs 25 to 500 nmi from shore (excluding any special resource areas).	• 21 DAS ..... • Day and night.	• Pelagic longline ..... • Trolling, and handline (hook-and-line).	• Soak time: 600–1800 min ..... • Troll fishing with up to 4 troll lines each with 1–2 baited hooks or 1–2 hook troll lures at 4–10 kts. • Pelagic handline (hook-and-line) fishing at 10–100 m midwater depths, with hand, electric, or hydraulic reels. Up to 4 lines. Each line is baited with 4 hooks. • Up to 4 hrs per troll or handline operation.	• Up to 21 longline operations per year. • Up to 21 troll or handline (combined) operations per year.

TABLE 1—SUMMARY DESCRIPTION OF PIFSC FISHERIES AND ECOSYSTEM RESEARCH ACTIVITIES IN THE PACIFIC ISLANDS REGION—Continued

Survey name	Survey description	General area of operation	Season, frequency & yearly days at sea (DAS)	Gear used	Gear details	Total number of samples (approximated)
Pelagic Oceanographic Cruise.	Investigate physical (*e.g.,* fronts) and biological features that define the habitats for important commercial and protected species of the North Pacific Ocean. Sampling also includes active acoustics to determine relative biomass density of sound scattering layers; trawls to sample within the scattering layers; surface and water column oceanographic measurements and water sample collection.	• WCPRA ..... • 25–1000 nmi from shore in any direction.	• Annual (season variable) Up to 30 DAS. • Midwater trawls are conducted at night, surface trawls are conducted day and night. • All other activities are conducted day and night.	• Large-mesh Cobb midwater trawl. • Plankton drop net (stationary surface sampling). • Small-mesh surface and midwater trawl nets (Isaacs-Kidd, neuston, ring, bongo nets).	• Tow speed: 3 kts ..... • Duration: 60–240 min. • 1 m diameter plankton drop net would be deployed down to 100 m. • Duration: up to 60 min. • Depth: 0–200 m.	• 20 tows per year, alternating with Kona IEA cruise 4 liters of micronekton per tow. • 20 drops per year (collections would be less than one liter of plankton). • 15–20 tows (any combination of the nets described) <1 liter of organisms per tow.
Lagoon Ecosystem Characterization.	Measure the abundance and distribution of reef fish (including juvenile bumphead parrotfish).	• WCPRA	• Up to 14 DAS ..... • Conducted during the day.	• Divers with hand net or speargun. • Hook-and-line	• SCUBA, snorkel, 12-inch diameter small mesh hand net. • Standard rod and reel using lures or fish bait from shoreline or small boat.	• 10 dives per survey. • 10 fin clips collected for genetic analyses. • 1–30 minute casts. • 60 casts per survey.

Comments and Responses

We published a notice of proposed rulemaking in the **Federal Register** on March 22, 2021 (86 FR 15298), and requested comments and information from the public. During the 30-day comment period, we did not receive any public comments.

Changes From Proposed Rule to Final Rule

As discussed above, we have included evaluation of a PIFSC research program (MTBAP) not previously identified in the proposed rulemaking. As detailed in the Estimated Take section, later in this document, anticipated impacts from these research activities are not different in type from what has already been analyzed under the proposed rule, and the expected take of marine mammals is not increased as a result of our evaluation of these activities. There are no other changes from the proposed rule to this final rule.

Description of Marine Mammals in the Area of the Specified Activity

We have reviewed PIFSC's species descriptions—which summarize available information regarding status and trends, distribution and habitat preferences, behavior and life history, and auditory capabilities of the potentially affected species—for accuracy and completeness and refer the reader to sections 3 and 4 of PIFSC's application, instead of reprinting the information here (note that PIFSC provides additional information regarding marine mammal observations around the Main Hawaiian Islands (MHI) in table 3.3 of their application, including information about group size and seasonality). Additional information regarding population trends and threats may be found in NMFS's Stock Assessment Reports (SAR; *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*) and more general information about these species (*e.g.,* physical and behavioral descriptions) may be found on NMFS' website (*https://www.fisheries.noaa.gov/find-species*).

Table 2 lists all species with expected potential for occurrence in the specified geographical regions where PIFSC plans to conduct the specified activity and summarizes information related to the population or stock, including regulatory status under the MMPA and Endangered Species Act (ESA) and potential biological removal (PBR), where known. For taxonomy, we follow the Society for Marine Mammalogy Committee on Taxonomy. PBR, defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population, is discussed in greater detail later in this document (see the Negligible Impact Analysis and Determination section).

Stocks are not designated for most species in areas of the specified geographical regions outside of the Hawaiian EEZ. Therefore, while all species with expected potential for occurrence in the specified geographical regions are listed in table 2, the listed stocks are in most cases specific to the Hawaiian EEZ. The only exceptions are NMFS-designated stocks for the humpback whale, rough-toothed dolphin, spinner dolphin, and false killer whale in American Samoa (animals belonging to these stocks would occur in the ASARA), and a false killer whale stock designated for Palmyra Atoll (animals belonging to this stock would occur in the WCPRA). With the exception of the humpback whale and the aforementioned Palmyra Atoll stock of false killer whale, animals of any species occurring in the MARA or areas of the WCPRA outside of the Hawaiian EEZ and American Samoa EEZ would not be part of any NMFS-designated stock. Aside from the four species listed above, animals of any species occurring in the American Samoa EEZ would not be part of any NMFS-designated stock. As a reminder, the HARA, MARA, and ASARA are considered to include waters of the contiguous zone around these archipelagoes (*i.e.,* 0–24 nmi from land), while the WCPRA is considered to include all remaining EEZ waters around those archipelagoes as well as the high seas and waters around U.S. possessions of the Pacific Remote Islands Area.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. Abundance estimates and related information, PBR values, and annual M/SI values given in table 2 are specific to the stocks for which they are listed. This information is generally not available for these species occurring in areas outside the ranges of NMFS-designated stocks. NMFS-designated stocks in the Hawai'i region include animals found both within the Hawaiian Islands EEZ and in adjacent high seas waters; however, because data on abundance, distribution, and human-caused impacts are largely lacking for high seas waters, the status of these stocks are generally evaluated based on data from the U.S. EEZ waters of the Hawaiian Islands (including the Main Hawaiian Islands and Northwestern Hawaiian Islands). For certain species, existing data support the existence of demographically distinct resident populations associated with different regions within the Hawaiian Islands, and separate stocks are designated accordingly. NMFS-designated stocks for American Samoa include animals occurring within EEZ waters around American Samoa. All managed stocks in the specified geographical regions are assessed in either NMFS's U.S. Pacific SARs or U.S. Alaska SARs. All values presented in table 2 are the most recent available at the time of publication, including from the draft 2023 SARs (available online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/draft-marine-mammal-stock-assessment-reports*).

A detailed description of the species likely to be affected by the PIFSC's activities, including brief introductions to the species and relevant stocks as well as available information regarding population trends and threats, were provided in the PIFSC's LOA application and summarized in the notice of proposed rulemaking for this action (86 FR 15298, March 22, 2021); since that time, we are not aware of any changes (except changes to the humpback whale stock designation as described below) in the status of these species or stocks; therefore, detailed descriptions are not provided here.

TABLE 2—MARINE MAMMALS POTENTIALLY PRESENT IN THE VICINITY OF PIFSC RESEARCH ACTIVITIES

Common name	Scientific name	Stock [1]	Occurrence [2]				ESA/ MMPA status; strategic (Y/N) [3]	Stock abundance (CV, N_{min}, most recent abundance survey) [4]	PBR	Annual M/SI [5]
			HARA	MARA	ASARA	WCPRA				
Order Cetartiodactyla—Cetacea—Superfamily Mysticeti (baleen whales)										
Family Balaenopteridae (rorquals):										
Humpback whale	*Megaptera novaeangliae kuzira.*	American Samoa	X	X	X	X	-; N	unk (n/a; 150; 2008)	0.4	0
		Hawaii					-; N	11,278 (0.56; 7,265; 2020).	127	27.1
		Western North Pacific.					E/D; Y	1,084 (0.09; 1,007; 2006).	3.4	5.8
Minke whale	*Balaenoptera acutorostrata scammoni.*	Hawai'i	X	X	X	X	-; N	438 (1.05; 212; 2017).	2.1	0
Bryde's whale	*B. edeni brydei*	Hawai'i	X	X	X	X	-; N	791 (0.29; 623; 2020).	6.2	0
Sei whale	*B. borealis borealis*	Hawai'i	X	X	.....	X	E/D; Y	391 (0.9; 204; 2010).	0.4	0.2
Fin whale	*B. physalus physalus*	Hawai'i	X	X	.....	X	E/D; Y	203 (0.99; 101; 2017).	0.2	0
Blue whale	*B. musculus musculus*	CNP	X	X	.....	X	E/D; Y	133 (1.09; 63; 2010)	0.1	0
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)										
Family Physeteridae:										
Sperm whale	*Physeter macrocephalus.*	Hawai'i	X	X	X	X	E/D; Y	5,707 (0.23; 4,486; 2017).	18	0
Family Kogiidae:										
Pygmy sperm whale	*Kogia breviceps*	Hawa'i	X	X	.....	X	-; N	42,083 (0.64, 25,695, 2017).	257	0
Dwarf sperm whale	*K. sima*	Hawai'i [6]	X	X	X	X	-; N	unk	undet	0
Family Ziphiidae (beaked whales):										
Cuvier's beaked whale	*Ziphius cavirostris*	Hawai'i Pelagic	X	X	X	X	-; N	4,431 (0.41; 3,180; 2017).	32	0
Longman's beaked whale	*Indopacetus pacificus*	Hawai'i	X	.....	.....	X	-; N	2,550 (0.67; 1,527; 2017).	15	0
Blainville's beaked whale	*Mesoplodon densirostris.*	Hawai'i	X	X	.....	X	-; N	1,132 (0.99; 564; 2017).	5.6	0
Deraniyagala's beaked whale	*M. hotaula*	n/a	.....	.....	.....	X	-; N	unk	undet	unk
Family Delphinidae:										
Rough-toothed dolphin	*Steno bredanensis*	Hawai'i	X	X	X	X	-; N	83,915 (0.49; 56,782; 2017).	511	3.2
		American Samoa [6]					-; N	unk	undet	unk
Common bottlenose dolphin	*Tursiops truncatus truncatus.*	Hawai'i Pelagic	X	X	X	X	-; N	24,669 (0.57; 15,783; 2020).	158	0
		Kauai and Ni'ihau					-; N	112 (0.24; 92; 2018)	0.9	unk
		Oahu					-; N	112 (0.17; 97; 2017)	1.0	unk
		Maui Nui					-; N	64 (0.15; 56; 2018)	0.6	unk
		Hawai'i Island					-; N	136 (0.43; 96; 2018)	1.0	≥0.2
Pantropical spotted dolphin	*Stenella attenuata attenuata.*	Hawai'i Pelagic	X	X	X	X	-; N	67,313 (0.27; 53,839; 2020).	538	0
		Oahu					-; N	unk	undet	unk
		Maui Nui					-; N	unk	undet	unk
		Hawai'i Island					-; N	unk	undet	≥0.2
Spinner dolphin	*S. longirostris longirostris.*	Hawai'i Pelagic [6]	X	X	X	X	-; N	unk	undet	0
		Kauai and Ni'ihau [6]					-; N	601 (0.2; unk; 2005)	undet	unk
		Oahu/4—Island Region [6].					-; N	355 (0.09; unk; 2007).	undet	≥0.4
		Hawai'i Island					-; N	665 (0.09; 617; 2012).	6.2	≥1.0
		Kure and Midway Atoll [6].					-; N	260 (n/a; 139; 2010)	undet	unk
		Pearl and Hermes Reef [6].					-; N	unk	undet	unk
		American Samoa [6]					-; N	unk	undet	unk
Striped dolphin	*S. coeruleoalba*	Hawai'i Pelagic	X	X	.....	X	-; N	64,343 (0.28; 51,055; 2020).	511	0
Fraser's dolphin	*Lagenodelphis hosei*	Hawai'i	X	X	.....	X	-; N	40,960 (0.70; 24,068; 2017).	241	0
Risso's dolphin	*Grampus griseus*	Hawai'i	X	X	.....	X	-; N	6,979 (0.29; 5,283; 2020).	53	0
Melon-headed whale	*Peponocephala electra*	Hawaiian Islands	X	X	.....	X	-; N	40,647 (0.74; 23,301; 2017).	233	0
		Kohala Resident					-; N	447 (0.12; unk; 2017).	undet	0
Pygmy killer whale	*Feresa attenuata*	Hawai'i	X	X	.....	X	-; N	10,328 (0.75; 5,885; 2017).	59	0

TABLE 2—MARINE MAMMALS POTENTIALLY PRESENT IN THE VICINITY OF PIFSC RESEARCH ACTIVITIES—Continued

Common name	Scientific name	Stock [1]	Occurrence [2]				ESA/ MMPA status; strategic (Y/N) [3]	Stock abundance (CV, N_{min}, most recent abundance survey) [4]	PBR	Annual M/SI [5]
			HARA	MARA	ASARA	WCPRA				
False killer whale	*Pseudorca crassidens*	Northwestern Hawaiian Islands.	X	X	X	X	-; N	477 (1.71; 178; 2017).	1.43	0.16
		Hawai'i Pelagic					-; N	5,528 (0.35; 4,152; 2017).	33	47
		Main Hawaiian Islands Insular.					E/D; Y	138 (0.08; 129; 2015).	0.26	0.03
		American Samoa					-; N	unk	undet	unk
		Palmyra Atoll					-; N	1,329 (0.65; 806; 2005).	6.4	0.3
Killer whale	*Orcinus orca*	Hawai'i	X	X	X	X	-; N	161 (1.06; 78; 2017)	0.8	0
Short-finned pilot whale	*Globicephala macrorhynchus*.	Hawai'i	X	X	X	X	-; N	19,242 (0.23; 15,894; 2020).	159	0.2
Order Carnivora—Superfamily Pinnipedia										
Family Phocidae (earless seals):										
Hawaiian monk seal	*Neomonachus schauinslandi*.	Hawai'i	X	.....	.....	X	E/D; Y	1,564 (0.05; 1,444; 2021).	5.1	5.4

[1] All species with potential for take by PIFSC are presented in table 2. All known stocks are presented here but marine mammals in the MARA, ASARA, and WCPRA are generally not assigned to designated stocks.

[2] HARA: Hawaiian Archipelago Research Area; MARA: Mariana Archipelago Research Area; ASARA: American Samoa Archipelago Research Area; WCPRA: Western and Central Pacific Research Area.

[3] Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

[4] CV is coefficient of variation; N_{min} is the minimum estimate of stock abundance.

[5] These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.,* commercial fisheries, subsistence hunting, ship strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value.

[6] Abundance estimates for these stocks are not considered current. PBR is therefore considered undetermined for these stocks, as there is no current minimum abundance estimate for use in calculation. We nevertheless present the most recent abundance estimates, as these represent the best available information for use in this document.

Humpback Whale

On September 8, 2016, NMFS divided the once single humpback whale species into 14 distinct population segments (DPS) under the ESA, removed the species-level listing as endangered, and, in its place, listed 4 DPSs as endangered and 1 DPS as threatened (81 FR 62259, September 8, 2016). The remaining nine DPSs were not listed. There are four DPSs in the North Pacific, including Western North Pacific, which is listed as endangered, and Hawaii, which is not listed.

The 2022 Alaska and Pacific SARs described a revised stock structure for humpback whales which modifies the previous stocks designated under the MMPA to align more closely with the ESA-designated DPSs (Caretta *et al.,* 2023; Young *et al.,* 2023). Specifically, the three previous North Pacific humpback whale stocks (central and western North Pacific stocks and a CA/OR/WA stock) were replaced by five stocks, largely corresponding with the ESA-designated DPSs. These include Western North Pacific and Hawaii stocks, which correspond with the DPSs of the same names, and which (along with the American Samoa stock) are the only stocks potentially affected by PIFSC activities.

The Hawai'i stock consists of one demographically independent population (DIP) (Hawaii—southeast Alaska/northern British Columbia DIP) and one unit (Hawaii—north Pacific unit), which may or may not be composed of multiple DIPs (Wade *et al.,* 2021). The DIP and unit are managed as a single stock at this time, due to the lack of data available to separately assess them and lack of compelling conservation benefit to managing them separately (NMFS, 2023; NMFS, 2019; NMFS, 2022b). The DIP is delineated based on two strong lines of evidence: genetics and movement data (Wade *et al.,* 2021). Whales in the Hawaii—southeast Alaska/northern British Columbia DIP winter off Hawaii and largely summer in southeast Alaska and northern British Columbia (Wade *et al.,* 2021). The group of whales that migrate from Russia, western Alaska (Bering Sea and Aleutian Islands), and central Alaska (Gulf of Alaska excluding southeast Alaska) to Hawaii have been delineated as the Hawaii—North Pacific unit (Wade *et al.,* 2021). There are a small number of whales that migrate between Hawaii and southern British Columbia/Washington, but current data and analyses do not provide a clear understanding of which unit these whales belong to (Wade *et al.,* 2021; Caretta *et al.,* 2023; Young *et al.,* 2023).

The Western North Pacific (WNP) stock consists of two units, the Philippines/Okinawa—North Pacific unit and the Marianas/Ogasawara—North Pacific unit. The units are managed as a single stock at this time, due to a lack of data available to separately assess them (NMFS 2023a, NMFS 2019, NMFS 2022d). Recognition of these units is based on movements and genetic data (Oleson *et al.,* 2022). Whales in the Philippines/Okinawa—North Pacific unit winter near the Philippines and in the Ryukyu Archipelago and migrate to summer feeding areas primarily off the Russian mainland (Oleson *et al.,* 2022). Whales that winter off the Mariana Archipelago, Ogasawara, and other areas not yet identified and then migrate to summer feeding areas off the Commander Islands, and to the Bering Sea and Aleutian Islands comprise the Marianas/Ogasawara—North Pacific unit.

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure

to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Not all marine mammal species have equal hearing capabilities (*e.g.,* Richardson *et al.,* 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007, 2019) recommended that marine mammals be divided into hearing groups based on directly measured (behavioral or auditory evoked potential techniques) or estimated hearing ranges (behavioral response data, anatomical modeling, *etc.*). Generalized hearing ranges were chosen based on the ~65 decibel (dB) threshold from composite audiograms, previous analyses in NMFS (2018), and/or data from Southall *et al.* (2007) and Southall *et al.* (2019). We note that the names of two hearing groups and the generalized hearing ranges of all marine mammal hearing groups have been recently updated (NMFS, 2024) as reflected below in table 3.

TABLE 3—MARINE MAMMAL HEARING GROUPS

[NMFS, 2024]

Hearing group	Generalized hearing range *
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 36 kHz.
High-frequency (HF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz.
Very High-frequency (VHF) cetaceans (true porpoises, *Kogia,* river dolphins, Cephalorhynchid, *Lagenorhynchus cruciger* & *L. australis*).	200 Hz to 165 kHz.
Phocid pinnipeds (PW) (underwater) (true seals)	40 Hz to 90 kHz.
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 68 kHz.

** Represents the generalized hearing range for the entire group as a composite (*i.e.,* all species within the group), where individual species' hearing ranges may not be as broad. Generalized hearing range chosen based on ~65 dB threshold from composite audiogram, previous analysis in NMFS 2018, and/or data from Southall et al. 2007; Southall et al. 2019. Additionally, animals are able to detect very loud sounds above and below that ''generalized'' hearing range.

For more detail concerning these groups and associated frequency ranges, please see NMFS (2024) for a review of available information.

Potential Effects of the Specified Activity on Marine Mammals and Their Habitat

Detailed descriptions of the potential effects of the various elements of the PIFSC's specified activity on marine mammals and their habitat were provided in the proposed rule (86 FR 15298, March 22, 2021) as well as the 2023 Programmatic Environmental Assessment (PEA). Additionally, detailed descriptions of the potential effects of similar specified activities have also been provided in other **Federal Register** notices of proposed rulemaking (*e.g.,* 81 FR 38516, June 13, 2016; 83 FR 37638; August 1, 2018; 84 FR 6576, February 27, 2019), and section 7 of the PIFSC's LOA application provides a discussion of the potential effects of their specified activity, which we have reviewed for accuracy and completeness. No significant new information is available, and these discussions provide the necessary, adequate and relevant information regarding the potential effects of the PIFSC's specified activities on marine mammals and their habitat. Therefore, we refer the reader to these documents rather than repeating the information here. The referenced information includes a summary and discussion of the ways that components of the specified activity (*e.g.,* gear deployment, use of active acoustic sources, visual disturbance) may impact marine mammals and their habitat.

As stated previously, the use of certain research gears, including trawl nets, gillnets, longline gear, and fyke nets, has the potential to result in interaction with marine mammals. In the event of a marine mammal interaction with research gear, injury, serious injury, or mortality may result from entanglement or hooking. Exposure to sound through the use of active acoustic systems for research purposes may result in Level B harassment. However, as detailed in the previously referenced discussions, Level A harassment in the form of permanent threshold shift (PTS) is extremely unlikely to occur, and we consider such effects discountable. Finally, it is expected that hauled out pinnipeds may be disturbed by approaching researchers such that Level B harassment could occur. Ship strike is not a reasonably anticipated outcome of PIFSC research activities, given the small amount of distance covered by research vessels, use of observers, and their relatively slow speed in comparison to commercial shipping traffic (*i.e.,* the primary cause of marine mammal vessel strikes).

With specific reference to Level B harassment that may occur as a result of acoustic exposure, we note that the analytical methods described in the incidental take regulations for other NMFS Science Centers are retained here. However, the state of science with regard to our understanding of the likely potential effects of the use of systems like those used by PIFSC has advanced in recent years, as have readily available approaches to estimating the acoustic footprints of such sources, with the result that we view this analysis as highly conservative. Although more recent literature provides documentation of marine mammal responses to the use of these and similar acoustic systems (*e.g.,* Cholewiak *et al.,* 2017; Quick *et al.,* 2017; Varghese *et al.,* 2020), the described responses do not generally comport with the degree of severity that should be associated with Level B harassment, as defined by the MMPA. We retain the analytical approach described in the incidental take regulations for other NMFS Science Centers for consistency with existing analyses and for purposes of efficiency here, and consider this acceptable because the approach provides a conservative estimate of potential incidents of Level B harassment (see Estimated Take section of this final rule). In summary, while we authorize the amount of take by Level B harassment indicated in the Estimated Take section, and consider these potential takings at face value in our negligible impact analysis, it is uncertain whether use of these acoustic systems are likely to cause take at all, much less at the estimated levels.

The Estimated Take section later in this document includes a quantitative analysis of the number of individuals that are expected to be taken by this activity. The Negligible Impact Analysis and Determination section considers the potential effects of the specified activity, the Estimated Take section, and the Mitigation section, to draw conclusions

regarding the likely impacts of these activities on the reproductive success or survivorship of individuals and how those impacts on individuals are likely to impact marine mammal species or stocks.

Estimated Take

This section provides an estimate of the number of incidental takes to be authorized through an LOA, which will inform both NMFS' determination of whether the number of takes are ''small'' and the negligible impact determination.

Except with respect to certain activities not pertinent here, the MMPA defines ''harassment'' as: any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Take of marine mammals incidental to PIFSC research activities could occur as a result of (1) injury or mortality due to gear interaction (Level A harassment, serious injury, or mortality); (2) behavioral disturbance resulting from the use of active acoustic sources (Level B harassment only); or (3) behavioral disturbance of pinnipeds resulting from incidental approach of researchers and research vessels (Level B harassment only). Below, we describe how the potential take is estimated.

Estimated Take Due to Gear Interaction

The use of historical interactions as a basis to estimate future take of marine mammals in fisheries research gear has been utilized in the LOA applications and rules of other NMFS Fisheries Science Centers (*e.g.,* Southwest (SWFSC), Northwest (NWFSC)). However, because PIFSC has no history of marine mammal take in any of the gear used during its fisheries and ecosystem research, additional factors must be considered. Instead, NMFS used information from commercial fisheries, other NMFS Fisheries Science Centers operations, and published take as described below.

NMFS believes it is appropriate to include estimates for future incidental takes of a number of species that have not been taken by PIFSC historically, but inhabit the same areas and show similar types of behaviors and vulnerabilities to gear used by other NMFS Fisheries Science Centers and used in commercial fisheries (based on the 2024 List of Fisheries (LOF), see *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-list-fisheries*). A number of factors were taken into account to determine whether a species may have a similar vulnerability to certain types of gear as species taken in commercial gear and research gear elsewhere (*e.g.,* distribution, density, abundance, behavior, feeding ecology, travel in groups, and common association with other species historically taken in commercial gear or other Fisheries Science Centers). While such take could potentially occur, NMFS believes that any occurrences would likely be rare given that no such take in PIFSC research has occurred (despite many years of the same or similar surveys occurring). Moreover, marine mammal behavioral and ecological characteristics reduce the risk of incidental take from research gear, and the required mitigation measures reduce the risk of incidental take.

As background to the process of determining which species not historically taken may have sufficient vulnerability to capture in PIFSC gear to justify inclusion in these regulations, we note that the PIFSC is NMFS's research arm in the central and western Pacific Ocean and may be considered as a leading source of expert knowledge regarding marine mammals (*e.g.,* behavior, abundance, density) in the areas where they operate. The species for which the take request was formulated were selected by the PIFSC, and we have concurred with these decisions.

While PIFSC has not historically taken marine mammal species in its longline gear, it is well documented that some species potentially encountered during PIFSC surveys are taken in commercial longline fisheries. In order to evaluate the potential vulnerability of species to trawl and longline fishing gear and entanglement from instrument deployment and traps, we first consulted the LOF. The LOF classifies U.S. commercial fisheries into one of three categories according to the level of incidental marine mammal M/SI that occurs on an annual basis over the most recent 5-year period (generally) for which data has been analyzed: Category I, frequent incidental M/SI; Category II, occasional incidental M/SI; and Category III, remote likelihood of or no known incidental M/SI. We provide summary information, as presented in the 2024 LOF (89 FR 12257, February 16, 2024), in table 4. In order to simplify information presented, and to encompass information related to other similar species from different locations, we group marine mammals by genus (where there is more than one member of the genus found in U.S. waters). Where there are documented incidents of M/SI incidental to relevant commercial fisheries, we note whether we believe those incidents provide sufficient basis upon which to infer vulnerability to capture in PIFSC research gear. For a listing of all Category I, II, and III fisheries using relevant gears, associated estimates of fishery participants, and specific locations and fisheries associated with the historical fisheries takes indicated in table 4 below, please see the 2024 LOF. For specific numbers of marine mammal takes associated with these fisheries, please see the relevant SARs. More information is available online at *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-list-fisheries* and *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments.*

TABLE 4—U.S. COMMERCIAL FISHERIES INTERACTIONS FOR TRAWL AND LONGLINE GEAR FOR RELEVANT SPECIES

Species [1]	Trawl [2]	Vulnerability inferred? [3]	Longline [2]	Vulnerability inferred [3]
Bottlenose dolphin	N	Y	Y	Y
False killer whale	N	N	Y	Y
Humpback whale	N	N	Y	Y
Kogia spp	N	N	Y	Y
Pygmy killer whale	N	N	Y	Y
Risso's dolphin	N	N	Y	Y
Rough-toothed dolphin	N	Y	Y	Y
Short-finned pilot whale	N	N	Y	Y

TABLE 4—U.S. COMMERCIAL FISHERIES INTERACTIONS FOR TRAWL AND LONGLINE GEAR FOR RELEVANT SPECIES—Continued

Species [1]	Trawl [2]	Vulnerability inferred? [3]	Longline [2]	Vulnerability inferred [3]
Sperm whale	N	N	Y	Y
Striped dolphin	N	Y	Y	Y
Cuvier's beaked whale	N	N	Y	Y
Blainville's beaked whale	N	N	Y	Y
Pantropical spotted dolphin	N	Y	N	Y
Spinner dolphin	N	Y	N	Y

[1] Please refer to table 2 for taxonomic reference.
[2] Indicates whether any member of the species has documented incidental M/SI in a U.S. fishery using that gear in the most recent 5-year timespan for which data is available.
[3] Indicates whether NMFS has inferred that a species not historically taken by PIFSC has the potential to be taken in the future based on records of marine mammals taken by U.S. commercial fisheries. Y = yes, N = no.

Information related to incidental M/SI in relevant commercial fisheries is not, however, the sole determinant of appropriateness for authorizing take incidental to PIFSC survey operations. Numerous factors (*e.g.,* species-specific knowledge regarding animal behavior, overall abundance in the geographic region, density relative to PIFSC survey effort, feeding ecology, propensity to travel in groups commonly associated with other species historically taken) were considered by the PIFSC to determine whether a species not previously taken by PIFSC may be taken during future research activities. In some cases, NMFS have determined that species without documented M/SI may nevertheless be vulnerable to capture in PIFSC research gear. Those species with no records of historical interaction with PIFSC research gear and no documented M/SI in relevant commercial fisheries, and for which the PIFSC has not requested the authorization of incidental take, are not considered further in this section. The PIFSC believes generally that any sex or age class of those species for which take authorization is requested could be taken.

To estimate the potential number of takes by M/SI from PIFSC research gear, we first determine which species may have vulnerability to capture by gear type. Of those species, we then determine whether any may have similar propensity to be taken by a given gear as a historically-taken species in U.S. commercial fisheries (inferred vulnerability). For these species, we assume it is possible that take could occur while at the same time contending that, absent significant range shifts or changes in habitat usage, capture of a species not historically taken by PIFSC research activities would likely be a very rare event. Therefore, we assume that take by PIFSC would be a rare event such that authorization of a single take over the 5-year period, for each region where the gear is used and the species is present, is likely sufficient given the low risk of marine mammals interacting with PIFSC gear.

Longline—While longline research would only be conducted outside of the longline exclusion areas (see *https://www.fisheries.noaa.gov/national/marine-mammal-protection/false-killer-whale-take-reduction*), several species of small cetaceans were deemed to have a similar vulnerability to longline gear as some historically-taken species by other NMFS Fisheries Science Centers or by commercial fisheries using factors outlined above. The commercial fisheries, HI deep-set longline (Category I) and the HI shallow-set longline and American Samoa longline (both Category II) fisheries, report taking marine mammals. The longline fisheries the LOF identifies having taken marine mammals on the High Seas are the Western Pacific Pelagic (HI Deep-set component, Category I) and Western Pacific Pelagic (HI Shallow-set component, Category II).

PIFSC assumes any take of marine mammals in longline fisheries research activities will be a rare occurrence. As stated above, NMFS expects that take of marine mammals by M/SI by PIFSC would be a rare event such that no more than a single take of each species/stock by M/SI over the 5-year period, is reasonably likely to occur. Therefore, PIFSC requested, and NMFS is authorizing, one take in longline gear over the 5-year authorization period throughout the PIFSC research area for each of the following species: bottlenose dolphin (Hawai'i pelagic stock), Blainville's beaked whale (Hawai'i pelagic stock), Cuvier's beaked whale (Hawai'i pelagic stock), *Kogia* spp. (Hawai'i stocks), false killer whale (Hawai'i pelagic stock), Pantropical spotted dolphin (all stocks), pygmy killer whale (Hawai'i stock), rough toothed dolphin (Hawai'i stock), Risso's dolphin (Hawai'i stock), short-finned pilot whale (Hawai'i stock), and striped dolphin (Hawai'i stock) (table 5). While the LOF includes commercial fishery takes of false killer whales and rough-toothed dolphins from the respective American Samoa stocks, PIFSC has not requested, and NMFS has not authorized, take by M/SI of these species/stocks because PIFSC does not anticipate conducting longline research anywhere within the range of these species/stocks throughout the time period addressed by this application (*e.g.,* longline surveys in the WCPRA would occur within 500 nmi of the HARA, which is at least 1600 nmi from the ASARA and outside of the range of the American Samoa stocks of false killer whales and rough-toothed dolphins). Additionally, the LOF includes commercial fishery takes of the MHI insular stock of false killer whales, but PIFSC will not be conducting longline research within the stock's range; therefore, the PIFSC has not requested, and NMFS has not authorized, M/SI takes of this stock. Spinner dolphins have not been reported taken in Hawai'i based longline fisheries in the LOF. The PIFSC therefore has not requested, and NMFS has not authorized, any take of this species in analogous fisheries research gear.

While PIFSC has not historically taken large whales in its longline gear, these species are taken in commercial longline fisheries. There are two large whale species that have been taken by commercial longline fisheries and for which PIFSC has requested a single take each over the 5-year authorization period in longline gear: the humpback whale and the sperm whale. Sperm whales are listed as endangered under the ESA and thus by definition, depleted under the MMPA. Although large whale species could become entangled in longline gear, the probability of interaction with PIFSC longline gear is extremely low

considering a much lower level of survey effort and shorter duration sets relative to that of commercial fisheries. For example, in 2014 approximately 47.1 million hooks were deployed in commercial longline fishing in the PIFSC research areas (see *https://www.fisheries.noaa.gov/resource/data/hawaii-longline-fishery-logbook-summary-reports*); in contrast PIFSC plans to deploy up to 73,500 hooks/year or 0.0015 percent of the effort in these commercial fisheries. The mitigation measures taken by PIFSC are also expected to reduce the likelihood of taking large whales (see Mitigation section) Although there is only a limited potential for take, PIFSC has requested, and NMFS is authorizing, one take of humpback whale (Hawai'i stock) in longline gear and one take of a sperm whale (Hawai'i stock) by M/SI based on analogy with commercial fisheries over the 5-year authorization period of this application.

Trawl—Although PIFSC has never taken small delphinids in a pelagic midwater trawl such as an Isaacs-Kidd or Cobb trawl, and no commercial trawl fisheries in PIFSC research areas have reported takes, there is a remote possibility such a take could occur. This research targets very small pelagic species (*e.g.,* micronekton, pelagic larvae) not likely to attract foraging small delphinids. Thus incidental catch of a small delphinid is unlikely in either technique but even less so for the Isaacs-Kidd trawl due to the very small opening (about 3 m x 3 m) whereas the mouth of the PIFSC Cobb trawls are about 10 m x 10 m. However, to address a rare situation or event, PIFSC requested, and NMFS is authorizing, one take each of the following small delphinids in trawl gear over the 5-year period of this rule: bottlenose dolphin (all stocks), rough-toothed dolphin (Hawai'i stock), spinner dolphin (all stocks), Pantropical spotted dolphin (all stocks), and striped dolphin (Hawai'i stock).

Instrument and Trap Deployments—Humpback whales inhabit shallow waters, typically within the 100-fathom isobaths in the HARA (Baird *et al.,* 2000). PIFSC conducts a variety of instrument deployments and insular fish abundance surveys between 50 m and 600 m and bottomfish EFH surveys between 100–400 m (see table 1.1 in PIFSC's application) using gear similar to that used in a variety of commercial fisheries. Thus such research gear has the potential for entangling humpback whales surfacing from dives. Such instruments include aMOUSS, BotCam, baited remote underwater video systems (BRUVS) deployed from a vessel and connected to the surface with a line to a float or vessel; environmental sampling instruments deployed by line; and baited or unbaited bottom traps such as lobster traps and fish traps deployed from a vessel and connected to the surface with line to a float.

Therefore PIFSC requested, and NMFS is authorizing, one take of humpback whale (Hawai'i stock) in gear associated with deployed instruments and traps. In addition, based on a similarity in behavior, several species of ''curious'' small delphinids have the potential for becoming entangled in gear associated with instrument deployments. PIFSC has established mitigation measures already in place to reduce potential interactions (*e.g.,* no deployment when marine mammals are known to be in the immediate area). Because there is a remote chance such entanglement may occur when an animal investigates such gear, PIFSC requested, and NMFS is authorizing, one take each over the 5-year authorization period of each of the following small delphinid species: bottlenose dolphin (all stocks), rough-toothed dolphin (Hawai'i stock), spinner dolphin (all stocks), and pantropical spotted dolphin (all stocks) in ''instrument deployment'' gears.

Other gear—PIFSC considered the risk of interaction with marine mammals for all the research gear and instruments it uses, but PIFSC did not request, and NMFS has not authorized, incidental takes for research gear other than midwater trawls, longline, instrument deployments, and traps. PIFSC acknowledges that by having hooks, nets, lines, or vessels in the water there is a potential for incidental take of marine mammals during research activities. However, many of the fisheries and ecosystem research activities conducted by PIFSC involve gear or instruments that are not expected to cause mortality, serious injury, or Level A harassment. These include gear and instruments that are operated by hand or close enough to the vessel that they can be continuously observed and controlled such as dip nets, scoop nets, handheld gear and instruments used by SCUBA divers or free divers (cameras, transect lines, and spears), environmental data collectors deployed or attached by hand to the reef, marine debris removal tools (knives and float bags), and small surface net trawls adjacent to the vessel. Other gear or instruments that are used so infrequently, operate so slowly, or carried out with appropriate mitigation measures so as not to present a reasonable risk of interactions with marine mammals include: autonomous vehicles such as gliders, autonomous underwater vehicles (AUVs), unmanned aerial vehicles (UAVs), unmanned aircraft systems (UASs), and towed optical assessment devices (TOADs); submersibles; towed-divers; troll fishing; larval settlement traps temporarily installed on the reef; expendable bathythermographs (XBTs); and environmental data collectors temporarily deployed from a vessel to the seafloor and then retrieved remotely such as high-frequency recording packages (HARPs) and ecological acoustic readers (EARs). Please refer to table 1.1 and appendix A in PIFSC's application for a list of the research projects that use this gear and descriptions of their use.

The gear and instruments listed above are not considered to have a reasonable potential to take marine mammals given their physical characteristics, how they are fished, and the environments where they are used. There have been no marine mammal mortalities, serious injuries, or takes by Level A harassment associated with any of these gear types. Because of this, NMFS does not expect these activities to result in take of marine mammals in the PIFSC research areas, and has not authorized marine mammal take for these gears or instruments.

Bottomfishing—There is evidence that cetaceans and Hawaiian monk seals occasionally pursue fish caught on various hook-and-line gear (depredation of fishing lines) deployed in commercial and non-commercial fisheries across Hawai'i (Nitta and Henderson, 1993; Kobayashi and Kawamoto, 1994). This depredation behavior, which is documented as catch loss from the hook-and-line gear, may be beneficial to the marine mammal in providing prey but it also opens the possibility for the marine mammal to be hooked or entangled in the gear. PIFSC gave careful consideration to the potential for including incidental take requests for marine mammals in bottom handline (bottomfishing) gear because of the planned increase in research effort using that gear in the Insular Fish Abundance Estimation Comparison Survey (from approximately 700 sets per year to over 7000 sets per year). PIFSC has not had any interactions in the past with marine mammals while conducting research with bottomfishing gear in the MHI.

Bottlenose dolphins have been identified as the primary species associated with depredation of catch in the bottomfish fishery and they appear to be adept at pulling hooked fish from the gear without breaking the line or taking hooks off the line (Kobayashi and Kawamoto, 1994). It is not known if

these interactions result in injury, serious injury, or mortality of bottlenose dolphins or other cetaceans (Caretta *et al.,* 2015). No mortality or serious injuries of monk seals have been attributed to the MHI bottomfish handline fishery (Caretta *et al.,* 2019). In 2016, 11 seal hookings were documented and all were classified as non-serious injuries, although 6 of these would have been deemed serious had they not been mitigated (Henderson, 2017; Mercer, 2018). The hook-and-line rigging used to target ulua (jacks, *Caranx* spp.) are typical of shoreline fisheries that are distinct from the bottomfishing gear and methods used by PIFSC during its fisheries and ecosystem research. Although there are some similarities between the shoreline fishery and the bottomfishing gear used by PIFSC (*e.g.,* circle hooks), the general size and the way the hooks are rigged (*e.g.,* baits, leaders, weights, tackle) are typically different and probably present different risks of incidental hooking to monk seals. Ulua hooks are generally much larger circle hooks than PIFSC uses because the targeted ulua are usually greater than 50 pounds (23 kilograms) in weight. Shoreline fisheries (deployed from shore with rod and reel) also typically use ''slide bait'' or ''slide rigs'' that allow the use of live bait (small fish or octopus) hooked in the middle of the bait. If a monk seal pursued this live bait and targeted the center of the bait or swallowed it whole, it could get hooked in the mouth. PIFSC research with bottomfishing gear uses pieces of fish for bait that attract bottomfish but not monk seals. Monk seals could be attracted to a caught bottomfish but, given the length of the target bottomfish, it is unlikely that a monk seal would be physically capable of swallowing the whole fish and thus swallowing the hook. The risk of monk seals getting hooked on bottomfishing gear used in PIFSC research is therefore less than the risk of getting hooked on shoreline hook-and-line gears which are identified in Caretta *et al.* (2019).

PIFSC has no records of marine mammals interacting with bottomfishing research gear and given the mitigation measures the PIFSC would be required to implement for bottomfishing research to prevent marine mammals from interacting with bottomfishing activities (*e.g.,* avoiding fishing when monk seals are present; see Mitigation below), NMFS has determined that PIFSC use of research bottomfishing gear is unlikely to result in incidental take of marine mammals. These regulations require PIFSC to document potential depredation of its bottomfish research gear (catch loss) in the future, and increase monitoring efforts when catch loss becomes apparent, in an effort to better understand the potential risks of hooking to monk seals and other marine mammals.

TABLE 5—TOTAL ESTIMATED TAKE DUE TO GEAR INTERACTION, 2025–30 [a]

Common name (stock)	Authorized M/SI Level A take (all areas combined)							
	Midwater trawl		Hook-and-line		Instrument deployments and traps		Sum all gear (trawl, hook-and-line, and instruments and traps) annual request	Sum all gears 5-year authorization
	Calculated average take per year	Total takes over 5-year period	Calculated average take per year	Total takes over 5-year period	Calculated average take per year	Total takes over 5-year period		
Blainville's beaked whale (Hawai'i stock)	.....	.....	0.2	1	.....	.....	0.2	1
Cuvier's Beaked whale (Hawai'i pelagic stock)	.....	.....	0.2	1	.....	.....	0.2	1
Bottlenose dolphin (Hawai'i pelagic stock)	0.2	1	0.2	1	0.2	1	0.6	3
Bottlenose dolphin (All stocks, except above)	0.2	1	.....	.....	0.2	1	0.4	2
False killer whale (Hawai'i pelagic or unspecified [b])	.....	.....	0.2	[c] 1	.....	.....	0.2	1
Humpback whale (Hawai'i stock)	.....	.....	0.2	1	0.2	1	0.4	2
Kogia spp. (Hawai'i stocks)	.....	.....	0.2	1	.....	.....	0.2	1
Pantropical spotted dolphin (all stocks)	0.2	1	0.2	1	0.2	1	0.6	3
Pygmy killer whale (Hawai'i stock)	.....	.....	0.2	1	.....	.....	0.2	1
Risso's dolphin (Hawai'i stock)	.....	.....	0.2	1	.....	.....	0.2	1
Rough-toothed dolphin (Hawai'i stock)	0.2	1	0.2	1	0.2	1	0.6	3
Rough-toothed dolphin (all stocks except above)	.....	.....	0.2	1	0.2	1	0.4	2
Short-finned pilot whale (Hawai'i stock)	.....	.....	0.2	1	.....	.....	0.2	1
Sperm whale (Hawai'i stock)	.....	.....	0.2	1	.....	.....	0.2	1
Spinner dolphin (all stocks)	0.2	1	.....	.....	0.2	1	0.4	2
Striped dolphin (all stocks)	0.2	1	0.2	1	.....	.....	0.4	2

[a] Please see table 5 and preceding text for explanation of take estimates. Numbers of authorized takes are informed by area- and gear-specific vulnerability. Because we have no specific information to indicate whether any given future interaction might result in M/SI versus Level A harassment, we conservatively assume that all interactions equate to mortality for these fishing gear interactions.
[b] Hawai'i pelagic stock is designated as strategic. ''Unspecified stock'' occurs on the high seas.
[c] Longline research would only occur outside of FKW exclusion zone; potential take not in HARA, only within WCPRA.

Estimated Take Due to Acoustic Harassment

As described previously, we believe it is unlikely that PIFSC use of active acoustic sources is realistically likely to cause Level B harassment of marine mammals. However, per PISFC request, we conservatively assume that, at worst, Level B harassment may result from exposure to noise from these sources, and we carry forward the analytical approach developed in support of all NMFS Science Center incidental take regulations. In order to attempt to quantify the potential for Level B harassment to occur, NMFS (including the PIFSC and acoustics experts from other parts of NMFS) developed an analytical framework considering characteristics of the active acoustic systems, their expected patterns of use, and characteristics of the marine mammal species that may interact with them. The framework incorporated a

number of deliberately precautionary, simplifying assumptions, and the resulting exposure estimates, which are presumed here to equate to take by Level B harassment (as defined by the MMPA), may be seen as an overestimate of the potential for such effects to occur as a result of the operation of these systems.

Authorized takes from the use of active acoustic scientific sonar sources (*e.g.,* echosounders) are by Level B harassment only, in the form of disruption of behavioral patterns for individual marine mammals resulting from exposure to the use of active acoustic sources. Regarding the potential for Level A harassment in the form of permanent threshold shift to occur, the very short duration sounds emitted by these sources reduces the likely level of accumulated energy an animal is exposed to. An individual would have to remain exceptionally close to a sound source for unrealistic lengths of time, suggesting the likelihood of injury occurring is exceedingly small. Potential Level A harassment is therefore not considered further in this analysis.

Generally speaking, we estimate take by considering: (1) acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) and the number of days of activities. We note that while these basic factors can contribute to a basic calculation to provide an initial prediction of takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.,* previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the take estimate.

Acoustic Thresholds

NMFS recommends the use of acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur PTS of some degree (equated to Level A harassment). As described in detail for PIFSC and other science centers in previously issued **Federal Register** publications (*e.g.,* 85 FR 53606, August 28, 2020; 88 FR 27028, May 6, 2020), the use of the sources used by NMFS Science Centers, including PIFSC, do not have the potential to cause Level A harassment; therefore, our discussion is limited to behavioral harassment (Level B harassment).

Level B Harassment for non-explosive sources—Though significantly driven by received sound level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source (*e.g.,* frequency, predictability, duty cycle), the environment (*e.g.,* bathymetry), and the receiving animals (hearing, motivation, experience, demography, behavioral context) and can be difficult to predict (Southall *et al.,* 2007, Ellison *et al.,* 2011). Based on the best available science and the practical need to use a threshold based on a factor that is both predictable and measurable for most activities, NMFS uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS predicts that marine mammals are likely to be behaviorally harassed in a manner we consider Level B harassment when exposed to underwater anthropogenic noise above received levels of 120 dB re 1 microPascal (μPa) root mean square (rms) for continuous (*e.g.,* vibratory pile-driving, drilling) and above 160 dB re 1 μPa (rms) for intermittent (*e.g.,* scientific sonar, seismic airgun) sources.

The operating frequencies of active acoustic systems used by the PIFSC range from 30–200 kHz (see table 2 in the **Federal Register** notice of proposed rulemaking (86 FR 15298, March 22, 2021)). These frequencies are within the very upper hearing range limits of baleen whales (7 Hz to 35 kHz). The Simrad EM300 operates at a frequency of 30 kHz and the Simrad EK60 operates at 30–200 kHz. Baleen whales may be able to detect sound from the Simrad EM300 and the Simrad EK60 when it operates at the lower frequency. However, the beam pattern is extremely narrow (1 degree) at that frequency. The Acoustic Doppler Current Profiler (ADCP) Ocean Surveyor operates at 75 kHz, which is outside of baleen whale hearing capabilities. Therefore, we would not expect any exposures to these signals to result in behavioral harassment in baleen whales.

The assessment paradigm for active acoustic sources used in PIFSC fisheries research is relatively straightforward and has a number of key simple and conservative assumptions. NMFS' current acoustic guidance requires in most cases that we assume Level B harassment occurs when a marine mammal receives an acoustic signal at or above a simple step-function threshold. For use of these active acoustic systems used during PIFSC research, NMFS uses the threshold is 160 dB re 1 μPa (rms) as the best available science indicates the temporal characteristics of a source are most influential in determining behavioral impacts (Gomez *et al.,* 2016), and it is NMFS long standing practice to apply the 160 dB threshold to intermittent sources. Estimating the number of exposures at the specified received level requires several determinations, each of which is described sequentially below:

(1) A detailed characterization of the acoustic characteristics of the effective sound source or sources in operation;

(2) The operational areas exposed to levels at or above those associated with Level B harassment when these sources are in operation;

(3) A method for quantifying the resulting sound fields around these sources; and

(4) An estimate of the average density for marine mammal species in each area of operation.

Quantifying the spatial and temporal dimension of the sound exposure footprint (or ''swath width'') of the active acoustic devices in operation on moving vessels and their relationship to the average density of marine mammals enables a quantitative estimate of the number of individuals for which sound levels exceed the relevant threshold for each area. The number of potential incidents of Level B harassment is ultimately estimated as the product of the volume of water ensonified at 160 dB rms or higher and the volumetric density of animals determined from simple assumptions about their vertical stratification in the water column. Specifically, reasonable assumptions based on what is known about diving behavior across different marine mammal species were made to segregate those that predominately remain in the upper 200 m of the water column versus those that regularly dive deeper during foraging and transit. Methods for estimating each of these calculations are described in greater detail in the following sections, along with the simplifying assumptions made, and followed by the take estimates.

Sound source characteristics—An initial characterization of the general source parameters for the primary active acoustic sources operated by the PIFSC was conducted, enabling a full assessment of all sound sources used by the PIFSC and delineation of category 1 and category 2 sources, the latter of which were carried forward for analysis here. This auditing of the active acoustic sources also enabled a determination of the predominant sources that, when

operated, would have sound footprints exceeding those from any other simultaneously used sources. These sources were effectively those used directly in acoustic propagation modeling to estimate the zones within which the 160 dB rms received level would occur.

Many of these sources can be operated in different modes and with different output parameters. In modeling their potential impact areas, those features among those given previously in table 2 (*e.g.,* lowest operating frequency) of the proposed rulemaking that would lead to the most precautionary estimate of maximum received level ranges (*i.e.,* largest ensonified area) were used. The effective beam patterns took into account the normal modes in which these sources are typically operated. While these signals are brief and intermittent, a conservative assumption was taken in ignoring the temporal pattern of transmitted pulses in calculating Level B harassment events. Operating characteristics of each of the predominant sound sources were used in the calculation of effective line-kilometers and area of exposure for each source in each survey.

TABLE 6—EFFECTIVE EXPOSURE AREAS FOR PREDOMINANT ACOUSTIC SOURCES ACROSS TWO DEPTH STRATA

Active acoustic system	Effective exposure area: Sea surface to 200 m depth (km^2)	Effective exposure area: Sea surface to depth at which sound is attenuated to 160 dB SPL (km^2) [a]
Simrad EK60	0.0082	0.0413
Simrad EM300	0.112	3.7661
ADCP Ocean Surveyor	0.0086	0.0187

[a] Greater than 200 m depth.

Calculating effective line-kilometers—As described below, based on the operating parameters for each source type, an estimated volume of water ensonified at or above the 160 dB rms threshold was calculated. In all cases where multiple sources are operated simultaneously, the one with the largest estimated acoustic footprint was considered to be the effective source. Two depth zones were defined for each of the four research areas: 0–200 m and >200 m. Effective line distance and volume ensonified was calculated for each depth strata (0–200 m and >200 m), where appropriate. In some cases, this resulted in different sources being predominant in each depth stratum for all line km (*i.e.,* the total linear distance traveled during acoustic survey operations) when multiple sources were in operation. This was accounted for in estimating overall exposures for species that utilize both depth strata (deep divers). For each ecosystem area, the total number of line km that would be surveyed was determined, as was the relative percentage of surveyed line km associated with each source. The total line-kilometers for each survey, the dominant source, the effective percentages associated with each depth, and the effective total volume ensonified are given below (table 7).

Calculating volume of water ensonified—The cross-sectional area of water ensonified to a 160 dB rms received level was calculated using a simple spherical spreading model of sound propagation loss (20 log R) such that there would be 60 dB of attenuation over 1000 m. Spherical spreading is a reasonable assumption even in relatively shallow waters since, taking into account the beam angle, the reflected energy from the seafloor will be much weaker than the direct source and the volume influenced by the reflected acoustic energy would be much smaller over the relatively short ranges involved. We also accounted for the frequency-dependent absorption coefficient and beam pattern of these sound sources, which is generally highly directional. The lowest frequency was used for systems that are operated over a range of frequencies. The vertical extent of this area is calculated for two depth strata. These results, shown in table 7, were applied differentially based on the typical vertical stratification of marine mammals (see table 8).

Following the determination of effective sound exposure area for transmissions considered in two dimensions, the next step was to determine the effective volume of water ensonified at or above 160 dB rms for the entirety of each survey. For each of the three predominant sound sources, the volume of water ensonified is estimated as the athwartship cross-sectional area (in square kilometers) of sound at or above 160 dB rms (as illustrated in figure 6.1 of PIFSC's application) multiplied by the total distance traveled by the ship. Where different sources operating simultaneously would be predominant in each different depth strata, the resulting cross-sectional area calculated took this into account. Specifically, for shallow-diving species this cross-sectional area was determined for whichever was predominant in the shallow stratum, whereas for deeper-diving species this area was calculated from the combined effects of the predominant source in the shallow stratum and the (sometimes different) source predominating in the deep stratum. This creates an effective total volume characterizing the area ensonified when each predominant source is operated and accounts for the fact that deeper-diving species may encounter a complex sound field in different portions of the water column.

TABLE 7—FIVE-YEAR TOTAL LINE KILOMETERS FOR EACH VESSEL AND ITS PREDOMINANT SOURCE WITHIN TWO DEPTH STRATA

Vessel—survey	Average line kms per vessel	Dominant source	% Time source dominant (0–200m)	Line km/ dominant source (0–200m)	Volume ensonified at 0–200 m depth (km^3)	% Time source dominant (>200m)	Line km/ dominant source (>200m)	Volume ensonified at >200 m depth (km^3)
Hawaiian Archipelago Research Area								
Hi'ialakai RAMP	36,000	Simrad EM 300	25	9,000	1,000.8	25	9,000	32,894.1
	36,000	ADCP Ocean Surveyor.	75	27,000	232.2	75	27,000	272.1
Hi'ialakai Coral Reef Benthic Mapping	17,000	Simrad EM 300	100	17,000	1,890.4	100	17,000	62,133.3
Oscar Elton Sette Kona IEA	5,000	EK60	0	0	0	100	5,000	165.5
	5,000	ADCP Ocean Surveyor.	100	5,000	43.0	0	0	0
Oscar Elton Sette Insular Fish Abundance Estimation.	3,000	EK60	0	0	0	100	3,000	99.3
	3,000	ADCP Ocean Surveyor.	100	3,000	28.5	0	0	0
Hi'ialakai Deep Coral and Sponge Research	5,500	Simrad EM300	100	5,500	611.6	100	5,500	20,102.0
Oscar Elton Sette Sampling Pelagic Stages of Insular Fish Species.	4,000	EK60	0	0	0	100	4,000	132.4
	4,000	ADCP Ocean Surveyor.	100	4,000	34.4	0	0	0
Oscar Elton Sette Cetacean Ecology Assessment.	40,000	EK60	0	0	0	100	40,000	1,324.0
	40,000	ADCP Ocean Surveyor.	100	40,000	344.0	0	0	0
Hi'ialakai or *Oscar Elton Sette* RAMP Gear & Instrument Development & Field Trials.	2,500	EK60	0	0	0	100	2,500	82.8
	2500	ADCP Ocean Surveyor.	100	2,500	21.5	0	0	0
Mariana Archipelago Research Area								
Hi'ialakai RAMP	18,000	Simrad EK60	25	4,500	500.4	25	4,500	16,447.1
	18,000	ADCP Ocean Surveyor.	75	13,500	116.1	75	13,500	136.4
Hi'ialakai Coral Reef Benthic Mapping	8,600	Simrad EM 300	100	8,600	956.3	100	8,600	31,432.1
Oscar Elton Sette Insular Fish Abundance Estimation.	2,000	EK60	0	0	0	100	2,000	66.2
	2,000	ADCP Ocean Surveyor.	100	2,000	17.2	0	0	0
Hi'ialakai Deep Coral and Sponge	5,500	Simrad EM 300	100	5,500	611.6	100	5,500	20,102.0
Oscar Elton Sette Sampling Pelagic Stages of Insular Fish.	2,000	EK60	0	0	0	100	2,000	66.2
	2,000	ADCP Ocean Surveyor.	100	2,000	17.2	0	0	0
Oscar Elton Sette Cetacean Ecology Assessment.	20,000	EK60	0	0	0	100	20,000	662.0
	20,000	ADCP Ocean Surveyor.	100	20,000	172.0	0	0	0
Hi'ialakai Mariana Baseline Surveys	3,000	EK60	0	0	0	100	3,000	99.3
	3,000	ADCP Ocean Surveyor.	100	3,000	25.8	0	0	0
American Samoa Research Area								
NOAA ship *Hi'ialakai* RAMP	18,000	Simrad EK60	25	4,500	500.4	25	4,500	16,447.1
	18,000	ADCP Ocean Surveyor.	75	13,500	116.1	75	13,500	136.4
Hi'ialakai Coral Reef Benthic Mapping	8,600	Simrad EM 300	100	8,600	956.3	100	8,600	31,432.1
NOAA ship *Oscar Elton Sette* Insular Fish Abundance Estimation.	2,000	EK60	0	0	0	100	2,000	66.2
		ADCP Ocean Surveyor.	100	2,000	17.2	0	0	0
Hi'ialakai Deep Coral and Sponge Research	500	Simrad EM 300	100	500	55.6	100	500	1,827.5
Oscar Elton Sette Sampling Pelagic Stage of Insular Fish.	2,000	EK60	0	0	0	100	2,000	66.2
	2,000	ADCP Ocean Surveyor.	100	2,000	17.2	0	0	0
Oscar Elton Sette Cetacean Ecology Assessment.	20,000	EK60	0	0	0	100	20,000	662.0
	20,000	ADCP Ocean Surveyor.	100	20,000	172.0	0	0	0
Western and Central Pacific Research Area								
Hi'ialakai RAMP	18,000	Simrad EK60	25	4,500	500.4	25	4,500	16,447.1
	18,000	ADCP Ocean Surveyor.	75	13,500	116.1	75	13,500	136.4
Hi'ialakai Coral Reef Benthic Mapping	8,600	Simrad EM 300	100	8,600	956.3	100	8,600	31,432.1
Oscar Elton Sette Oceanographic	7,000	EK60	0	0	0	100	7,000	231.7
	7,000	ADCP Ocean Surveyor.	100	7,000	60.2	0	0	0
Oscar Elton Sette Insular Fish Abundance Estimation.	2,000	EK60	0	0	0	100	2,000	66.2
	2,000	ADCP Ocean Surveyor.	100	2,000	17.2	0	0	0
Hi'ialakai Deep Coral and Sponge	500	Simrad EM 300	100	500	55.6	100	500	1,827.5
Oscar Elton Sette Sampling Pelagic Stages of Insular Fish.	2,000	EK60	0	0	0	100	2,000	66.2
	2,000	ADCP Ocean Surveyor.	100	2,000	17.2	0	0	0

TABLE 7—FIVE-YEAR TOTAL LINE KILOMETERS FOR EACH VESSEL AND ITS PREDOMINANT SOURCE WITHIN TWO DEPTH STRATA—Continued

Vessel—survey	Average line kms per vessel	Dominant source	% Time source dominant (0–200m)	Line km/ dominant source (0–200m)	Volume ensonified at 0–200 m depth (km^3)	% Time source dominant (>200m)	Line km/ dominant source (>200m)	Volume ensonified at >200 m depth (km^3)
Oscar Elton Sette Cetacean Ecology Assessment.	20,000 20,000	EK60 ..... ADCP Ocean Surveyor.	0 100	0 20,000	0 172.0	100 0	20,000 0	662.0 0

Marine Mammal Densities—One of the primary limitations to traditional estimates of behavioral harassment from acoustic exposure is the assumption that animals are uniformly distributed in time and space across very large geographical areas, such as those being considered here. There is ample evidence that this is in fact not the case, and marine species are highly heterogeneous in terms of their spatial distribution, largely as a result of species-typical utilization of heterogeneous ecosystem features. Some more sophisticated modeling efforts have attempted to include species-typical behavioral patterns and diving parameters in movement models that more adequately assess the spatial and temporal aspects of distribution and thus exposure to sound. While simulated movement models were not used to mimic individual diving or aggregation parameters in the determination of animal density in this estimation, the vertical stratification of marine mammals based on known or reasonably assumed diving behavior was integrated into the density estimates used.

First, typical two-dimensional marine mammal density estimates (animals/km^2) were obtained from various sources for each ecosystem area. These were estimated from marine mammal SARs and other sources (please see table 6–5 of PIFSC's application). There are a number of caveats associated with these estimates:

(1) They are often calculated using visual sighting data collected during one season rather than throughout the year. The time of year when data were collected and from which densities were estimated may not always overlap with the timing of PIFSC fisheries surveys (detailed previously in *Detailed Description of Activities*).

(2) The densities used for purposes of estimating acoustic exposures do not take into account the patchy distributions of marine mammals in an ecosystem, at least on the moderate to fine scales over which they are known to occur. Instead, animals are considered evenly distributed throughout the assessed area, and seasonal movement patterns are not taken into account.

(3) Marine mammal density information is in many cases based on limited historical surveys and may be incomplete or absent for many regions of the vast geographic area addressed by PIFSC fisheries research. As a result density estimates for some species/stocks in some regions are based on the best available data for other regions and/or similar stocks.

In addition, and to account for at least some coarse differences in marine mammal diving behavior and the effect this has on their likely exposure to these kinds of often highly directional sound sources, a volumetric density of marine mammals of each species was determined. This value is estimated as the abundance averaged over the two-dimensional geographic area of the surveys and the vertical range of typical habitat for the population. Habitat ranges were categorized in two generalized depth strata (0–200 m and greater than 200 m) based on gross differences between known generally surface-associated and typically deep-diving marine mammals (*e.g.,* Reynolds and Rommel, 1999; Perrin *et al.,* 2009). Animals in the shallow-diving stratum were assumed, on the basis of empirical measurements of diving with monitoring tags and reasonable assumptions of behavior based on other indicators, to spend a large majority of their lives (*i.e.,* greater than 75 percent) at depths shallower than 200 m. Their volumetric density and thus exposure to sound is therefore limited by this depth boundary. Species in the deeper diving stratum were reasonably estimated to dive deeper than 200 m and spend 25 percent or more of their lives at these greater depths. Their volumetric density and thus potential exposure to sounds up to the 160 dB rms level is extended from the surface to the depth at which this received level condition occurs. Their volumetric density and thus potential exposure to sound at or above the 160 dB rms threshold is extended from the surface to 500 m, (*i.e.,* nominal maximum water depth in regions where these surveys occur).

The volumetric densities are estimates of the three-dimensional distribution of animals in their typical depth strata. For shallow-diving species the volumetric density is the area density divided by 0.2 km (*i.e.,* 200 m). For deeper diving species, the volumetric density is the area density divided by a nominal value of 0.5 km (*i.e.,* 500 m). The two-dimensional and resulting three-dimensional (volumetric) densities for each species in each ecosystem area are shown in table 8.

TABLE 8—VOLUMETRIC DENSITIES CALCULATED FOR EACH SPECIES IN THE PIFSC RESEARCH AREAS

Species (common name)	Typical dive depth strata		Area density (#/km^2)	Volumetric density (#/km^3)
	0–200 m	>200 m		
Hawaiian Archipelago Research Area				
Pantropical spotted dolphin	X		0.02332	0.1166
Striped dolphin	X		0.025	0.125
Spinner dolphin—all insular	X		0.009985	0.0499255
Rough-toothed dolphin	X		0.02963	0.14815
Bottlenose dolphin	X		0.00899	0.04495
Risso's dolphin		X	0.00474	0.00948
Fraser's dolphin	X		0.02104	0.1052

TABLE 8—VOLUMETRIC DENSITIES CALCULATED FOR EACH SPECIES IN THE PIFSC RESEARCH AREAS—Continued

Species (common name)	Typical dive depth strata		Area density (#/km^2)	Volumetric density (#/km^3)
	0–200 m	>200 m		
Melon-headed whale	X		0.00354	0.0177
Melon-headed whale—Kohala stock	X		0.001415	0.0070734
Pygmy killer whale	X		0.00435	0.02175
False killer whale—pelagic		X	0.0006	0.0012
False killer whale—MHI insular		X	0.0009	0.0018
False killer whale—NWHI		X	0.0014	0.0028
Short-finned pilot whale		X	0.00797	0.01594
Killer whale	X		0.00006	0.0003
Sperm whale		X	0.00186	0.00372
Pygmy sperm whale		X	0.00291	0.00582
Dwarf sperm whale		X	0.00714	0.01428
Blainville's beaked whale		X	0.00086	0.00172
Cuvier's beaked whale		X	0.0003	0.0006
Longman's beaked whale		X	0.00311	0.00622
Unidentified Mesoplodon		X	0.00189	0.00378
Unidentified beaked whale		X	0.00117	0.00234
Hawaiian monk seal	X		0.003741	0.0187042
Mariana Archipelago Research Area				
Pantropical spotted dolphin	X		0.0226	0.113
Striped dolphin	X		0.00616	0.0308
Spinner dolphin	X		0.009985	0.0499255
Rough-toothed dolphin	X		0.00314	0.0157
Bottlenose dolphin	X		0.00029	0.00145
Risso's dolphin		[1] X	0.00021	0.00042
Fraser's dolphin	X		0.02104	0.1052
Melon-headed whale	X		0.00428	0.0214
Pygmy killer whale	X		0.00014	0.0007
False killer whale—pelagic		[1] X	0.00111	0.00222
Short-finned pilot whale		X	0.00159	0.00318
Killer whale	X		0.00006	0.0003
Sperm whale		X	0.00123	0.00246
Pygmy sperm whale		X	0.00291	0.00582
Dwarf sperm whale		X	0.00714	0.01428
Blainville's beaked whale		X	0.00086	0.00172
Cuvier's beaked whale		X	0.0003	0.0006
Unidentified beaked whale		X	0.00117	0.00234
American Samoa Research Area				
Pantropical spotted dolphin	X		0.02332	0.1166
Spinner dolphin	X		0.00475	0.02375
Rough-toothed dolphin	X		0.02963	0.14815
Bottlenose dolphin	X		0.00899	0.04495
False killer whale	X		0.00090	0.0045
Short-finned pilot whale		X	0.00797	0.01594
Killer whale	X		0.00006	0.0003
Sperm whale		X	0.00186	0.00372
Dwarf sperm whale		X	0.00714	0.01428
Cuvier's beaked whale		X	0.00030	0.0006
Unidentified beaked whale		X	0.00117	0.00234
Western and Central Pacific Research Area				
Pantropical spotted dolphin	X		0.02332	0.1166
Striped dolphin	X		0.025	0.125
Spinner dolphin	X		0.011095	0.055475
Rough-toothed dolphin	X		0.02963	0.14815
Bottlenose dolphin	X		0.00899	0.04495
Risso's dolphin		[1] X	0.00474	0.00948
Fraser's dolphin	X		0.02104	0.1052
Melon-headed whale	X		0.00354	0.0177
Pygmy killer whale	X		0.00435	0.02175
False killer whale		[1] X	0.00102	0.00204
Short-finned pilot whale		X	0.00797	0.01594
Killer whale	X		0.00006	0.0003
Sperm whale		X	0.00186	0.00372
Pygmy sperm whale		X	0.00291	0.00582
Dwarf sperm whale		X	0.00714	0.01428
Blainville's beaked whale		X	0.00086	0.00172

TABLE 8—VOLUMETRIC DENSITIES CALCULATED FOR EACH SPECIES IN THE PIFSC RESEARCH AREAS—Continued

Species (common name)	Typical dive depth strata		Area density (#/km²)	Volumetric density (#/km³)
	0–200 m	>200 m		
Cuvier's beaked whale		X	0.0003	0.0006
Deraniyagala's beaked whale		X	0.0003	0.0006
Longman's beaked whale		X	0.00311	0.00622
Unidentified beaked whale		X	0.00117	0.00234

[1] NMFS has classified these species as deep diving in the PIFSC research areas, which is different from their classification as shallow-diving species by the other NMFS Fisheries Science Centers. These classifications of deep-diving are based on unpublished data from telemetry studies including depth of dive and stomach contents of deep-diving prey items (E. Oleson, personal communication, November 10, 2015).

Using Area of Ensonification and Volumetric Density to Estimate Exposures—Estimates of potential incidents of Level B harassment (*i.e.,* potential exposure to levels of sound at or exceeding the 160 dB rms threshold) are then calculated by using (1) the combined results from output characteristics of each source and identification of the predominant sources in terms of acoustic output; (2) their relative annual usage patterns for each operational area; (3) a source-specific determination made of the area of water associated with received sounds at the extent of a depth boundary; and (4) determination of a biologically-relevant volumetric density of marine mammal species in each area. Estimates of Level B harassment by acoustic sources are the product of the volume of water ensonified at 160 dB rms or higher for the predominant sound source for each relevant survey and the volumetric density of animals for each species. Source- and stratum-specific exposure estimates are the product of these ensonified volumes and the species-specific volumetric densities (tables 7, 8 and 9). The general take estimate equation for each source in each depth stratum is density * (ensonified area * line kms). To illustrate, we use the ADCP Ocean Surveyor in the HARA and the pantropical spotted dolphin as an example.

(1) ADCP Ocean Surveyor ensonified area (0–200 m) = 0.0086 km².

(2) Total Line kms = 81,500 km.

(3) Pantropical spotted dolphin density (0–200 m) = 0.11660 dolphins/km³.

(4) Estimated exposures to sound ≥160 dB rms = 0.11660 pantropical spotted dolphin/km³ * (0.0086 km² * 81,500 km) = 81.72 (rounded up) = 82 estimated pantropical spotted dolphin exposures to SPLs ≥160 dB rms resulting from use of the ADCP Ocean Surveyor in the HARA.

Totals in tables 9–12 represent sums across all relevant surveys and sources rounded up to the nearest whole number. Note that take of baleen whales is not predicted due to the lack of overlap in their hearing range with the operating frequencies of PIFSC acoustic sources.

TABLE 9—DENSITIES AND ESTIMATED SOURCE-, STRATUM-, AND SPECIES-SPECIFIC 5-YEAR ESTIMATES OF LEVEL B HARASSMENT IN THE HARA

Species/stocks	Volumetric density (#/km³)	Estimated Level B harassment (numbers of animals) in 0–200m depth stratum			Estimated Level B harassment in >200m depth stratum		Total take[a]
		EK60	EM300	ADCP	EK60	EM300	
Pantropical spotted dolphin	0.11660	0	408	82	0	0	490
Striped dolphin	0.12500	0	438	88	0	0	525
Spinner dolphin—all insular	0.04993	0	175	35	0	0	210
Rough-toothed dolphin	0.14815	0	519	104	0	0	623
Bottlenose dolphin (all stocks)	0.04495	0	157	32	0	0	189
Risso's dolphin	0.00948	0	33	7	17	1,091	1,148
Fraser's dolphin	0.10520	0	368	74	0	0	442
Melon-headed whale	0.01770	0	62	12	0	0	74
Melon-headed whale—Kohala stock	0.00707	0	25	5	0	0	30
Pygmy killer whale	0.02175	0	76	15	0	0	91
False killer whale—pelagic	0.00120	0	4	1	2	138	145
False killer whale—MHI insular	0.00180	0	6	1	3	207	218
False killer whale—NWHI	0.00280	0	10	2	5	322	339
Short-finned pilot whale	0.01594	0	56	11	29	1,835	1,931
Killer whale	0.00030	0	1	0	0	0	[b]6
Sperm whale	0.00372	0	13	3	7	428	451
Pygmy sperm whale	0.00582	0	20	4	10	670	705
Dwarf sperm whale	0.01428	0	50	10	26	1,644	1,730
Blainville's beaked whale	0.00172	0	6	1	3	198	208
Cuvier's beaked whale	0.00060	0	2	0	1	69	73
Longman's beaked whale	0.00622	0	22	4	11	716	753
Unidentified *Mesoplodon*	0.00378	0	13	3	7	435	458
Unidentified beaked whale	0.00234	0	8	2	4	269	283
Hawaiian monk seal	0.01870	0	66	13	0	0	79

[a] Total take may not equal sum of estimated take from each acoustic source and depth stratum due to rounding of fractional calculated takes.
[b] Where calculated take over 5 years is less than typical group size, authorized take has been increased to mean group size (U.S. Navy 2017).

TABLE 10—DENSITIES AND ESTIMATED SOURCE-, STRATUM-, AND SPECIES-SPECIFIC 5-YEAR ESTIMATES OF LEVEL B HARASSMENT IN THE MARA

Species	Volumetric density (#/km^3)	Estimated Level B harassment (numbers of animals) in 0–200m depth stratum			Estimated Level B harassment in >200m depth stratum			Total take [a]
		EK60	EM300	ADCP	EK60	EM300	ADCP	
Pantropical spotted dolphin	0.11300	0	234	37	0	0	0	271
Striped dolphin	0.03080	0	64	10	0	0	0	74
Spinner dolphin	0.04993	0	103	17	0	0	0	120
Rough-toothed dolphin	0.01570	0	32	5	0	0	0	38
Bottlenose dolphin	0.00145	0	3	0	0	0	0	[b] 6
Risso's dolphin	0.00042	0	1	0	0	29	0	30
Fraser's dolphin	0.10520	0	218	35	0	0	0	[b] 283
Melon-headed whale	0.02140	0	44	7	0	0	0	[b] 73
Pygmy killer whale	0.00070	0	1	0	0	0	0	[b] 7
False killer whale (pelagic)	0.00222	0	5	1	2	151	0	159
Short-finned pilot whale	0.00318	0	7	1	3	216	0	227
Killer whale	0.00030	0	1	0	0	0	0	[b] 4
Sperm whale	0.00246	0	5	1	2	167	0	175
Pygmy sperm whale	0.00582	0	12	2	5	396	1	416
Dwarf sperm whale	0.01428	0	30	5	13	971	2	1,020
Blainville's beaked whale	0.00172	0	4	1	2	117	0	123
Cuvier's beaked whale	0.00060	0	1	0	1	41	0	43
Unidentified beaked whale	0.00234	0	5	1	2	159	0	167

[a] Total take may not equal sum of estimated take from each acoustic source and depth stratum due to rounding of fractional calculated takes.
[b] Where calculated take over 5 years is less than typical group size, authorized take has been increased to mean group size (U.S. Navy 2017).

TABLE 11—DENSITIES AND ESTIMATED SOURCE-, STRATUM-, AND SPECIES-SPECIFIC 5-YEAR ESTIMATES OF LEVEL B HARASSMENT IN THE ASARA

Species	Volumetric density (#/km^3)	Estimated Level B harassment (numbers of animals) in 0–200m depth stratum			Estimated Level B harassment in >200m depth stratum			Total take [a]
		EK60	EM300	ADCP	EK60	EM300	ADCP	
Pantropical spotted dolphin	0.11660	0	176	38	0	0	0	214
Spinner dolphin	0.02375	0	36	8	0	0	0	44
Rough-toothed dolphin	0.14815	0	224	48	0	0	0	272
Bottlenose dolphin	0.04495	0	68	14	0	0	0	82
False killer whale	0.00450	0	7	1	0	0	0	[b] 10
Short-finned pilot whale	0.01594	0	24	5	13	792	2	836
Killer whale	0.00030	0	0	0	0	0	0	[b] 4
Sperm whale	0.00372	0	6	1	3	185	1	195
Dwarf sperm whale	0.01428	0	22	5	11	710	2	749
Cuvier's beaked whale	0.00060	0	1	0	0	30	0	31
Unidentified beaked whale	0.00234	0	4	1	2	116	0	123

[a] Total take may not equal sum of estimated take from each acoustic source and depth stratum due to rounding of fractional calculated takes.
[b] Where calculated take over 5 years is less than typical group size, authorized take has been increased to mean group size (U.S. Navy 2017).

TABLE 12—DENSITIES AND ESTIMATED SOURCE-, STRATUM-, AND SPECIES-SPECIFIC 5-YEAR ESTIMATES OF LEVEL B HARASSMENT IN THE WCPRA

Species	Volumetric density (#/km^3)	Estimated Level B harassment (numbers of animals) in 0–200m depth stratum			Estimated Level B harassment in >200m depth stratum			Total Take [a]
		EK60	EM300	ADCP	EK60	EM300	ADCP	
Pantropical spotted dolphin	0.11660	0	176	45	0	0	0	221
Striped dolphin	0.12500	0	189	48	0	0	0	237
Spinner dolphin	0.05548	0	84	21	0	0	0	105
Rough-toothed dolphin	0.14815	0	224	57	0	0	0	281
Bottlenose dolphin	0.04495	0	68	17	0	0	0	85
Risso's dolphin	0.00948	0	14	4	10	471	1	500
Fraser's dolphin	0.10520	0	159	40	0	0	0	283[b]
Melon-headed whale	0.01770	0	27	7	0	0	0	73[b]
Pygmy killer whale	0.02175	0	33	8	0	0	0	41

TABLE 12—DENSITIES AND ESTIMATED SOURCE-, STRATUM-, AND SPECIES-SPECIFIC 5-YEAR ESTIMATES OF LEVEL B HARASSMENT IN THE WCPRA—Continued

Species	Volumetric density (#/km^3)	Estimated Level B harassment (numbers of animals) in 0–200m depth stratum			Estimated Level B harassment in >200m depth stratum			Total Take [a]
		EK60	EM300	ADCP	EK60	EM300	ADCP	
False killer whale	0.00204	0	3	1	2	101	0	107
Short-finned pilot whale	0.01594	0	24	6	16	792	2	841
Killer whale	0.00030	0	0	0	0	0	0	4[b]
Sperm whale	0.00372	0	6	1	4	185	1	197
Pygmy sperm whale	0.00582	0	9	2	6	289	1	307
Dwarf sperm whale	0.01428	0	22	5	15	710	2	754
Blainville's beaked whale	0.00172	0	3	1	2	85	0	91
Cuvier's beaked whale	0.00060	0	1	0	1	30	0	32
Deraniyagala's beaked whale	0.00060	0	1	0	1	30	0	32
Longman's beaked whale	0.00622	0	9	2	6	309	1	328
Unidentified beaked whale	0.00234	0	4	1	2	116	0	123

[a] Total take may not equal sum of estimated take from each acoustic source and depth stratum due to rounding of fractional calculated takes.
[b] Where calculated take over 5 years is less than typical group size, authorized take has been increased to mean group size (U.S. Navy 2018)

TABLE 13—TOTAL AUTHORIZED ANNUAL AND 5-YEAR TAKES BY LEVEL B HARASSMENT FROM ACOUSTIC DISTURBANCE

Species	All areas 5-year total take by Level B harassment	All areas average annual take by Level B harassment [a]
Blainville's beaked whale	422	84
Bottlenose dolphin	362	72
Cuvier's beaked whale	179	36
Deraniyagala's beaked whale	32	6
Dwarf sperm whale	4,253	851
False killer whale	978	196
Fraser's dolphin	1,008	202
Hawaiian monk seal	79	16
Killer whale	18	4
Longman's beaked whale	1,081	216
Melon-headed whale	250	50
Pantropical spotted dolphin	1,196	239
Pygmy killer whale	139	28
Pygmy sperm whale	1,428	286
Risso's dolphin	1,678	336
Rough-toothed dolphin	1,214	243
Short-finned pilot whale	3,835	767
Sperm whale	1,018	204
Spinner dolphin	479	96
Striped dolphin	836	167
Unidentified beaked whale	696	139
Unidentified *Mesoplodon*	458	92

[a] Average annual take calculated by dividing total 5-year take by five and rounding to nearest whole number.

Estimated Take Due to Physical Disturbance

Take due to physical disturbance could potentially happen, as it is likely that some Hawaiian monk seals will move or flush from known haul-outs into the water in response to the presence or sound of PIFSC vessels or researchers. In the MHI and the NWHI, there are numerous sites used by the Hawaiian monk seal to haul out (sandy beaches, rocky outcroppings, exposed reefs) where the physical presence and sounds of researchers walking by or passing nearby in small boats may disturb animals present. Disturbance to Hawaiian monk seals would occur in the HARA only. Physical disturbance would result in no greater than Level B harassment. Behavioral responses may be considered according to the scale shown in table 14 and based on the method developed by Mortenson (1996). We consider responses corresponding to levels 2–3 to constitute Level B harassment.

TABLE 14—LEVELS OF PINNIPED BEHAVIORAL DISTURBANCE

Level	Type of response	Definition
1	Alert	Seal head orientation or brief movement in response to disturbance, which may include turning head towards the disturbance, craning head and neck while holding the body rigid in a u-shaped position, changing from a lying to a sitting position, or brief movement of less than twice the animal's body length.

TABLE 14—LEVELS OF PINNIPED BEHAVIORAL DISTURBANCE—Continued

Level	Type of response	Definition
2*	Movement	Movements in response to the source of disturbance, ranging from short withdrawals at least twice the animal's body length to longer retreats over the beach, or if already moving a change of direction of greater than 90 degrees.
3*	Flush	All retreats (flushes) to the water.

* Only observations of disturbance levels 2 and 3 are recorded as takes.

The draft 2023 SAR for Hawaiian monk seal estimates the total abundance in the Hawaiian archipelago is 1,564 seals (CV = 0.05). Not all of these seals haul out at the same time or at the same places, and therefore it is difficult to predict if any monk seals will be present at any particular research location at any point in time. For MTBAP activities, we use anecdotal information from the past 5 years on monk seal presence during turtle surveys, but for the projects where seal observations have not been recorded in the past, the best way to estimate the amount of Level B harassment from those projects (*i.e.,* Reef Assessment and Monitoring Program (RAMP) and Marine Debris Research and Removal (MDRR)) would be to approximate the number of seals hauled out at any point in time across the HARA and the probability that a researcher would be close enough to actually disturb the seal.

Since 2018, MTBAP has been systematically recording any potential takes of monk seals during turtle survey activities in the NWHI. This data includes the total number of seals present, and the number of seals that reacted to the turtle research activities by level of disturbance (table 14). On any given survey, the maximum number of seals that were observed at one time over 664 surveys was 52 and the average number of monk seals reacting to the presence of researchers at levels 2–3 (table 14) in 1 year was 29 seals (NMFS unpublished data).

The greatest number of levels 2 and 3 disturbances of monk seal in 1 year was 62 in 2021; however the next highest annual disturbance number was 28 in 2020 (NMFS unpublished data). 2021 was a peak sea turtle nesting season and had a long field season (6 months, compared to a typical 4 month season). In comparison, 2018 was also a peak sea turtle nesting season that had a similarly long field season, but had only 20 records of level 2–3 reactions. Given these data, and allowing for a buffer for seals at other islands where sea turtle research activities occur, we would not expect take of monk seals to exceed more than approximately 70 instances of Level B harassment in any given year due to MTBAP research activities. This estimate of potential annual monk seal take resulting from MTBAP research activities is small relative to the annual take by Level B harassment of monk seals from other PIFSC research, as described in the 2021 proposed rule and detailed in the following, and we anticipate that the total described below would be inclusive of the amount anticipated to result from MTBAP activities.

Parrish *et al.* (2002) estimated approximately one-third of the total population may be hauled out at any point in time. Assuming that all seals have an equal probability of hauling out anywhere in the archipelago, one-third of 1,564 is approximately 500 individual monk seals. Given that the two surveys with the highest probability of disturbing monk seals, aside from MTBAP research, (*i.e.,* RAMP and MDRR) systematically circumnavigate all the islands and atolls when they are conducted, we could estimate the annual maximum number of Level B harassment takes as 1,000 during the years when these are conducted. Over the course of 5 years, this would be approximately 5,000 potential instances of Level B harassment if all the surveys took place every year at every location across the HARA. However, RAMP surveys occur in the HARA approximately twice every 5 years and MDRR Surveys are rarely funded to a level that would support complete circumnavigation of the HARA each year. In addition, during some RAMP surveys the location of marine debris are identified (and recorded), thus precluding the need for marine debris identification later (only removal). Therefore, the approximately 5,000 potential disturbances over 5 years can be reduced by assuming that the maximum annual harassment would occur on only 2 of 5 years, *i.e.,* to approximately 2,000 potential disturbances over 5 years. Furthermore, not all small boat operations during the surveys for these 2 programs are close enough to the shoreline to actually cause a disturbance like those caused from MTBAP activities (*e.g.,* a seal may be hauled out on a beach in a bay but the shallow fringing reef may keep the RAMP or MDRR small boats from getting within half of a mile from shore). Additionally, all researchers implement avoidance and minimization measures while carrying out the surveys to further reduce the likelihood of disturbing monk seals. The approximately 2,000 potential disturbances can realistically be expected to be reduced through avoidance or sheer geographical separation by at least 50 percent based on prior experience of the PIFSC. Therefore, the PIFSC has requested, and NMFS is authorizing, 1,000 instances of Level B harassment of Hawaiian monk seals due to the physical presence of researchers over the 5-year authorization period, or an average of 200 takes by Level B harassment per year. We anticipate that this estimate would be inclusive of the takes resulting from MTBAP activities.

Mitigation

In order to issue an incidental take authorization under Section 101(a)(5)(A) or (D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the specified activity, ''and other means of effecting the least practicable impact on [the] species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock'' for certain subsistence uses. NMFS' regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting such activity or other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, we carefully consider two primary factors:

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is

expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat. This considers the nature of the potential adverse impact being mitigated (likelihood, scope, range). It further considers the likelihood that the measure will be effective if implemented (probability of accomplishing the mitigating result if implemented as planned) the likelihood of effective implementation (probability implemented as planned); and

(2) The practicability of the measures for applicant implementation, which may consider such things as cost, impact on operations, personnel safety, and practicality of implementation.

Mitigation for Marine Mammals and Their Habitat

The PIFSC has invested significant time and effort in identifying technologies, practices, and equipment to minimize the impact of the planned activities on marine mammal species and stocks and their habitat. The mitigation measures discussed here have been determined to be both effective and practicable and, in some cases, have already been implemented by the PIFSC. In addition, the PIFSC is actively conducting research to determine if gear modifications are effective at reducing take from certain types of gear; any potentially effective and practicable gear modification mitigation measures will be discussed as research results are available as part of the adaptive management strategy included in this rule.

General Measures

Visual Monitoring—Effective monitoring is a key step in implementing mitigation measures and is achieved through regular marine mammal watches. Marine mammal watches are a standard part of conducting PIFSC fisheries research activities, particularly those activities that use gears that are known to or potentially interact with marine mammals. Marine mammal watches and monitoring occur during daylight hours prior to deployment of gear (*e.g.,* trawls, longline gear), and they continue until gear is brought back on board. If marine mammals are sighted in the area and are considered to be at risk of interaction with the research gear, then the sampling station is either moved or canceled or the activity is suspended until the marine mammals are no longer in the area. On smaller vessels, the Chief Scientist (CS) and the vessel operator are typically those looking for marine mammals and other protected species. When marine mammal researchers are on board (distinct from marine mammal observers dedicated to monitoring for potential gear interactions), they will record the estimated species and numbers of animals present and their behavior. If marine mammal researchers are not on board or available, then the CS in cooperation with the vessel operator will monitor for marine mammals and provide training as practical to bridge crew and other crew to observe and record such information.

Coordination and Communication—When PIFSC survey effort is conducted aboard NOAA-owned vessels, there are both vessel officers and crew and a scientific party. Vessel officers and crew are not composed of PIFSC staff but are employees of NOAA's Office of Marine and Aviation Operations (OMAO), which is responsible for the management and operation of NOAA fleet ships and aircraft and is composed of uniformed officers of the NOAA Commissioned Corps as well as civilians. The ship's officers and crew provide mission support and assistance to embarked scientists, and the vessel's Commanding Officer (CO) has ultimate responsibility for vessel and passenger safety and, therefore, decision authority regarding the implementation of mitigation measures. When PIFSC survey effort is conducted aboard cooperative platforms (*i.e.,* non-NOAA vessels), ultimate responsibility and decision authority again rests with non-PIFSC personnel (*i.e.,* vessel's master or captain). Although the discussion throughout this rule does not always explicitly reference those with decision-making authority from cooperative platforms, all mitigation measures apply with equal force to non-NOAA vessels and personnel as they do to NOAA vessels and personnel. Decision authority includes the implementation of mitigation measures (*e.g.,* whether to stop deployment of trawl gear upon observation of marine mammals). The scientific party involved in any PIFSC survey effort is composed, in part or whole, of PIFSC staff and is led by a CS. Therefore, because the PIFSC—not OMAO or any other entity that may have authority over survey platforms used by PIFSC—is the applicant to whom any incidental take authorization issued under the authority of these regulations would be issued, we require that the PIFSC take all necessary measures to coordinate and communicate in advance of each specific survey with OMAO, or other relevant parties, to ensure that all mitigation measures and monitoring requirements described herein, as well as the specific manner of implementation and relevant event-contingent decision-making processes, are clearly understood and agreed-upon. This may involve description of all required measures when submitting cruise instructions to OMAO or when completing contracts with external entities. PIFSC will coordinate and conduct briefings at the outset of each survey and as necessary between the ship's crew (CO/master or designee(s), as appropriate) and scientific party in order to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures. The CS will be responsible for coordination with the Officer on Deck (OOD; or equivalent on non-NOAA platforms) to ensure that requirements, procedures, and decision-making processes are understood and properly implemented.

The PIFSC will coordinate with the local Pacific Islands Regional Stranding Coordinator and the NMFS Stranding Coordinator for any unusual protected species behavior and any stranding, beached live/dead, or floating protected species that are encountered during field research activities. If a large whale (*i.e.,* baleen whale or sperm whale) is alive and entangled in fishing gear, the vessel will immediately call the U.S. Coast Guard at VHF Ch. 16 and/or the appropriate Marine Mammal Health and Stranding Response Network for instructions. All entanglements (live or dead) and vessel strikes must be reported immediately to the NOAA Fisheries Marine Mammal Stranding Hotline at 888–256–9840.

Vessel Speed—Vessel speed during active sampling rarely exceeds 5 kt, with typical speeds being 2–4 kt. Transit speeds vary from 6–14 kt but average 10 kt. These low vessel speeds minimize the potential for ship strike (see Potential Effects of the Specified Activity on Marine Mammals and Their Habitat for an in-depth discussion of ship strike). In addition, as a standard operating practice, PIFSC maintains a 100-yard (91-m) distance between research vessels and large whales whenever and wherever it conducts fisheries research activities. At any time during a survey or in transit, if a crew member or designated marine mammal observer standing watch sights marine mammals that may intersect with the vessel course that individual will immediately communicate the presence of marine mammals to the bridge for appropriate course alteration or speed reduction, as possible, to avoid incidental collisions.

Gears Not Subject to Specific Measures—The PIFSC deploys a wide variety of gear to sample the marine environment during all of their research

cruises. Many of these types of gear (*e.g.,* plankton nets, video camera and remotely-operated vehicle (ROV) deployments) are not considered to pose any risk to marine mammals and are therefore not subject to specific mitigation measures. However, at all times when the PIFSC is conducting survey operations at sea, the OOD and/or CS and crew will monitor for any unusual circumstances that may arise at a sampling site and use best professional judgment to avoid any potential risks to marine mammals during use of all research equipment.

Handling Procedures—Handling procedures are those taken to return a live animal to the sea or process a dead animal. The PIFSC will implement a number of handling protocols to minimize potential harm to marine mammals that are incidentally taken during the course of fisheries research activities. In general, protocols have already been prepared for use on commercial fishing vessels. Although commercial fisheries take larger quantities of marine mammals than fisheries research, the nature of such takes by entanglement or capture are similar. Therefore, the PIFSC would adopt commercial fishery disentanglement and release protocols (summarized below), which should increase post-release survival. Handling or disentangling marine mammals carries inherent safety risks, and using best professional judgment and ensuring human safety is paramount.

Captured or entangled live or injured marine mammals must be released from research gear and returned to the water as soon as possible with no gear or as little gear remaining on the animal as possible. Animals must be released without removing them from the water if possible, and data collection must be conducted in such a manner as not to delay release of the animal(s) or endanger the crew. PIFSC is responsible for training PIFSC and partner affiliates on how to identify different species; handle and bring marine mammals aboard a vessel; assess the level of consciousness; remove fishing gear; and return marine mammals to water. Human safety is always the paramount concern.

Trawl Survey Visual Monitoring and Operational Protocols

Visual monitoring protocols, described above, are an integral component of trawl mitigation protocols. Observation of marine mammal presence and behaviors in the vicinity of PIFSC trawl survey operations allows for the application of professional judgment in determining the appropriate course of action to minimize the incidence of marine mammal gear interactions.

The OOD, CS or other designated member of the scientific party, and crew standing watch on the bridge visually scan surrounding waters with the naked eye and rangefinding binoculars (or monocular) for marine mammals prior to, during, and until completion of all trawl operations. Some sets may be made at night or in other limited visibility conditions, when visual observation may be conducted using the naked eye, if vessel lighting is used.

Most research vessels engaged in trawling will have their station in view for 15 minutes or 2 nmi prior to reaching the station, depending upon the sea state and weather. Many vessels will inspect the tow path before deploying the trawl gear, adding another 15 minutes of observation time and gear preparation prior to deployment. Personnel on watch must monitor the station for 30 minutes prior to deploying the trawl. If personnel on watch observe marine mammals, they must immediately alert the OOD and CS as to their best estimate of the species, quantity, distance, bearing, and direction of travel relative to the ship's position. If any marine mammals are sighted around the vessel during the 30-minute pre-deployment monitoring period before setting gear, the vessel must either remain in place and wait to set until no marine mammals are sighted in a further 10-minute observation period, or move away from the animals to a different section of the sampling area if the animals appear to be at risk of interaction with the gear. This is what is referred to as the ''move-on'' rule.

If marine mammals are observed at or near the station, the CS and the vessel operator will determine the best strategy, consistent with the regulations set forth below, to avoid potential takes based on the species encountered, their numbers and behavior, their position and vector relative to the vessel, and other factors. For instance, a whale transiting through the area and heading away from the vessel may not require any move, or may require only a short move from the initial sampling site, while a pod of dolphins gathered around the vessel may require a longer move from the initial sampling site or possibly cancellation of the station if the dolphins follow the vessel. After moving on, if marine mammals are still visible from the vessel and appear to be at risk, the CS or OOD may decide, in consultation with the vessel operator, to move again or to skip the station. In many cases, the survey design can accommodate sampling at an alternate site. Gear would not be deployed if marine mammals have been sighted from the ship during the required observation period unless those animals do not appear to be in danger of interactions with the gear, as determined by the judgment of the CS and vessel operator. The efficacy of the ''move-on'' rule is limited during nighttime or other periods of limited visibility, although operational lighting from the vessel illuminates the water in the immediate vicinity of the vessel during gear setting and retrieval. In these cases, it is again the judgment of the CS or vessel operator as based on experience and in consultation with the vessel operator to exercise due diligence and to decide on appropriate course of action to avoid interactions between marine mammals and sampling gear.

Once the trawl net is in the water, the OOD, CS or other designated scientist, and/or crew standing watch continue to monitor the waters around the vessel and maintain a lookout for marine mammals as environmental conditions allow (as noted previously, visibility can be limited for various reasons). If marine mammals are sighted before the gear is fully retrieved, the OOD, in consultation with the CS and vessel operator as necessary, shall take action informed by professional judgments to avoid taking marine mammals. These judgments take into consideration the species, numbers, and behavior of the animals, the status of the trawl net operation (net opening, depth, and distance from the stern), the time it would take to retrieve the net, and safety considerations for changing speed or course. If marine mammals are sighted during haul-back operations, there is the potential for entanglement during retrieval of the net, especially when the trawl doors have been retrieved and the net is near the surface and no longer under tension. The risk of entanglement may be reduced if the trawling continues and the haul-back is delayed until after the marine mammal has lost interest in the gear or left the area. The appropriate course of action to minimize the risk of incidental take is informed by the professional judgment of the OOD, vessel operator, and the CS based on all circumstances, even if the choices compromise the value of the data collected at the station. The PIFSC must retrieve trawl gear immediately if marine mammals are believed to be captured/entangled in a net, line, or associated gear and follow disentanglement protocols.

We recognize that it is not possible to dictate in advance the exact course of action that the OOD or CS should take

in any given event involving the presence of marine mammals in proximity to an ongoing trawl tow, given the sheer number of potential variables, combinations of variables that may determine the appropriate course of action, and the need to prioritize human safety in the operation of fishing gear at sea. Nevertheless, PIFSC will account for all factors that shape both successful and unsuccessful decisions, and these details will be fed back into PIFSC training efforts and ultimately help to refine the best professional judgment that determines the course of action taken in future scenarios (see further discussion in Monitoring and Reporting).

If trawling operations have been suspended because of the presence of marine mammals, the vessel will resume trawl operations (when practicable) only when the animals are believed to have departed the area. This decision is at the discretion of the OOD/CS and is dependent on the situation. PIFSC shall conduct trawl operations as soon as is practicable upon arrival at the sampling station following visual monitoring pre-deployment. PIFSC shall implement standard survey protocols to minimize potential for marine mammal interactions, including maximum tow durations at target depth and maximum tow distance, and shall carefully empty the trawl as quickly as possible upon retrieval. Standard tow durations for midwater trawls are between 2 and 4 hours as target species (*e.g.,* pelagic stage eteline snappers) are relatively rare, and therefore longer haul times are necessary to acquire the appropriate scientific samples. However, trawl hauls will be terminated and the trawl retrieved upon the determination and professional judgment of the officer on watch, in consultation with the CS or other designated scientist and other experienced crew as necessary, that this action is warranted to avoid an incidental take of a marine mammal.

Longline Survey Visual Monitoring and Operational Protocols

Visual monitoring requirements for all longline surveys are similar to the general protocols described above for trawl surveys. Please see that section for full details of the visual monitoring protocol and the move-on rule mitigation protocol. In summary, requirements for longline surveys are to: (1) conduct visual monitoring prior to arrival on station; (2) implement the move-on rule if marine mammals are observed within the area around the vessel and may be at risk of interacting with the vessel or gear; (3) deploy gear as soon as possible upon arrival on station (depending on presence of marine mammals); and (4) maintain visual monitoring effort throughout deployment and retrieval of the longline gear. As was described for trawl gear, the OOD, CS, or personnel on watch will use best professional judgment to minimize the risk to marine mammals from potential gear interactions during deployment and retrieval of gear. If marine mammals are detected during setting operations and are considered to be at risk, immediate retrieval or suspension of operations may be warranted. If operations have been suspended because of the presence of marine mammals, the vessel will resume setting (when practicable) only when the animals are believed to have departed the area. If marine mammals are detected during retrieval operations and are considered to be at risk, haul-back may be postponed. The PIFSC must retrieve gear immediately if marine mammals are believed to be captured/entangled in a net, line, or associated gear and follow disentanglement protocols. These decisions are at the discretion of the OOD/CS and are dependent on the situation.

The 1994 amendments to the MMPA tasked NMFS with establishing monitoring programs to estimate mortality and serious injury of marine mammals incidental to commercial fishing operations and to develop Take Reduction Plans (TRPs) in order to reduce commercial fishing takes of strategic stocks of marine mammals below PBR. The False Killer Whale Take Reduction Plan (FKWTRP) was finalized in 2012 to reduce the level of mortality and serious injury of false killer whales in Hawaii-based longline fisheries for tuna and billfish (77 FR 71260, November 29, 2012). Regulatory measures in the FKWTRP include gear requirements, prohibited areas, training and certification in marine mammal handling and release, and posting of NMFS-approved placards on longline vessels. PIFSC does not conduct fisheries and ecosystem research with longline gear within any of the exclusion zones established by the FKWTRP.

Because longline research is currently conducted in conjunction with commercial fisheries, operational characteristics (*e.g.,* branchline and floatline length, hook type and size, bait type, number of hooks between floats) of the longline gear in Hawai'i, American Samoa, Guam, the Commonwealth of the Northern Marianas, or EEZs of the Pacific Insular Areas adhere to the requirements on commercial longline gear based on NMFS regulations (summarized at *https://www.fisheries.noaa.gov/pacific-islands/resources-fishing/regulation-summaries-and-compliance-guides-pacific-islands* and specified in 50 CFR parts 229, 300, 404, 600, and 665). PIFSC will adhere to the regulations detailed at the link above, and generally follow the following procedures when setting and retrieving longline gear:

- When shallow-setting anywhere and setting longline gear from the stern: Completely thawed and blue-dyed bait will be used (two 1-pound containers of blue-dye will be kept on the boat for backup). Fish parts and spent bait with all hooks removed will be kept for strategic offal discard. Retained swordfish will be cut in half at the head; used heads and livers will also be used for strategic offal discard. Setting will only occur at night and begin 1 hour after local sunset and finish 1 hour before next sunrise, with lighting kept to a minimum.
- When deep-setting north of 23° N and setting longline gear from the stern: 45 gram (g) or heavier weights will be attached within 1 m of each hook. A line shooter will be used to set the mainline. Completely thawed and blue-dyed bait will be used (two 1-pound containers of blue-dye will be kept on the boat for backup). Fish parts and spent bait with all hooks removed will be kept for strategic offal discard. Retained swordfish will be cut in half at the head; used heads and livers will also be used for strategic offal discard.
- When shallow-setting anywhere and setting longline gear from the side: Mainline will be deployed from the port or starboard side at least 1 m forward of the stern corner. If a line shooter is used, it will be mounted at least 1 m forward from the stern corner. A bird curtain will be used aft of the setting station during the set. Gear will be deployed so that hooks do not resurface. 45 g or heavier weights will be attached within 1 m of each hook.
- When deep-setting north of 23° N and setting longline gear from the side: Mainline will be deployed from the port or starboard side at least 1 m forward of the stern corner. If a line shooter is used, it will be mounted at least 1 m forward from the stern corner. A bird curtain will be used aft of the setting station during the set. Gear will be deployed so that hooks do not resurface. 45 g or heavier weights will be attached within 1 m of each hook.

Operational characteristics in non-Western Pacific Regional Fisheries Management Council areas of jurisdiction (*i.e.,* outside of the areas under NMFS jurisdiction named above) adhere to the regulations of the

applicable management agencies. These agencies include the Western and Central Pacific Fisheries Commission (WCPFC), International Commission for the Conservation of Atlantic Tunas (ICCAT), and Inter-American Tropical Tuna Commission (IATTC). These operational characteristics include specifications in WCPFC 2008, WCPFC 2007, ICCAT 2010, ICCAT 2011, IATTC 2011, and IATTC 2007.

Small Boat and Diver Operations

The following measures are carried out by the PIFSC when working in and around shallow water coral reef habitats. These measures are intended to avoid and minimize impacts to marine mammals and other protected species. Transit from the open ocean to shallow-reef survey regions (depths of < 35 m) of atolls and islands is anticipated to be no more than 3 nmi, dependent upon prevailing weather conditions and regulations. Each team conducts surveys and in-water operations with at least two divers observing for the proximity of marine mammals, a coxswain driving the small boat, and a topside spotter working in tandem. Topside spotters may also work as coxswains, depending on team assignment and boat layout. Spotters and coxswains will be tasked with specifically looking out for divers, marine mammals, and environmental hazards.

Before approaching any shoreline or exposed reef, all observers will examine the beach, shoreline, reef areas, and any other visible land areas within the line of sight for marine mammals. Divers, spotters, and coxswains must undertake consistent due diligence and take every precaution during operations to avoid interactions with any marine mammals (*e.g.,* flushing Hawaiian monk seals). Scientists, divers, and coxswains must follow the Best Management Practices (BMPs) for boat operations and diving activities. These practices include but are not limited to the following:

- Constant vigilance shall be kept for the presence of marine mammals;
- When piloting vessels, vessel operators shall alter course to remain at least 100 m from marine mammals;
- Reduce vessel speed to 10 kt or less when piloting vessels within 1 km (as visibility permits) of marine mammals;
- Marine mammals may not be encircled or trapped between multiple vessels or between vessels and the shore;
- If approached by a marine mammal (within 100 yards (91 m) for large whales (*i.e.,* baleen whale or sperm whale) and 50 yards (46 m) for all other marine mammals), put the engine in neutral and allow the animal to pass;
- Unless specifically covered under a separate NMFS research permit that allows activity in proximity to marine mammals, all in-water work, not already underway, will be postponed and must not commence until large whales are beyond 100 yards or other marine mammals are beyond 50 yards.;
- Should marine mammals enter the area while in-water work is already in progress, the activity may continue only when that activity has no reasonable expectation to adversely affect the animal(s);
- No feeding, touching, riding, or otherwise intentionally interacting with any marine mammals is permitted unless undertaken to rescue a marine mammal or otherwise authorized by another permit;
- Mechanical equipment will also be monitored to ensure no accidental entanglements occur with protected species (*e.g.,* with passive acoustic monitoring float lines, transect lines, and oceanographic equipment stabilization lines); and
- Team members will immediately respond to an entangled animal, halting operations and providing an onsite response assessment (allowing the animal to disentangle itself, assisting with disentanglement, *etc.*), unless doing so would put divers, coxswains, or other staff at risk of injury or death.

Marine Debris Research and Removal Activities

Land vehicle (trucks) operations will occur in areas of marine debris where vehicle access is possible from highways or rural/dirt roads adjacent to coastal resources. Prior to initiating any marine debris removal operations, marine debris personnel (marine ecosystem specialists) will thoroughly examine the beaches and near shore environments/waters for Hawaiian monk seals before approaching marine debris sites and initiating removal activities. Debris will be retrieved by personnel who are knowledgeable of and act in compliance with all Federal laws, rules and regulations governing wildlife in the Papahānaumokuākea Marine National Monument and MHI. This includes, but is not limited to maintaining a minimum distance of 50 yards (46 m) from all monk seals and a minimum of 100 yards (91 m) from female seals with pups.

Bottomfishing

Although take of marine mammals incidental to use of bottomfishing hook-and-line research gear is not considered likely, PIFSC intends to implement mitigation measures to reduce the risk of potential interactions and to help improve our understanding of what those risks might be for different species. These efforts will help inform the adaptive management process to determine the appropriate type of mitigation needed for research conducted with bottomfishing gear. PIFSC will implement the following mitigation measures:

- Visual monitoring for marine mammals for at least 30 minutes before gear is set and implementation of the ''move-on'' rule as described above;
- To avoid attracting any marine mammals to a bottomfishing operation, dead fish and bait will not be discarded from the vessel while actively fishing. Dead fish and bait may be discarded after gear is retrieved and immediately before the vessel leaves the sampling location for a new area;
- If a hooked fish is retrieved and it appears to the fisher that it has been damaged by a monk seal or other marine mammal, then visual monitoring will be enhanced around the vessel for the next 10 minutes. Fishing may continue during this time. If a shark is sighted, then visual monitoring would be returned to normal. If a monk seal, bottlenose dolphin, or other marine mammal is seen in the vicinity of a bottomfishing operation, then the gear would be retrieved immediately and the vessel would be moved to another sampling location where marine mammals are not present. Catch loss would be tallied on the data sheet, as would a ''move-on'' for a marine mammal; and
- If bottomfishing gear is lost while fishing, then visual monitoring will be enhanced around the vessel for the next 10 minutes. Fishing may continue during this time. If a shark is sighted, then visual monitoring would be returned to normal under the assumption that marine mammals and sharks are unlikely to co-occur. If a monk seal, bottlenose dolphin, or other marine mammal is seen in the vicinity, it would be observed until a determination can be made of whether gear is sighted attached to the animal, gear is suspected to be on the animal (*i.e.,* it demonstrates uncharacteristic behavior such as thrashing), or gear is not observed on the animal and it behaves normally. If a cetacean or monk seal is sighted with the gear attached or suspected to be attached, then the procedures and actions for incidental takes would be initiated (see Monitoring and Reporting). Gear loss would be tallied on the data sheet, as would a ''move-on'' because of a marine mammal.

Instrument and Trap Deployment

Visual monitoring requirements for instrument and trap deployments are similar to the general protocols described above for trawl and longline surveys. Please see that section for full details of the visual monitoring protocol and the move-on rule mitigation protocol. In summary, requirements for longline surveys are to: (1) conduct visual monitoring prior to arrival on station; (2) implement the move-on rule if marine mammals are observed within the area around the vessel and may be at risk of interacting with the vessel or gear; (3) deploy gear as soon as possible upon arrival on station (depending on presence of marine mammals); and (4) maintain visual monitoring effort throughout deployment and retrieval of the gear. As was described for trawl and longline gear, the OOD, CS, or personnel on watch will use best professional judgment to minimize the risk to marine mammals from potential gear interactions during deployment and retrieval of gear. If marine mammals are detected during setting operations and are considered to be at risk, immediate retrieval or suspension of operations may be warranted. If operations have been suspended because of the presence of marine mammals, the vessel will resume setting (when practicable) only when the animals are believed to have departed the area. If marine mammals are detected during retrieval operations and are considered to be at risk, haul-back may be postponed. PIFSC must retrieve gear and follow disentanglement protocols immediately if marine mammals are believed to be entangled in an instrument or trap line or associated gear. These decisions are at the discretion of the OOD/CS and are dependent on the situation.

In order to minimize the potential risk of entanglement during instrument and trap deployment, PIFSC is evaluating possible modifications to total line length and the relative length of floating line to sinking line used for stationary gear that is deployed from ships or small boats (*e.g.,* stereo-video data collection). A certain amount of extra line (or scope) is needed whenever deploying gear/instruments to the seafloor to prevent currents from moving the gear/instruments off station. If the line is floating line and there is no current then the scope will be floating on the surface. Alternatively, the scope in sinking line may gather below the water surface when currents are slow or absent. Because current speeds vary, there is a need for scope every time that gear is deployed.

Line floating on the surface presents the greatest risk for marine mammal entanglement, especially for humpback whales, because: (1) when marine mammals (*e.g.,* humpback whales) come to the surface to breathe, the floating line is more likely to become caught in their mouths or around their fins; and (2) humpback whales tend to spend most of their time near the surface, generally in the upper 150 m of the water column.

Currently, PIFSC uses only floating line to deploy stationary gear from ships or small boats. Floating line is used in order to maintain the vertical orientation of the line immediately above the instrument on the seafloor. The floating line also helps to keep the line off of the seafloor where it could snag or adversely affect benthic organisms or habitat features.

This mitigation measure would involve the use of sinking line for approximately the top one-third of the line. The other approximately lower two-thirds would still be floating line. This configuration would allow any excess scope in the line to sink to a depth where it would be below where most whales and dolphins commonly occur. Specific line lengths, and ratios of floating line to sinking line, would vary with actual depth and the total line length. This mitigation measure would not preclude the risk of whales or dolphins swimming into the submerged line, but this risk is believed to be lower relative to line floating on the surface.

Based on our evaluation of the PIFSC's proposed measures, as well as other measures considered by NMFS, NMFS has determined that the required mitigation measures provide the means of effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Monitoring and Reporting

In order to issue an incidental take authorization for an activity, section 101(a)(5)(A) of the MMPA states that NMFS must set forth ''requirements pertaining to the monitoring and reporting of such taking.'' The MMPA implementing regulations at 50 CFR 216.104 (a)(13) require that requests for incidental take authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present while conducting activities.

Monitoring and reporting requirements prescribed by NMFS should contribute to improved understanding of one or more of the following:

- Occurrence of marine mammal species or stocks in the specified geographical region (*e.g.,* presence, abundance, distribution, density);
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) action or environment (*e.g.,* source characterization, propagation, ambient noise); (2) affected species (*e.g.,* life history, dive patterns); (3) co-occurrence of marine mammal species with the action; or (4) biological or behavioral context of exposure (*e.g.,* age, calving or feeding areas);
- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors;
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks;
- Effects on marine mammal habitat (*e.g.,* marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat); and
- Mitigation and monitoring effectiveness.

PIFSC shall designate a compliance coordinator who shall be responsible for ensuring compliance with all requirements of any LOA issued pursuant to these regulations and for preparing for any subsequent request(s) for incidental take authorization.

The monitoring requirements are as follows:

Visual Monitoring

Marine mammal watches are a standard part of conducting fisheries research activities, and are implemented as described previously in the Mitigation section. Dedicated marine mammal visual monitoring occurs as described (1) for some period prior to deployment of most research gear; (2) throughout deployment and active fishing of all research gears; (3) for some period prior to retrieval of longline gear; and (4) throughout retrieval of all research gear. This visual monitoring is performed by trained PIFSC personnel or other trained crew during the monitoring period. Observers record the species and estimated number of animals present and their behaviors.

This may provide valuable information towards an understanding of whether certain species may be attracted to vessels or certain survey gears. Separately, personnel on watch (those navigating the vessel and other crew; these will typically not be PIFSC personnel) monitor for marine mammals at all times while the vessel is being operated. The primary focus for this type of watch is to avoid striking marine mammals and avoid navigational hazards. These personnel on watch typically have other duties associated with navigation and other vessel operations and are not required to record or report to the scientific party data on marine mammal sightings, except when gear is being deployed, soaking, or retrieved or when marine mammals are observed in the path of the ship during transit.

PIFSC will also monitor disturbance of hauled out pinnipeds resulting from the presence of researchers, paying particular attention to the distance at which pinnipeds are disturbed. Disturbance will be recorded according to the three-point scale, representing increasing seal response to disturbance, shown in table 14.

Training

NMFS considers the required suite of monitoring and operational procedures to be necessary to avoid adverse interactions with protected species and still allow PIFSC to fulfill its scientific missions. However, some mitigation measures such as the move-on rule require judgments about the risk of gear interactions with protected species and the best procedures for minimizing that risk on a case-by-case basis. Vessel operators and CSs are charged with making those judgments at sea. They are all highly experienced professionals but there may be inconsistencies across the range of research surveys conducted and funded by PIFSC in how those judgments are made. In addition, some of the mitigation measures described above could also be considered ''best practices'' for safe seamanship and avoidance of hazards during fishing (*e.g.,* prior surveillance of a sample site before setting trawl gear). At least for some of the research activities considered, explicit links between the implementation of these best practices and their usefulness as mitigation measures for avoidance of protected species may not have been formalized and clearly communicated with all scientific parties and vessel operators. NMFS therefore includes a series of improvements to PIFSC protected species training, awareness, and reporting procedures. NMFS expects these new procedures will facilitate and improve the implementation of the mitigation measures described above.

PIFSC will initiate a process for its CSs and vessel operators to communicate with each other about their experiences with marine mammal interactions during research work with the goal of improving decision-making regarding avoidance of adverse interactions. As noted above, there are many situations where professional judgment is used to decide the best course of action for avoiding marine mammal interactions before and during the time research gear is in the water. The intent of this mitigation measure is to draw on the collective experience of people who have been making those decisions, provide a forum for the exchange of information about what went right and what went wrong, and try to determine if there are any rules-of-thumb or key factors to consider that would help in future decisions regarding avoidance practices. PIFSC would coordinate not only among its staff and vessel captains but also with those from other fisheries science centers and institutions with similar experience.

PIFSC would also develop a formalized marine mammal training program required for all PIFSC research projects and for all crew members that may be posted on monitoring duty or handle incidentally caught marine mammals. Training programs would be conducted on a regular basis and would include topics such as monitoring and sighting protocols, species identification, decision-making factors for avoiding take, procedures for handling and documenting marine mammals caught in research gear, and reporting requirements. PIFSC will work with the Pacific Islands commercial fisheries Observer Program to customize a new marine mammal training program for researchers and ship crew. The Observer Program currently provides protected species training (and other types of training) for NMFS-certified observers placed on board commercial fishing vessels. PIFSC CSs and appropriate members of PIFSC research crews will be trained using similar monitoring, data collection, and reporting protocols for marine mammal as is required by the Observer Program. All PIFSC research crew members that may be assigned to monitor for the presence of marine mammals during future surveys will be required to attend an initial training course and refresher courses annually or as necessary. The implementation of this training program would formalize and standardize the information provided to all research crew that might experience marine mammal interactions during research activities.

For all PIFSC research projects and vessels, written cruise instructions and protocols for avoiding adverse interactions with marine mammals will be reviewed and, if found insufficient, made fully consistent with the Observer Program training materials and any guidance on decision-making that arises out of the two training opportunities described above. In addition, informational placards and reporting procedures will be reviewed and updated as necessary for consistency and accuracy. All PIFSC research cruises already include pre-sail review of marine mammal protocols for affected crew but PIFSC will also review its briefing instructions for consistency and accuracy.

Following the first year of implementation of the LOA, PIFSC will convene a workshop with Pacific Islands Regional Office (PIRO) Protected Resources Division, PIFSC fishery scientists, NOAA research vessel personnel, and other NMFS staff as appropriate to review data collection, marine mammal interactions, and refine data collection and mitigation protocols, as required. PIFSC will also coordinate with NMFS' Office of Science and Technology to ensure training and guidance related to handling procedures and data collection is consistent with other fishery science centers, where appropriate.

Handling Procedures and Data Collection

PIFSC must develop and implement standardized marine mammal handling, disentanglement, and data collection procedures. These standard procedures will be subject to approval by NMFS OPR. Improved standardization of handling procedures were discussed previously in the Mitigation section. In addition to improving marine mammal survival post-release, PIFSC believes adopting these protocols for data collection will also increase the information on which ''serious injury'' determinations (NMFS, 2012a; 2012b) are based, improve scientific knowledge about marine mammals that interact with fisheries research gear, and increase understanding of the factors that contribute to these interactions. PIFSC personnel will receive standard guidance and training on handling marine mammals, including how to identify different species, bring an individual aboard a vessel, assess the level of consciousness, remove fishing gear, return an individual to the water,

and record activities pertaining to the interaction.

PIFSC will record interaction information on their own standardized forms. To aid in serious injury determinations and comply with the current NMFS Serious Injury Guidelines, researchers will also answer a series of supplemental questions on the details of marine mammal interactions.

Finally, for any marine mammals that are killed during fisheries research activities, scientists will collect data and samples pursuant to appendix D of the PIFSC Draft Environmental Assessment, ''Protected Species Mitigation and Handling Procedures for PIFSC Fisheries Research Vessels.''

Reporting

As is normally the case, PIFSC will coordinate with the relevant stranding coordinators for any unusual marine mammal behavior and any stranding, beached live/dead, or floating marine mammals that are encountered during field research activities. The PIFSC will follow a phased approach with regard to the cessation of its activities and/or reporting of such events, as described in the regulatory text following this preamble. In addition, CSs (or vessel operators) will provide reports to PIFSC leadership and to OPR. As a result, when marine mammals interact with survey gear, whether killed or released alive, a report provided by the CS will fully describe any observations of the animals, the context (vessel and conditions), decisions made and rationale for decisions made in vessel and gear handling. The circumstances of these events are critical in enabling PIFSC and OPR to better evaluate the conditions under which takes are most likely to occur. We believe in the long term this will allow the avoidance of these types of events in the future.

The PIFSC will submit annual summary reports to OPR including:

(1) Annual line-kilometers surveyed during which the EK60, EM 300, and ADCP Ocean Surveyor (or equivalent sources) were predominant (see *Estimated Take Due to Acoustic Harassment* for further discussion), specific to each region;

(2) Summary information regarding use of all longline and trawl gear, including number of sets, tows, *etc.,* specific to each research area and gear;

(3) Accounts of surveys where marine mammals were observed during sampling but no interactions occurred;

(4) Accounts of all incidents of marine mammal interactions, including circumstances of the event and descriptions of any mitigation procedures implemented or not implemented and why;

(5) Summary information related to any disturbance of pinnipeds, including event-specific total counts of animals present, counts of reactions according to the three-point scale shown in table 14, and distance of closest approach;

(6) A written description of any mitigation research investigation efforts and findings (*e.g.,* line modifications);

(7) A written evaluation of the effectiveness of PIFSC mitigation strategies in reducing the number of marine mammal interactions with survey gear, including best professional judgment and suggestions for changes to the mitigation strategies, if any; and

(8) Details on marine mammal-related training taken by PIFSC and partner affiliates.

The period of reporting will be annually. The first annual report must cover the period from the date of issuance of the LOA through the end of that calendar year and the entire first full calendar year of the authorization. Subsequent reports would cover only 1 full calendar year. Each annual report must be submitted not less than 90 days following the end of a given year. PIFSC shall provide a final report within 30 days following resolution of comments on the draft report. Submission of this information serves an adaptive management framework function by allowing NMFS to make appropriate modifications to mitigation and/or monitoring strategies, as necessary, during the 5-year period of validity for these regulations.

NMFS has established a formal incidental take reporting system, the Protected Species Incidental Take (PSIT) database, requiring that incidental takes of protected species be reported within 48 hours of the occurrence. The PSIT generates automated messages to NMFS leadership and other relevant staff, alerting them to the event and to the fact that updated information describing the circumstances of the event has been inputted to the database. The PSIT and CS reports represent not only valuable real-time reporting and information dissemination tools but also serve as an archive of information that may be mined in the future to study why takes occur by species, gear, region, *etc.* The PIFSC is required to report all takes of protected species, including marine mammals, to this database within 48 hours of the occurrence and following standard protocol.

In the unanticipated event that PIFSC fisheries research activities cause the take of a marine mammal in a prohibited manner, PIFSC personnel engaged in the research activity shall immediately cease such activity until such time as an appropriate decision regarding activity continuation can be made by the PIFSC Director (or designee). The incident must be reported immediately to OPR and the NMFS Pacific Islands Regional Office. OPR will review the circumstances of the prohibited take and work with PIFSC to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. The immediate decision made by PIFSC regarding continuation of the specified activity is subject to OPR concurrence. The report must include the following information:

(i) Time, date, and location (latitude/longitude) of the incident;

(ii) Description of the incident including, but not limited to, monitoring prior to and occurring at time of the incident;

(iii) Environmental conditions (*e.g.,* wind speed and direction, Beaufort sea state, cloud cover, visibility);

(iv) Description of all marine mammal observations in the 24 hours preceding the incident;

(v) Species identification or description of the animal(s) involved;

(vi) Status of all sound source use in the 24 hours preceding the incident;

(vii) Water depth;

(viii) Fate of the animal(s) (*e.g.* dead, injured but alive, injured and moving, blood or tissue observed in the water, status unknown, disappeared, *etc.*); and

(ix) Photographs or video footage of the animal(s).

In the event that PIFSC discovers an injured or dead marine mammal and determines that the cause of the injury or death is unknown and the death is relatively recent (*e.g.,* in less than a moderate state of decomposition), PIFSC shall immediately report the incident to OPR and PIRO. The report must include the information identified above. Activities may continue while OPR reviews the circumstances of the incident. OPR will work with PIFSC to determine whether additional mitigation measures or modifications to the activities are appropriate.

In the event that PIFSC discovers an injured or dead marine mammal and determines that the injury or death is not associated with or related to PIFSC fisheries research activities (*e.g.,* previously wounded animal, carcass with moderate to advanced decomposition, scavenger damage), PIFSC shall report the incident to OPR and the Pacific Islands Regional Office, NMFS, within 24 hours of the discovery. PIFSC shall provide photographs or video footage or other

documentation of the stranded animal sighting to OPR.

In the event of a ship strike of a marine mammal by any PIFSC or partner vessel involved in the activities covered by the authorization, PIFSC or partner shall immediately report the information described above, as well as the following additional information:

(i) Vessel's speed during and leading up to the incident;

(ii) Vessel's course/heading and what operations were being conducted;

(iii) Status of all sound sources in use;

(iv) Description of avoidance measures/requirements that were in place at the time of the strike and what additional measures were taken, if any, to avoid strike;

(v) Estimated size and length of animal that was struck; and

(vi) Description of the behavior of the marine mammal immediately preceding and following the strike.

PIFSC will also collect and report all necessary data, to the extent practicable given the primacy of human safety and the well-being of captured or entangled marine mammals, to facilitate serious injury (SI) determinations for marine mammals that are released alive. PIFSC will require that the CS complete data forms and address supplemental questions, both of which have been developed to aid in SI determinations. PIFSC understands the critical need to provide as much relevant information as possible about marine mammal interactions to inform decisions regarding SI determinations. In addition, the PIFSC will perform all necessary reporting to ensure that any incidental M/SI is incorporated as appropriate into relevant SARs.

Negligible Impact Analysis and Determination

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

Serious Injury and Mortality

We note here that the takes from potential gear interactions enumerated below could result in non-serious injury, but their worse potential outcome (mortality) is analyzed for the purposes of the negligible impact determination.

In addition, we discuss here the connection, and differences, between the legal mechanisms for authorizing incidental take under section 101(a)(5) for activities such as those planned by PIFSC, and for authorizing incidental take from commercial fisheries. In 1988, Congress amended the MMPA's provisions for addressing incidental take of marine mammals in commercial fishing operations. Congress directed NMFS to develop and recommend a new long-term regime to govern such incidental taking (see MMC, 1994). The need to develop a system suited to the unique circumstances of commercial fishing operations led NMFS to suggest a new conceptual means and associated regulatory framework. That concept, PBR, and a system for developing plans containing regulatory and voluntary measures to reduce incidental take for fisheries that exceed PBR were incorporated as sections 117 and 118 in the 1994 amendments to the MMPA. In *Conservation Council for Hawaii* v. *National Marine Fisheries Service,* 97 F. Supp. 3d 1210 (D. Haw. 2015), which concerned a challenge to NMFS' regulations and LOAs to the Navy for activities assessed in the 2013–2018 U.S. Navy Hawaii-Southern California Training and Testing (HSTT) MMPA rulemaking, the Court ruled that NMFS' failure to consider PBR when evaluating lethal takes in the negligible impact analysis under section 101(a)(5)(A) violated the requirement to use the best available science.

PBR is defined in section 3 of the MMPA as ''the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population'' (OSP) and, although not controlling, can be one measure considered among other factors when evaluating the effects of M/SI on a marine mammal species or stock during the section 101(a)(5)(A) process. OSP is defined in section 3 of the MMPA as ''the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem of which they form a constituent element.'' An overarching goal of the MMPA is to ensure that each species or stock of marine mammal is maintained at or returned to its OSP.

PBR values are calculated by NMFS as the level of annual removal from a stock that will allow that stock to equilibrate within OSP at least 95 percent of the time, and is the product of factors relating to the minimum population estimate of the stock (N_{min}), the productivity rate of the stock at a small population size, and a recovery factor. Determination of appropriate values for these three elements incorporates significant precaution, such that application of the parameter to the management of marine mammal stocks may be reasonably certain to achieve the goals of the MMPA. For example, calculation of the minimum population estimate (N_{min}) incorporates the level of precision and degree of variability associated with abundance information, while also providing reasonable assurance that the stock size is equal to or greater than the estimate (Barlow *et al.,* 1995), typically by using the 20th percentile of a log-normal distribution of the population estimate. In general, the three factors are developed on a stock-specific basis in consideration of one another in order to produce conservative PBR values that appropriately account for both imprecision that may be estimated, as well as potential bias stemming from lack of knowledge (Wade, 1998).

Congress called for PBR to be applied within the management framework for commercial fishing incidental take under section 118 of the MMPA. As a result, PBR cannot be applied appropriately outside of the section 118 regulatory framework without consideration of how it applies within the section 118 framework, as well as how the other statutory management

frameworks in the MMPA differ from the framework in section 118. PBR was not designed and is not used as an absolute threshold limiting commercial fisheries. Rather, it serves as a means to evaluate the relative impacts of those activities on marine mammal stocks. Even where commercial fishing is causing M/SI at levels that exceed PBR, the fishery is not suspended. When M/SI exceeds PBR in the commercial fishing context under section 118, NMFS may develop a take reduction plan, usually with the assistance of a take reduction team. The take reduction plan will include measures to reduce and/or minimize the taking of marine mammals by commercial fisheries to a level below the stock's PBR. That is, where the total annual human-caused M/SI exceeds PBR, NMFS is not required to halt fishing activities contributing to total M/SI but rather utilizes the take reduction process to further mitigate the effects of fishery activities via additional bycatch reduction measures. In other words, under section 118 of the MMPA, PBR does not serve as a strict cap on the operation of commercial fisheries that may incidentally take marine mammals.

Similarly, to the extent PBR may be relevant when considering the impacts of incidental take from activities other than commercial fisheries, using it as the sole reason to deny (or issue) incidental take authorization for those activities would be inconsistent with Congress's intent under section 101(a)(5), NMFS' long-standing regulatory definition of ''negligible impact,'' and the use of PBR under section 118. The standard for authorizing incidental take for activities other than commercial fisheries under section 101(a)(5) continues to be, among other things that are not related to PBR, whether the total taking will have a negligible impact on the species or stock. Nowhere does section 101(a)(5)(A) reference use of PBR to make the negligible impact finding or to authorize incidental take through multi-year regulations, nor does its companion provision at section 101(a)(5)(D) for authorizing non-lethal incidental take under the same negligible-impact standard. NMFS' MMPA implementing regulations state that take has a negligible impact when it does not ''adversely affect the species or stock through effects on annual rates of recruitment or survival''—likewise without reference to PBR. When Congress amended the MMPA in 1994 to add section 118 for commercial fishing, it did not alter the standards for authorizing non-commercial fishing incidental take under section 101(a)(5), implicitly acknowledging that the negligible impact standard under section 101(a)(5) is separate from the PBR metric under section 118. In fact, in 1994 Congress also amended section 101(a)(5)(E) (a separate provision governing commercial fishing incidental take for species listed under the ESA) to add compliance with the new section 118 but retained the standard of the negligible impact finding under section 101(a)(5)(A) (and section 101(a)(5)(D)), showing that Congress understood that the determination of negligible impact and the application of PBR may share certain features but are, in fact, different.

Since the introduction of PBR in 1994, NMFS had used the concept almost entirely within the context of implementing sections 117 and 118 and other commercial fisheries management-related provisions of the MMPA. Prior to the Court's ruling in *Conservation Council for Hawaii* v. *National Marine Fisheries Service* and consideration of PBR in a series of section 101(a)(5) rulemakings, there were a few examples where PBR had informed agency deliberations under other MMPA sections and programs, such as playing a role in the issuance of a few scientific research permits and subsistence takings. But as a different court found when reviewing examples of past PBR consideration in *Georgia Aquarium* v. *Pritzker,* 135 F. Supp. 3d 1280 (N.D. Ga. 2015), where NMFS had considered PBR outside the commercial fisheries context, ''it has treated PBR as only one 'quantitative tool' and [has not used it] as the sole basis for its impact analyses.'' Further, the agency's thoughts regarding the appropriate role of PBR in relation to MMPA programs outside the commercial fishing context have evolved since the agency's early application of PBR to section 101(a)(5) decisions. Specifically, NMFS' denial of a request for incidental take authorization for the U.S. Coast Guard in 1996 seemingly was based on the potential for lethal take in relation to PBR and did not appear to consider other factors that might also have informed the potential for ship strike in relation to negligible impact (61 FR 54157, October 17, 1996).

The MMPA requires that PBR be estimated in SARs and that it be used in applications related to the management of take incidental to commercial fisheries (*i.e.,* the take reduction planning process described in section 118 of the MMPA and the determination of whether a stock is ''strategic'' as defined in section 3), but nothing in the statute requires the application of PBR outside the management of commercial fisheries interactions with marine mammals. Nonetheless, NMFS recognizes that as a quantitative metric, PBR may be useful as a consideration when evaluating the impacts of other human-caused activities on marine mammal stocks. Outside the commercial fishing context, and in consideration of all known human-caused mortality, PBR can help inform the potential effects of M/SI requested to be authorized under section 101(a)(5)(A). As noted by NMFS and the U.S. Fish and Wildlife Service in our implementing regulations for the 1986 amendments to the MMPA (54 FR 40341, September 29, 1989), the Services consider many factors, when available, in making a negligible impact determination, including, but not limited to, the status of the species or stock relative to OSP (if known); whether the recruitment rate for the species or stock is increasing, decreasing, stable, or unknown; the size and distribution of the population; and existing impacts and environmental conditions. In this multi-factor analysis, PBR can be a useful indicator for when, and to what extent, the agency should take an especially close look at the circumstances associated with the potential mortality, along with any other factors that could influence annual rates of recruitment or survival.

When considering PBR during evaluation of effects of M/SI under section 101(a)(5)(A), we first calculate a metric for each species or stock that incorporates information regarding ongoing anthropogenic M/SI from all sources into the PBR value (*i.e.,* PBR minus the total annual anthropogenic mortality/serious injury estimate in the SAR), which is called ''residual PBR'' (Wood *et al.,* 2012). We first focus our analysis on residual PBR because it incorporates anthropogenic mortality occurring from other sources. If the ongoing human-caused mortality from other sources does not exceed PBR, then residual PBR is a positive number, and we consider how the anticipated or potential incidental M/SI from the activities being evaluated compares to residual PBR using the framework in the following paragraph. If the ongoing anthropogenic mortality from other sources already exceeds PBR, then residual PBR is a negative number and we consider the M/SI from the activities being evaluated as described further below.

When ongoing total anthropogenic mortality from the applicant's specified activities does not exceed PBR and residual PBR is a positive number, as a simplifying analytical tool we first

consider whether the specified activities could cause incidental M/SI that is less than 10 percent of residual PBR (the ''insignificance threshold,'' see below). If so, we consider M/SI from the specified activities to represent an insignificant incremental increase in ongoing anthropogenic M/SI for the marine mammal stock in question that alone (*i.e.,* in the absence of any other take) will not adversely affect annual rates of recruitment and survival. As such, this amount of M/SI would not be expected to affect rates of recruitment or survival in a manner resulting in more than a negligible impact on the affected stock unless there are other factors that could affect reproduction or survival, such as Level A and/or Level B harassment, or other considerations such as information that illustrates uncertainty involved in the calculation of PBR for some stocks. In a few prior incidental take rulemakings, this threshold was identified as the ''significance threshold,'' but it is more accurately labeled an insignificance threshold, and so we use that terminology here, as we did in the U.S. Navy's Atlantic Fleet Training and Testing (AFTT) final rule (83 FR 57076, November 14, 2018), and 2-year rule extension (84 FR 70712, December 23, 2019), as well as the U.S. Navy's HSTT final rule (83 FR 66846, December 27, 2018) and 2-year rule extension (85 FR 41780, July 10, 2020). Assuming that any additional incidental take by Level B harassment from the activities in question would not combine with the effects of the authorized M/SI to exceed the negligible impact level, the anticipated M/SI caused by the activities being evaluated would have a negligible impact on the species or stock. However, M/SI above the 10 percent insignificance threshold does not indicate that the M/SI associated with the specified activities is approaching a level that would necessarily exceed negligible impact. Rather, the 10 percent insignificance threshold is meant only to identify instances where additional analysis of the anticipated M/SI is not required because the negligible impact standard clearly will not be exceeded on that basis alone.

Where the anticipated M/SI is near, at, or above residual PBR, consideration of other factors (positive or negative), including those outlined above, as well as mitigation is especially important to assessing whether the M/SI will have a negligible impact on the species or stock. PBR is a conservative metric and not sufficiently precise to serve as an absolute predictor of population effects upon which mortality caps would appropriately be based. For example, in some cases stock abundance (which is one of three key inputs into the PBR calculation) is underestimated because marine mammal survey data within the U.S. EEZ are used to calculate the abundance even when the stock range extends well beyond the U.S. EEZ. An underestimate of abundance could result in an underestimate of PBR. Alternatively, we sometimes may not have complete M/SI data beyond the U.S. EEZ to compare to PBR, which could result in an overestimate of residual PBR. The accuracy and certainty around the data that feed any PBR calculation, such as the abundance estimates, must be carefully considered to evaluate whether the calculated PBR accurately reflects the circumstances of the particular stock. M/SI that exceeds residual PBR or PBR may still potentially be found to be negligible in light of other factors that offset concern, especially when robust mitigation and adaptive management provisions are included.

In *Conservation Council for Hawaii* v. *National Marine Fisheries Service,* which involved the challenge to NMFS' issuance of LOAs to the Navy in 2013 for activities in the HSTT Study Area, the Court reached a different conclusion, stating, ''Because any mortality level that exceeds PBR will not allow the stock to reach or maintain its OSP, such a mortality level could not be said to have only a 'negligible impact' on the stock.'' As described above, NMFS respectfully maintains that this statement fundamentally misunderstands the two terms and incorrectly indicates that these concepts (PBR and ''negligible impact'') are directly connected, when in fact nowhere in the MMPA is it indicated that these two terms are equivalent. Moreover, this statement is not precedential, and other caselaw recognizes that PBR and ''negligible impact'' are analytically distinct. *E.g.,* Melone v. Coit, 100 F.4th 21, 31 (1st Cir. 2024).

Specifically, PBR was designed as a tool for evaluating mortality and is defined as the number of animals that can be removed while ''allowing that stock to reach or maintain its [OSP].'' OSP describes a population that falls within a range from the population level that is the largest supportable within the ecosystem to the population level that results in maximum net productivity, and thus is an aspirational management goal of the overall statute with no specific timeframe by which it should be met. PBR is designed to ensure minimal deviation from this overarching goal, with the formula for PBR typically ensuring that growth towards OSP is not reduced by more than 10 percent (or equilibrates to OSP 95 percent of the time). Given that, as applied by NMFS, PBR certainly allows a stock to ''reach or maintain its [OSP]'' in a conservative and precautionary manner—and we can therefore clearly conclude that if PBR were not exceeded, there would not be adverse effects on the affected species or stocks. Nonetheless, it is equally clear that in some cases the time to reach this aspirational OSP level could be slowed by more than 10 percent (*i.e.,* total human-caused mortality in excess of PBR could be allowed) without adversely affecting a species or stock through effects on its rates of recruitment or survival. Thus even in situations where the inputs to calculate PBR are thought to accurately represent factors such as the species' or stock's abundance or productivity rate, it is still possible for incidental take to have a negligible impact on the species or stock even where M/SI exceeds residual PBR or PBR.

As discussed above, while PBR is useful in informing the evaluation of the effects of M/SI in section 101(a)(5)(A) determinations, it is just one consideration to be assessed in combination with other factors and is not determinative. For example, as explained above, the accuracy and certainty of the data used to calculate PBR for the species or stock must be considered. And we reiterate the considerations discussed above for why it is not appropriate to consider PBR an absolute cap in the application of this guidance. Accordingly, we use PBR as a trigger for concern while also considering other relevant factors to provide a reasonable and appropriate means of evaluating the effects of potential mortality on rates of recruitment and survival, while acknowledging that it is possible to exceed PBR (or exceed 10 percent of PBR in the case where other human-caused mortality is exceeding PBR but the specified activity being evaluated is an incremental contributor, as described in the last paragraph) by some small amount and still make a negligible impact determination under section 101(a)(5)(A).

We note that on June 17, 2020, NMFS finalized new Criteria for Determining Negligible Impact under MMPA section 101(a)(5)(E). The guidance explicitly notes the differences in the negligible impact determinations required under section 101(a)(5)(E), as compared to sections 101(a)(5)(A) and 101(a)(5)(D), and specifies that the procedure in that document is limited to how the agency

conducts negligible impact analyses for commercial fisheries under section 101(a)(5)(E). In the proposed rule (86 FR 15298, March 22, 2021) (and above), NMFS has described its method for considering PBR to evaluate the effects of potential mortality in the negligible impact analysis. NMFS has reviewed the 2020 guidance and determined that our consideration of PBR in the evaluation of mortality as described above and in the proposed rule remains appropriate for use in the negligible impact analysis for the PIFSC's fisheries research activities under section 101(a)(5)(A).

Our evaluation of the M/SI for each of the species and stocks for which mortality could occur follows. By considering the maximum potential incidental M/SI in relation to PBR and ongoing sources of anthropogenic mortality, we begin our evaluation of whether the potential incremental addition of M/SI through PIFSC research activities may affect the species' or stock's annual rates of recruitment or survival. We also consider the interaction of those mortalities with incidental taking of that species or stock by harassment pursuant to the specified activity (see *Harassment* section below).

We have authorized take by M/SI over the 5-year period of validity for these regulations as indicated in table 15 below. For the purposes of the negligible impact analysis, we assume that all takes from gear interaction could potentially be in the form of M/SI.

We previously authorized the take by M/SI of marine mammals incidental to fisheries research operations conducted by the SWFSC (see 80 FR 58981 and 80 FR 68512), the NWFSC (see 83 FR 36370 and 83 FR 47135), and the Alaska Fisheries Science Center (AFSC) (see 84 FR 46788 and 84 FR 54893). However, this take would not occur to the same stocks for which we have authorized take incidental to PIFSC fisheries research operations; therefore, we do not consider M/SI takes from other science center activities. The final rule for the U.S. Navy's HSTT also authorized take of the Hawai'i stock of sperm whales by M/SI. Therefore, that authorized take by the Navy has been considered in this assessment. As used in this document, other ongoing sources of human-caused (anthropogenic) mortality refers to estimates of realized or actual annual mortality reported in the SARs and does not include authorized (but unrealized) or unknown mortality. Below, we consider the total taking by M/SI authorized for PIFSC to produce a maximum annual M/SI take level (including take of unidentified marine mammals that could accrue to any relevant stock) and compare that value to the stock's PBR value, considering ongoing sources of anthropogenic mortality (as described in footnote 4 of table 15 and in the following discussion). PBR and annual M/SI values considered in table 15 reflect the most recent information available (*i.e.,* draft 2023 SARs). In the *Harassment* section below, we consider the interaction of those mortalities with incidental taking of that species or stock by harassment pursuant to the specified activity.

TABLE 15—SUMMARY INFORMATION RELATED TO PIFSC AUTHORIZED ANNUAL TAKE BY MORTALITY OR SERIOUS INJURY AUTHORIZATION, 2025–2030

Species	Stock	Stock abundance	Authorized PIFSC M/SI take (annual) [1] [2]	Stock PBR	Stock annual M/SI	U.S. Navy HSTT authorized take by M/SI	r-PBR (PBR-stock annual M/SI) [3]	Authorized M/SI take/r-PBR (%)
Blainville's beaked whale	Hawai'i	1,132	0.2	5.6	0	0	5.6	3.6
Cuvier's Beaked whale	Hawai'i Pelagic	4,431	0.2	32	0	0	32	0.6
Bottlenose dolphin	Hawai'i Pelagic	24,669	0.6	158	0	0	158	0.4
Bottlenose dolphin [4]	All stocks except Hawai'i Pelagic.	N/A	0.4	N/A	N/A	0	N/A	N/A
False killer whale [5]	Hawai'i Pelagic or unspecified.	5,528	0.2	33	47	0	−14	N/A
Humpback whale	Hawai'i	11,278	0.4	127	27.1	0	99.9	0.4
Kogia spp. [8]	Hawai'i	42,083	0.2	257	0	0	257	0.1
Pantropical spotted dolphin [6]	all stocks	67,313	0.6	538	0	0	538	0.1
Pygmy killer whale	Hawai'i	10,328	0.2	59	0	0	59	0.3
Risso's dolphin	Hawai'i	6,979	0.2	53	0	0	53	0.4
Rough-toothed dolphin	Hawai'i	83,915	0.6	511	3.2	0	507.8	0.1
Rough-toothed dolphin	All stocks except Hawai'i	N/A	0.4	N/A	N/A	0	N/A	N/A
Short-finned pilot whale	Hawai'i	19,242	0.2	159	0.2	0	158.8	0.1
Sperm whale	Hawai'i	5,707	0.2	18	0	0.14	17.9	1.1
Spinner dolphin [7]	All stocks	665	0.4	6.2	1.0	0	5.2	7.7
Striped dolphin	All stocks	64,343	0.4	511	0	0	511	0.1

Please see table 5 and preceding text for details on estimated take by M/SI.

[1] As explained earlier in this document, gear interaction could result in mortality, serious injury, or Level A harassment. Because we do not have sufficient information to enable us to parse out these outcomes, we present such take as a pool. For purposes of this negligible impact analysis we assume a scenario in which all such takes incidental to research activities result in mortality.

[2] This column represents the total number of incidents of M/SI that could potentially accrue to the specified species or stock as a result of NMFS's fisheries research activities and is the number carried forward for evaluation in the negligible impact analysis. The take authorization is formulated as a 5-year total; the annual average is used only for purposes of negligible impact analysis. We recognize that portions of an animal may not be taken in a given year.

[3] This value represents the calculated PBR less the average annual estimate of ongoing anthropogenic mortalities (*i.e.,* total annual human-caused M/SI, which is presented in the SARs) (see table 2). For some stocks, a minimum population abundance value (and therefore PBR) is unavailable. In these cases, the proportion of estimated population abundance represented by the Level B harassment total and/or the proportion of residual PBR represented by the estimated maximum annual M/SI cannot be calculated.

[4] PBR known for Kauai and Ni'ihau and Hawaiian Islands stocks but a total PBR for multiple stocks cannot be determined.

[5] PIFSC fisheries and ecosystem research would not occur within the ranges of other specified false killer whale stocks. ''Unspecified stock'' only occurs on the high seas.

[6] Stock abundance and PBR presented only for Hawai'i Pelagic stock, which is the only stock with estimates of population and PBR.

[7] Stock abundance and PBR presented only for Hawai'i Island stock, which is the only stock with estimates of population and PBR.

[8] Stock data presented for pygmy sperm whale only; no data are available for dwarf sperm whale.

The majority of stocks that may potentially be taken by M/SI (13 of 14 stocks for which PBR values exist) fall below the insignificance threshold (*i.e.,* 10 percent of residual PBR). An additional two stocks do not have current PBR values and therefore are evaluated using other factors which are discussed later.

In this section, we first consider stocks for which the authorized M/SI falls below the insignificance threshold. Next, we consider those stocks without PBR values or known annual M/SI (bottlenose dolphin (all stocks except Hawai'i Pelagic) and rough-toothed dolphin (all stocks except Hawai'i)), as well as Hawai'i Pelagic false killer whales, which is the only stock for which annual M/SI exceeds the PBR value.

Stocks With M/SI Below the Insignificance Threshold

As noted above, for a species or stock with incidental M/SI less than 10 percent of residual PBR, we consider M/SI from the specified activities to represent an insignificant incremental increase in ongoing anthropogenic M/SI that alone (*i.e.,* in the absence of any other take and barring any other unusual circumstances) will clearly not adversely affect annual rates of recruitment and survival. In this case, as shown in table 15, the following species or stocks have authorized M/SI from PIFSC fisheries research below their insignificance threshold: Blainville's beaked whale (Hawai'i stock), Cuvier's beaked whale (Hawai'i pelagic stock), bottlenose dolphin (Hawai'i pelagic stock), humpback whale (Hawai'i stock), *Kogia* sp. (Hawaii stocks) pantropical spotted dolphin (all stocks), pygmy killer whale (Hawai'i stock), Risso's dolphin (Hawai'i stock), rough-toothed dolphin (Hawai'i stock), short-finned pilot whale (Hawai'i stock), sperm whale (Hawai'i stock), spinner dolphin (all stocks), and striped dolphin (all stocks).

For these stocks with authorized M/SI below the insignificance threshold, there are no other known factors, information, or unusual circumstances that indicate anticipated M/SI below the insignificance threshold could have adverse effects on annual rates of recruitment or survival and they are not discussed further.

Stocks With Undetermined PBR or M/SI

The Kauai/Ni'ihau, Oahu, Maui Nui (4-Islands), and Hawai'i Island stocks of bottlenose dolphins (Hawai'i Islands stock complex) were most recently assessed in the draft 2023 SARs. PBR was calculated for all four of these stocks, with values ranging from 0.6 for the Maui Nui stock to 1.0 for the Oahu and Hawai'i Island stocks. However, annual M/SI estimates are considered unknown for all four stocks (but a minimum of 0.2 for the Hawai'i Island stock), as there is no systematic monitoring of takes in nearshore fisheries that may take this species. Assuming zero annual stock M/SI (0.2 for the Hawai'i Island stock), as no other information is available, the residual PBR for each stock is equal to the PBR value for each stock, *i.e.,* 0.9 animals per year for the Kauai/Ni'ihau stock, 1.0 for the Oahu stock, 0.6 for the Maui Nui stock, and 0.8 for the Hawai'i Island stock (PBR value of 1.0 minus the minimum annual M/SI of 0.2). PIFSC cannot predict which specific stock of bottlenose dolphins may be taken by M/SI. Assuming the authorized annual average take by M/SI incidental to PIFSC fisheries research activities (0.4 per year) occurs within each stock, the take is above the insignificance threshold (*i.e.,* 10 percent of residual PBR) for all stocks. We consider qualitative information such as population dynamics and context to determine if the authorized amount of bottlenose dolphin takes from these stocks would have a negligible impact on annual rates of survival and recruitment. Marine mammals are K-selected species, meaning they have few offspring, long gestation and parental care periods, and reach sexual maturity later in life. Therefore, between years, reproduction rates vary based on age and sex class ratios. As such, population dynamics is a driver when looking at reproduction rates. We focus on reproduction here because we conservatively consider inter-stock reproduction is the primary means of recruitment for these stocks. Recent photo-identification and genetic studies off Oahu, Maui, Lanai, Kauai, Niihau, and Hawaii suggest limited movement of bottlenose dolphins between islands and offshore waters (Baird *et al.,* 2009; Martien *et al.,* 2012; Van Cise *et al.,* 2021). Several studies have purported that male bottlenose dolphins are more likely to engage in depredation or related behaviors with trawls and recreational fishing (Corkeron *et al.,* 1990; Powell & Wells, 2011) or become entangled in gear (Reynolds *et al.,* 2000; Adimey *et al.,* 2014). Male bias has also been reported for strandings with evidence of fishery interaction (Stolen *et al.,* 2007; Fruet *et al.,* 2012; Adimey *et al.,* 2014) and for *in situ* observations of fishery interaction (Corkeron *et al.,* 1990; Finn *et al.,* 2008; Powell & Wells, 2011). Therefore, we believe males (which are less likely to influence recruitment rate) are more likely at risk than females. Given reproduction is the primary means of recruitment and females play a significantly larger role in their offspring's reproductive success (also known as Bateman's Principle), the mortality of females rather than males is, in general, more likely to influence recruitment rate. PIFSC has requested, and NMFS is authorizing, two takes of bottlenose dolphins by M/SI from any stock over the course of 5 years. The average 5-year estimates of annual mortality and serious injury for bottlenose dolphins in the Hawaiian Islands EEZ is low, the stocks are not facing heavy anthropogenic pressure, and there are no identified continuous indirect stressors threatening the stock. While we cannot determine from which stock(s) the potential take by M/SI may occur, we do not expect that take by M/SI of up to two bottlenose dolphins by M/SI over 5 years from any of the identified or undefined stocks in the PIFSC research areas would adversely affect annual rates of recruitment or survival for these populations.

PIFSC has requested take of rough-toothed dolphins by M/SI from the Hawai'i stock (0.6 per year) and from all stocks other than the Hawai'i stock (0.4 per year). The authorized take by M/SI for the Hawai'i stock of rough-toothed dolphins falls below the insignificance threshold. For rough-toothed dolphins from all stocks except the Hawai'i stock, PIFSC has requested an average of 0.2 takes by M/SI per year from longline fisheries research and 0.2 takes by M/SI per year from instrument deployments. The only other defined stock of rough-toothed dolphins in the PIFSC is the American Samoa stock. PIFSC will not be conducting longline fisheries research in the ASARA, therefore no take of rough-toothed dolphins from the American Samoa stock by M/SI incidental to longline fisheries research is expected or authorized. However, rough-toothed dolphins from the American Samoa stock may be taken by M/SI from instrument deployments.

No abundance estimates are currently available for rough-toothed dolphins in U.S. EEZ waters of American Samoa. However, density estimates for rough-toothed dolphins in other tropical Pacific regions can provide a range of likely abundance estimates in this unsurveyed region. Using density estimates from other regions, NMFS has calculated a minimum abundance estimate (426–2,731 animals) and resulting PBR (3.4 to 22 animals per year) for the American Samoa stock of rough-toothed dolphins (Caretta *et al.,* 2011). Information on fishery-related mortality of cetaceans in American Samoa is limited, but the gear types used in American Samoan fisheries are responsible for marine mammal mortality and serious injury in other fisheries throughout U.S. waters. The most recent information on average incidental M/SI of rough-toothed dolphins in American Samoa is from

longline fisheries observed from 2006 to 2008 (Caretta *et al.,* 2011). During that time period, the average annual take of rough-toothed dolphins by M/SI in American Samoa was 3.6 per year. That average exceeds the lowest estimated PBR for the American Samoa stock of rough-toothed dolphins, but the potential average annual take of rough-toothed dolphins by M/SI incidental to instrument deployment (0.2 per year) is well below the insignificance threshold using the highest estimated PBR. In fact, if the 2006–2008 average fishery-related take by M/SI is still accurate, the authorized average annual take by M/SI incidental to instrument deployment falls below the insignificance threshold if the actual PBR is as low as six animals per year. Given that there is an absence of any new information on annual fishery-related M/SI or PBR, NMFS does not expect that 0.2 takes per year of the American Samoa stock of rough-toothed dolphins by M/SI would be problematic for the stock. If all 0.4 PIFSC authorized takes by M/SI per year (0.2 from longline fisheries research and 0.2 from instrument deployment) were to occur to an undescribed stock of rough-toothed dolphins, due to their extensive range throughout tropical and warm-temperate waters, NMFS also does not expect that such a small number of takes by M/SI would be problematic for populations of rough-toothed dolphins in the Pacific Ocean. Therefore, takes of rough-toothed dolphins under this LOA are not expected or likely to adversely affect the species or stock through effects on annual rates of recruitment or survival.

False Killer Whales

For this stock, PBR is currently set at 15 for U.S. waters and 33 for the broader Hawaii pelagic false killer whale management area, including areas of the high seas adjacent to the U.S. EEZ. The total annual M/SI is estimated at 47 for the broader Hawaii pelagic false killer whale management area, including annual averages of 17 within the U.S. EEZ and 30 outside the U.S. EEZ. NMFS authorizes one take by M/SI over the 5-year duration of the rule (which is 0.2 annually for the purposes of comparing to PBR and considering other effects on annual rates of recruitment and survival), which means that PBR is exceeded by 14.2.

In the commercial fisheries setting for ESA-listed marine mammals (which is similar to the non-fisheries incidental take setting, in that a negligible impact determination is required that is based on the assessment of take caused by the activity being analyzed) NMFS may find the impact of the authorized take from a specified activity to be negligible even if total human-caused mortality exceeds PBR, if the authorized mortality is less than 10 percent of PBR and management measures are being taken to address serious injuries and mortalities from the other activities causing mortality (*i.e.,* other than the specified activities covered by the incidental take authorization under consideration). When those considerations are applied in the section 101(a)(5)(A) context here, the authorized lethal take (0.2 annually) of false killer whales from the Hawaii pelagic stock is significantly less than 10 percent of PBR (in fact less than 1 percent of 33) and there are management measures in place to address M/SI from activities other than those the PIFSC is conducting (as discussed below).

Based on identical simulations as those conducted to identify Recovery Factors for PBR in Wade *et al.* (1998), but where values less than 0.1 were investigated (P. Wade, pers. comm.), we predict that where the mortality from a specified activity does not exceed Nmin * ½ Rmax * 0.013, the contemplated mortality for the specific activity will not delay the time to recovery by more than 1 percent. For this stock of false killer whales, Nmin * ½ Rmax * 0.013 = 1.08 and the annual mortality proposed for authorization is 0.2 (*i.e.,* less than 1.08), which means that the mortality authorized in this rule for HSTT activities would not delay the time to recovery by more than 1 percent.

As discussed earlier, we also take into consideration management measures in place to address M/SI caused by other activities. The Hawaii deep-set and shallow-set longline fisheries are the cause of M/SI take from fisheries interactions for false killer whales in Hawaii. There are no other known sources of anthropogenic mortality for this stock. NMFS established the False Killer Whale Take Reduction Team in 2010 and prepared an associated Take Reduction Plan to reduce the risk of M/SI via fisheries interactions. The TRP became effective December 31, 2012, with gear requirements effective February 27, 2013, including gear requirements, time-area closures, and measures to improve captain and crew response to hooked and entangled false killer whales.

In this case, 0.2 M/SI annually means the potential for one mortality in one of the 5 years and zero mortalities in 4 of the 5 years. Therefore, the PIFSC would not be contributing to the total human-caused mortality at all in four of the 5 years covered by this rule. That means that even if a false killer whale from the Hawaii pelagic stock were to be taken by PIFSC research activities, in 4 of the 5 years there could be no effect on annual rates of recruitment or survival from PIFSC-caused M/SI. Additionally, the loss of a male would have far less, if any, of an effect on population rates and absent any information suggesting that one sex is more likely to be taken than another, we can reasonably assume that there is a 50 percent chance that the single take authorized by the LOA issued under this rule would be a male, thereby further decreasing the likelihood of impacts on the population rate. In situations like this where potential M/SI is fractional, consideration must be given to the lessened impacts anticipated due to the absence of M/SI in 4 of the years and due to the fact that a single take could be of a male.

Lastly, we reiterate that PBR is a conservative metric and also not sufficiently precise to serve as an absolute predictor of population effects upon which mortality caps would appropriately be based. This is especially important given the minor difference between zero and one across the 5-year period covered by this rule, which is the smallest distinction possible when considering mortality. Wade *et al.* (1998), authors of the paper from which the current PBR equation is derived, note that ''Estimating incidental mortality in one year to be greater than the PBR calculated from a single abundance survey does not prove the mortality will lead to depletion; it identifies a population worthy of careful future monitoring and possibly indicates that mortality-mitigation efforts should be initiated.''

The information included here illustrates that the potential (and authorized) mortality is well below 10 percent (0.6 percent) of PBR, and management actions are in place to minimize fisheries interactions. More specifically, although the total human-mortality exceeds PBR, the authorized mortality for the PIFSC's specified activities would incrementally contribute less than 1 percent of that and, further, given the fact that it would occur in only 1 of 5 years and could be comprised of a male (far less impactful to the population), the potential impacts on population rates are even less. Based on all of the considerations described above, including consideration of the fact that the authorized mortality of 0.2 would not delay the time to recovery by more than 1 percent, we do not expect the potential lethal take from PIFSC activities, alone, to adversely affect the Hawaii pelagic stock of false killer whales through effects on annual rates of recruitment or survival. Nonetheless,

the fact that total human-caused mortality exceeds PBR necessitates close attention to the remainder of the impacts (*i.e.,* harassment) on the Hawaii pelagic stock of false killer whales from the PIFSC's activities to ensure that the total authorized takes would have a negligible impact on the species and stock. Therefore, this information will be considered in combination with our assessment of the impacts of authorized harassment takes later.

Harassment

As described in greater depth previously (see *Acoustic Effects*), we do not believe that PIFSC use of active acoustic sources has the likely potential to cause any effect exceeding Level B harassment of marine mammals. We have produced what we believe to be precautionary estimates of potential incidents of Level B harassment. There is a general lack of information related to the specific way that these acoustic signals, which are generally highly directional and transient, interact with the physical environment and to a meaningful understanding of marine mammal perception of these signals and occurrence in the areas where PIFSC operates. The procedure for producing these estimates, described in detail in the *Estimated Take Due to Acoustic Harassment* section, represents NMFS's best effort towards balancing the need to quantify the potential for occurrence of Level B harassment with this general lack of information. The sources considered here have moderate to high output frequencies, generally short ping durations, and are typically focused (highly directional with narrower beamwidths) to serve their intended purpose of mapping specific objects, depths, or environmental features. In addition, some of these sources can be operated in different output modes (*e.g.,* energy can be distributed among multiple output beams) that may lessen the likelihood of perception by and potential impacts on marine mammals in comparison with the quantitative estimates that guide our take authorization. We also produced estimates of incidents of potential Level B harassment due to disturbance of hauled out Hawaiian monk seals that may result from the physical presence of researchers; these estimates are combined with the estimates of Level B harassment that may result from use of active acoustic devices. The estimated take by Level B harassment in each research area is calculated using the total planned research effort over the course of 5 years. In order to assess the authorized take on an annual basis, the total estimated take has been divided by five.

TABLE 16—TOTAL AUTHORIZED TAKE BY LEVEL B HARASSMENT IN THE HARA

Species	Stock	Stock abundance	HARA Level B 5-year take	HARA Level B average annual take [a]	Annual percent of stock
Blainville's beaked whale	Hawai'i Pelagic	1,132	208	42	3.7
Bottlenose dolphin	Hawai'i Pelagic	24,669	189	38	0.2
	Kauai and Ni'ihau	112			33.8
	Oahu	112			33.8
	Maui Nui Region	64			59.1
	Hawai'i Island	136			27.8
Cuvier's beaked whale	Hawai'i	4,431	73	15	0.3
Dwarf sperm whale	Hawai'i	Unknown	1,730	346	N/A
False killer whale	Hawai'i Insular	138	218	44	31.6
	Northwestern Hawaiian Islands	477	339	68	14.2
	Hawai'i pelagic	5,528	145	29	0.5
Fraser's dolphin	Hawai'i	40,960	442	88	0.2
Hawaiian monk seal	Hawai'i	1,564	[b] 1,079	[c] 216	13.8
Killer whale	Hawai'i	161	6	1	0.6
Longman's beaked whale	Hawai'i	2,550	753	151	5.9
Melon-headed whale	Hawaiian Islands	40,647	74	15	0.0
	Kohala	447	30	6	1.3
Pantropical spotted dolphin	Hawai'i pelagic	67,313	490	98	0.1
	Oahu	Unknown			N/A
	Maui Nui Region	Unknown			N/A
	Hawai'i Island	Unknown			N/A
Pygmy killer whale	Hawai'i	10,328	91	18	0.2
Pygmy sperm whale	Hawai'i	42,083	705	141	0.3
Risso's dolphin	Hawai'i	6,979	1,148	230	3.3
Rough-toothed dolphin	Hawai'i	83,915	623	125	0.1
Short-finned pilot whale	Hawai'i	19,242	1,931	386	2.0
Sperm whale	Hawai'i	5,707	451	90	1.6
Spinner dolphin	Hawai'i pelagic	Unknown	210	42	N/A
	Kauai and Ni'ihau	601			7.0
	Oahu/4-Island Region	355			11.8
	Hawai'i Island	665			6.3
	Kure and Midway Atoll	260			16.2
	Pearl and Hermes Reef	Unknown			N/A
Striped dolphin	Hawai'i Pelagic	64,343	525	105	0.2
Unidentified beaked whale	N/A	N/A	283	57	N/A
Unidentified *Mesoplodon*	N/A	N/A	458	92	N/A

[a] Annual take by Level B harassment is calculated by dividing the 5-year total estimated take by five, rounded to nearest whole number.
[b] 79 takes incidental to use of acoustic sources, 1,000 takes incidental to disturbance from human presence.
[c] 16 takes incidental to use of acoustic sources, 200 takes incidental to disturbance from human presence (maximum potential annual take from physical disturbance).

With the exception of the American Samoa stocks of spinner dolphins, rough-toothed dolphins, and false killer whales, marine mammals in the MARA, ASARA, and WCPRA are not assigned to stocks, and no current abundance estimates are available for these stocks or populations. Therefore, rather than presenting the authorized takes by Level B harassment as proportions of relevant stocks, the authorized take in these

three research areas is grouped in table 17 by species.

TABLE 17—TOTAL AUTHORIZED TAKE BY LEVEL B HARASSMENT IN THE MARA, ASARA, AND WCPRA

Species	MARA 5-year take	MARA annual take	ASARA 5-year take	ASARA annual take	WCPRA 5-year take	WCPRA annual take	All areas 5-year total take	All areas annual take[a]
Blainville's beaked whale	123	25	0	0	91	18	214	43
Bottlenose dolphin	6	1	82	16	85	17	173	35
Cuvier's beaked whale	43	9	31	6	32	6	106	21
Deraniyagala's beaked whale	0	0	0	0	32	6	32	6
Dwarf sperm whale	1,020	204	749	150	754	151	2,523	505
False killer whale	159	32	[b]10	[b]2	107	21	276	55
Fraser's dolphin	283	57	0	0	283	57	451	90
Hawaiian monk seal	0	0	0	0	0	0	0	0
Killer whale	4	1	4	1	4	1	12	3
Longman's beaked whale	0	0	0	0	328	66	328	66
Melon-headed whale	73	15	0	0	73	15	146	29
Pantropical spotted dolphin	271	54	214	43	221	44	706	141
Pygmy killer whale	7	1	0	0	41	8	48	10
Pygmy sperm whale	416	83	0	0	307	61	723	145
Risso's dolphin	30	6	0	0	500	100	530	106
Rough-toothed dolphin	38	8	[b]272	[b]54	281	56	591	118
Short-finned pilot whale	227	45	836	167	841	168	1,904	381
Sperm whale	175	35	195	39	197	39	567	113
Spinner dolphin	120	24	[b]44	[b]9	105	21	269	54
Striped dolphin	74	15	0	0	237	47	311	62
Unidentified beaked whale	167	33	123	25	123	25	413	83
Unidentified *Mesoplodon*	0	0	0	0	0	0	0	0

[a] Annual take by Level B harassment is calculated by dividing the 5-year total estimated take by five, rounded to nearest whole number.
[b] American Samoa stock; stock abundance unknown.

The acoustic sources planned to be used by PIFSC are generally of low source level, higher frequency, and narrow beamwidth. As described previously, there is some minimal potential for temporary effects to hearing for certain marine mammals, but most effects would likely be limited to temporary behavioral disturbance. Effects on individuals that are taken by Level B harassment will likely be limited to reactions such as increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring), reactions that are considered to be of low severity (*e.g.,* Ellison *et al.,* 2012). Individuals may move away from the source if disturbed; however, because the source is itself moving and because of the directional nature of the sources considered here, there is unlikely to be even temporary displacement from areas of significance and any disturbance would be of short duration. The areas ensonified above the Level B harassment threshold during PIFSC surveys are extremely small relative to the overall survey areas. Although there is no information on which to base any distinction between incidents of harassment and individuals harassed, the same factors, in conjunction with the fact that PIFSC survey effort is widely dispersed in space and time, indicate that repeated exposures of the same individuals would be very unlikely. The short term, minor behavioral responses that may occur incidental to PIFSC use of acoustic sources, are not expected to result in impacts the reproduction or survival of any individuals, much less have an adverse impact on the population.

Similarly, disturbance of hauled out Hawaiian monk seals by researchers (expected in the HARA) are expected to be infrequent and cause only a temporary disturbance on the order of minutes. Monitoring results from other activities involving the disturbance of pinnipeds and relevant studies of pinniped populations that experience more regular vessel disturbance indicate that individually significant or population level impacts are unlikely to occur. PIFSC's nearshore surveys that may result in disturbance to Hawaiian monk seals are conducted infrequently, with each individual island visited at most once per year. While there is some slight possibility of an individual Hawaiian monk seal moving between islands and being exposed to visual disturbance from multiple PIFSC surveys over the course of the year, it is unlikely that an individual seal would be harassed more than once per year. When considering the individual animals likely affected by this disturbance, only a small fraction of the estimated population abundance of the affected stocks would be expected to experience the disturbance. Therefore, the PIFSC activity cannot be reasonably expected to, and is not reasonably likely to, adversely affect species or stocks through effects on annual rates of recruitment or survival.

For these reasons, we do not consider the authorized level of take by acoustic or visual disturbance to represent a significant additional population stressor when considered in context with the authorized level of take by M/SI for any species, including those for which no abundance estimate is available.

Conclusions

In summary, as described in the *Serious Injury and Mortality* section, the authorized takes by serious injury or mortality from PIFSC activities, alone, are unlikely to adversely affect any species or stock through effects on annual rates of recruitment or survival. Further, the low severity and magnitude of expected Level B harassment is not predicted to affect the reproduction or survival of any individual marine mammals, much less the rates of recruitment or survival of any species or stock. Therefore, the authorized Level B harassment, alone or in combination with the SI/M authorized for some species or stocks, will result in a negligible impact on the effected stocks and species.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the required monitoring and mitigation measures, we find that the total marine mammal take from the planned

activities will have a negligible impact on the affected marine mammal species or stocks.

Small Numbers

As noted previously, only take of small numbers of marine mammals may be authorized under sections 101(a)(5)(A) and (D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the maximum number of individuals taken in any year to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. When the predicted maximum annual number of individuals to be taken is fewer than one-third of the species or stock abundance, the take is considered to be of small numbers. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

Please see tables 15 through 17 for information relating to this small numbers analysis. The total amount of taking authorized is less than 5 percent for a majority of stocks, and the total amount of taking authorized is less than one-third of the stock abundance for all defined stocks, with the exception of three of the five stocks in the bottlenose dolphin stock complex. However, these calculated values assume that all estimated take by Level B harassment would occur to each of the stocks individually, as estimated take by Level B harassment cannot be attributed to specific stocks. The population abundance of the Hawaii Pelagic stock is dramatically greater than is the estimated abundance of the four insular stocks (Kauai and Niihau, Oahu, Maui Nui, and Hawaii Island), comprising 98 percent of the combined abundance of all bottlenose dolphin stocks. Therefore, it is extremely unlikely that the full annual average Level B harassment value of 38 would accrue to any of the four insular stocks in any given year, and on this basis we find that the expected taking of any of these stocks would be of no more than small numbers.

Species without defined stocks typically range across very large areas and it is unlikely that PIFSC's planned activities, with their small impact areas, would encounter, much less take more than one third of the stock. For species with defined stocks but no abundance estimates available (American Samoa stocks of false killer whale, rough-toothed dolphin, and spinner dolphin), we note that the anticipated number of incidents of take by Level B harassment are very low for each species (*i.e.,* 2–54 takes by Level B harassment per year). While abundance information is not available for these stocks, we do not expect that the authorized annual take by Level B harassment would represent more than one third of any population to be taken and therefore the total amount of authorized taking would be considered small relative to the overall population size.

Based on the analysis contained herein of the planned activity (including the required mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS finds that no more than small numbers of marine mammals will be taken relative to the population size of the affected species or stocks.

Unmitigable Adverse Impact Analysis and Determination

There are no relevant subsistence uses of the affected marine mammal stocks or species implicated by the issuance of regulations to the PIFSC. Therefore, NMFS has determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Adaptive Management

The regulations governing the take of marine mammals incidental to PIFSC fisheries research survey operations would contain an adaptive management component. The inclusion of an adaptive management component will be both valuable and necessary within the context of 5-year regulations for activities that have been associated with marine mammal mortality.

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

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

National Environmental Policy Act

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*) and NOAA Administrative Order (NAO) 216–6A, NMFS must evaluate our proposed action (*i.e.,* the promulgation of regulations and subsequent issuance of incidental take authorization) and alternatives with respect to potential impacts on the human environment.

Accordingly, NMFS prepared a Programmatic Environmental Assessment (PEA) to consider the environmental impacts associated with the issuance of the regulations and LOA to the PIFSC. In 2023, NMFS issued the Final PEA for Fisheries and Ecosystem Research Conducted and Funded by the Pacific Islands Fisheries Science Center and signed a Finding of No Significant Impact (FONSI). The documents can be found at: *https://www.fisheries.noaa.gov/action/incidental-take-authorization-noaa-fisheries-pifsc-fisheries-and-ecosystem-research.*

Endangered Species Act (ESA)

Section 7(a)(2) of the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*) requires that each Federal agency insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the issuance of incidental take authorizations, NMFS consults internally whenever we propose to authorize take for endangered or threatened species, in this case with the Pacific Islands Regional Office.

The NMFS Pacific Islands Regional Office issued a Biological Opinion under section 7 of the ESA, on the issuance of an LOA to the PIFSC under section 101(a)(5)(A) of the MMPA by the NMFS Office of Protected Resources. The Biological Opinion concluded that the action is not likely to jeopardize the continued existence of any endangered

or threatened species or result in the destruction or adverse modification of designated critical habitat.

Classification

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

Pursuant to section 605(b) of the Regulatory Flexibility Act (RFA), the Chief Counsel for Regulation of the Department of Commerce certified to the Chief Counsel for Advocacy of the Small Business Administration at the proposed rule stage that this action will not have a significant economic impact on a substantial number of small entities. PIFSC is the sole entity that would be subject to the requirements of these regulations, and the PIFSC is not a small governmental jurisdiction, small organization, or small business, as defined by the RFA. No comments were received regarding this certification or on the economic impacts of the rule more generally. As a result, a regulatory flexibility analysis is not required and none has been prepared.

This rule does not contain a collection-of-information requirement subject to the provisions of the Paperwork Reduction Act (PRA) because the applicant is a Federal agency. Notwithstanding any other provision of law, no person is required to respond to nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the PRA unless that collection of information displays a currently valid OMB control number. These requirements have been approved by OMB under control number 0648–0151 and include applications for regulations, subsequent LOAs, and reports.

Waiver of Delay in Effective Date

NMFS has determined that there is good cause under the Administrative Procedure Act (5 U.S.C. 553(d)(3)) to waive the 30-day delay in the effective date of this final rule. No individual or entity other than the PIFSC is affected by the provisions of these regulations.

The waiver of the 30-day delay of the effective date of the final rule will ensure that the MMPA final rule and LOA are in place as soon as possible to ensure the PIFSC's compliance with the MMPA. Any delay in finalizing the rule would result in either: (1) A suspension of planned research, which would disrupt the provision of vital data necessary for effective management of fisheries; or (2) the PIFSC's procedural non-compliance with the MMPA (should the PIFSC conduct research without an LOA), thereby resulting in the potential for unauthorized takes of marine mammals. Moreover, the PIFSC is ready to implement the regulations immediately and requested the waiver. For these reasons, NMFS finds good cause to waive the 30-day delay in the effective date. In addition, the rule authorizes incidental take of marine mammals that would otherwise be prohibited under the statute. Therefore, by granting an exception to the PIFSC, the rule will relieve restrictions under the MMPA, which provides a separate basis for waiving the 30-day effective date for the rule.

List of Subjects in 50 CFR Part 219

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

Dated: May 7, 2025.

Samuel D. Rauch, III,

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

For reasons set forth in the preamble, NMFS amends 50 CFR part 219 as follows:

PART 219—REGULATIONS GOVERNING THE TAKING AND IMPORTING OF MARINE MAMMALS

■ 1. The authority citation for part 219 continues to read as follows:

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

■ 2. As of May 16, 2025, the sunset date of January 15, 2026, for part 219 added at 86 FR 3868, Jan. 15, 2021, is removed.

Subparts E and F [Reserved]

■ 3. Reserve subparts E and F.

■ 4. Effective May 16, 2025 through May 15, 2030, add subpart G to part 219 to read as follows:

Subpart G—Taking Marine Mammals Incidental to Pacific Islands Fisheries Science Center Fisheries Research

Sec.

Subpart G—Taking Marine Mammals Incidental to Pacific Islands Fisheries Science Center Fisheries Research

§ 219.61 Specified activity and specified geographical region.

(a) Regulations in this subpart apply only to the National Marine Fisheries Service's (NMFS) Pacific Islands Fisheries Science Center (PIFSC) and those persons it authorizes or funds to conduct activities on its behalf for the taking of marine mammals that occurs in the areas outlined in paragraph (b) of this section and that occurs incidental to research survey program operations.

(b) The taking of marine mammals by PIFSC may be authorized in a Letter of Authorization (LOA) only if it occurs during fishery research within the Hawaiian Archipelago, Mariana Archipelago, American Samoa Archipelago, and Western and Central Pacific Ocean.

§ 219.62 Effective dates.

Regulations in this subpart are effective from May 16, 2025 through May 15, 2030.

§ 219.63 Permissible methods of taking.

Under LOAs issued pursuant to §§ 216.106 of this chapter and 219.67, the Holder of the LOA (hereinafter ''PIFSC'') may incidentally, but not intentionally, take marine mammals within the area described in § 219.61(b) in the following ways, provided PIFSC is in compliance with all terms, conditions, and requirements of the regulations in this subpart and the appropriate LOA.

(a) By Level B harassment associated with physical or visual disturbance of hauled out pinnipeds.

(b) By Level B harassment associated with use of active acoustic systems.

(c) By Level A harassment, serious injury, or mortality provided the take is associated with the use of longline gear, trawl gear, or deployed instruments and traps.

§ 219.64 Prohibitions.

Except for the takings described in §§ 219.61 and authorized by a LOA issued under 216.106 of this chapter and this subpart, it shall be unlawful for any person to do any of the following in connection with the activities described in § 219.61:

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

(b) Take any marine mammal species or stock not specified in such LOA;

(c) Take any marine mammal in any manner other than as specified in the LOA;

(d) Take a marine mammal specified in such LOA after NMFS determines such taking results in more than a negligible impact on the species or stocks of such marine mammal; or

(e) Take a marine mammal specified in such LOA after NMFS determines such taking results in an unmitigable adverse impact on the species or stock of such marine mammal for taking for subsistence uses.

§ 219.65 Mitigation requirements.

When conducting the activities identified in § 219.61(a), the mitigation measures contained in any LOA issued under §§ 216.106 of this chapter and 219.67 must be implemented. These mitigation measures shall include but are not limited to:

(a) *General conditions.* (1) PIFSC shall take all necessary measures to coordinate and communicate in advance of each specific survey with the National Oceanic and Atmospheric Administration's (NOAA) Office of Marine and Aviation Operations (OMAO) or other relevant parties on non-NOAA platforms to ensure that all mitigation measures and monitoring requirements described herein, as well as the specific manner of implementation and relevant event-contingent decision-making processes, are clearly understood and agreed upon. Although these regulations do not always explicitly reference those with decision making authority from cooperative platforms, all mitigation measures apply with equal force to non-NOAA vessels and personnel as they do to NOAA vessels and personnel.

(2) PIFSC shall coordinate and conduct briefings at the outset of each survey and as necessary between the ship's crew (Commanding Officer or designee(s), as appropriate) and scientific party in order to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures.

(3) PIFSC shall coordinate as necessary on a daily basis during survey cruises with OMAO personnel or other relevant personnel on non-NOAA platforms to ensure that requirements, procedures, and decision-making processes are understood and properly implemented.

(4) PIFSC shall conduct monitoring for marine mammals when deploying any type of sampling gear at sea and take action to prevent and minimize any take of marine mammals by deployed sampling gear.

(5) PIFSC shall implement handling and/or disentanglement protocols as specified in the guidance that shall be provided to PIFSC survey personnel.

(b) *Vessel strike avoidance.* (1) PIFSC must maintain a 100-meter (m) separation distance between research vessels and large whales (*i.e.,* baleen whales and sperm whales) at all times. At any time during a survey or transit, if a crew member or designated marine mammal observer standing watch sights marine mammals that may intersect with the vessel course that individual must immediately communicate the presence of marine mammals to the bridge, and the vessel must take any necessary action to avoid incidental collisions.

(2) PIFSC must reduce vessel speed to 10 knots (kt) or less when piloting vessels within 1 kilometer (km; as visibility permits) of marine mammals.

(c) *Trawl survey protocols.* (1) PIFSC shall conduct trawl operations as soon as is practicable upon arrival at the sampling station.

(2) PIFSC shall initiate marine mammal watches (visual observation) at least 30 minutes prior to beginning of net deployment, but shall also conduct monitoring during any pre-set activities including trackline reconnaissance, conductivity, temperature, and depth (CTD) casts, and plankton or bongo net hauls. Marine mammal watches shall be conducted by scanning the surrounding waters with the naked eye and rangefinding binoculars (or monocular). During nighttime operations, visual observation shall be conducted using the naked eye and available vessel lighting.

(3) PIFSC shall implement the move-on rule mitigation protocol, as described in this paragraph. If one or more marine mammals are observed within 500 m of the sampling station in the 10 minutes before setting the trawl gear, and are considered at risk of interacting with the vessel or research gear, or appear to be approaching the vessel and are considered at risk of interaction, the PIFSC shall either remain onsite or move on to another sampling location. If remaining onsite, the set shall be delayed. If the animals depart or appear to no longer be at risk of interacting with the vessel or gear, a further 10 minute observation period shall be conducted. If no further observations are made or the animals still do not appear to be at risk of interaction, then the set may be made. If the vessel is moved to a different section of the sampling area, the move-on rule mitigation protocol would begin anew. If, after moving on, marine mammals remain at risk of interaction, the PIFSC shall move again or skip the station. Marine mammals that are sighted further than 500 m from the vessel shall be monitored to determine their position and movement in relation to the vessel to determine whether the move-on rule mitigation protocol should be implemented. PIFSC may use best professional judgment in making these decisions.

(4) PIFSC shall maintain visual monitoring effort during the entire period of time that trawl gear is in the water (*i.e.,* throughout gear deployment, fishing, and retrieval). If marine mammals are sighted before the gear is fully removed from the water, PIFSC shall take the most appropriate action to avoid marine mammal interaction. PIFSC may use best professional judgment in making this decision. PIFSC must retrieve gear immediately if there is any indication marine mammals are captured or entangled in a net or associated gear (*e.g.,* lazy line) and follow disentanglement protocols approved by the NMFS Office of Protected Resources (OPR).

(5) If trawling operations have been suspended because of the presence of marine mammals, PIFSC may resume trawl operations when practicable only when the animals are believed to have departed the area. PIFSC may use best professional judgment in making this determination.

(6) PIFSC shall implement standard survey protocols to minimize potential for marine mammal interactions, including maximum tow durations at target depth and maximum tow distance, and shall carefully empty the trawl as quickly as possible upon retrieval.

(7) Dead fish and bait shall not be discarded from the vessel while actively fishing. Dead fish and bait shall be discarded after gear is retrieved and immediately before the vessel leaves the sampling location for a new area.

(d) *Longline survey protocols.* (1) PIFSC shall deploy longline gear as soon as is practicable upon arrival at the sampling station.

(2) PIFSC shall initiate marine mammal watches (visual observation) no less than 30 minutes (or for the duration of transit between set locations, if shorter than 30 minutes) prior to both deployment and retrieval of longline gear. Marine mammal watches shall be conducted by scanning the surrounding waters with the naked eye and rangefinding binoculars (or monocular). During nighttime operations, visual observation shall be conducted using the naked eye and available vessel lighting.

(3) PIFSC shall implement the move-on rule mitigation protocol, as described

in this paragraph. If one or more marine mammals are observed in the vicinity of the planned location before gear deployment, and are considered at risk of interacting with the vessel or research gear, or appear to be approaching the vessel and are considered at risk of interaction, PIFSC shall either remain onsite or move on to another sampling location. If remaining onsite, the set shall be delayed. If the animals depart or appear to no longer be at risk of interacting with the vessel or gear, a further observation period shall be conducted. If no further observations are made or the animals still do not appear to be at risk of interaction, then the set may be made. If the vessel is moved to a different section of the sampling area, the move-on rule mitigation protocol would begin anew. If, after moving on, marine mammals remain at risk of interaction, the PIFSC shall move again or skip the station. Marine mammals that are sighted shall be monitored to determine their position and movement in relation to the vessel to determine whether the move-on rule mitigation protocol should be implemented. PIFSC may use best professional judgment in making these decisions. PIFSC must retrieve gear immediately if marine mammals are believed to be captured/entangled in a net, line, or associated gear and follow disentanglement protocols approved by the NMFS OPR.

(4) PIFSC shall maintain visual monitoring effort during the entire period of gear deployment and retrieval. If marine mammals are sighted before the gear is fully deployed or retrieved, PIFSC shall take the most appropriate action to avoid marine mammal interaction. PIFSC may use best professional judgment in making this decision.

(5) If deployment or retrieval operations have been suspended because of the presence of marine mammals, PIFSC may resume such operations when practicable only when the animals are believed to have departed the area. PIFSC may use best professional judgment in making this decision.

(6) When conducting longline research in Hawai'i, American Samoa, Guam, the Commonwealth of the Northern Marianas, or exclusive economic zone (EEZs) of the Pacific Insular Areas, PIFSC shall adhere to the requirements on commercial longline gear as specified in 50 CFR parts 229, 300, 404, 600, and 665, and shall adhere to the following procedures when setting and retrieving longline gear:

(i) When shallow-setting anywhere and setting longline gear from the stern, completely thawed and blue-dyed bait shall be used (two 1-pound containers of blue-dye shall be kept on the boat for backup). Fish parts and spent bait with all hooks removed shall be kept for strategic offal discard. Retained swordfish shall be cut in half at the head; used heads and livers shall also be used for strategic offal discard. Setting shall only occur at night and begin 1 hour after local sunset and finish 1 hour before next sunrise, with lighting kept to a minimum.

(ii) When deep-setting north of 23° N and setting longline gear from the stern, 45 gram (g) or heavier weights shall be attached within 1 m of each hook. A line shooter shall be used to set the mainline. Completely thawed and blue-dyed bait shall be used (two 1-pound containers of blue-dye shall be kept on the boat for backup). Fish parts and spent bait with all hooks removed shall be kept for strategic offal discard. Retained swordfish shall be cut in half at the head; used heads and livers shall also be used for strategic offal discard.

(iii) When shallow-setting anywhere and setting longline gear from the side, mainline shall be deployed from the port or starboard side at least 1 m forward of the stern corner. If a line shooter is used, it shall be mounted at least 1 m forward from the stern corner. A bird curtain shall be used aft of the setting station during the set. Gear shall be deployed so that hooks do not resurface. Forty-five g or heavier weights shall be attached within 1 m of each hook.

(iv) When deep-setting north of 23° N and setting longline gear from the side, mainline shall be deployed from the port or starboard side at least 1 m forward of the stern corner. If a line shooter is used, it shall be mounted at least 1 m forward from the stern corner. A specified bird curtain shall be used aft of the setting station during the set. Gear shall be deployed so that hooks do not resurface. Forty-five g or heavier weights shall be attached within 1 m of each hook.

(7) Dead fish and bait shall not be discarded from the vessel while actively fishing. Dead fish and bait shall be discarded after gear is retrieved and immediately before the vessel leaves the sampling location for a new area.

(e) *Small boat and diver protocols.* (1) Surveys and in-water operations shall be conducted with at least two divers observing for the proximity of marine mammals, a coxswain driving the small boat, and a topside spotter. Spotters and coxswains shall look out for divers, marine mammals, and environmental hazards. Topside spotters may also work as coxswains, depending on team assignment and boat layout.

(2) Before approaching any shoreline or exposed reef, all observers shall examine any visible land areas for the presence of marine mammals. Scientists, divers, and coxswains shall follow best management practices (BMPs) for boat operations and diving activities, including:

(i) Maintain constant vigilance for the presence of marine mammals.

(ii) Marine mammals shall not be encircled or trapped between multiple vessels or between vessels and the shore.

(iii) If approached by a marine mammal, the engine shall be put in neutral and the animal allowed to pass.

(iv) All in-water work not already underway shall be postponed until whales are beyond 100 yards or other marine mammals are beyond 50 yards from the vessel or diver, unless the work is covered under a separate permit that allows activity in proximity to marine mammals. Activity shall commence only after the animal(s) depart the area.

(v) If marine mammals enter the area while in-water work is already in progress, the activity may continue only when that activity has no reasonable expectation to adversely affect the animal(s). PIFSC may use best professional judgment in making this decision.

(vi) Personnel shall make no attempt to feed, touch, ride, or otherwise intentionally interact with any marine mammals unless undertaken to rescue a marine mammal or otherwise authorized by another permit.

(vii) Mechanical equipment shall be monitored to ensure no entanglements occur with protected species.

(viii) Team members shall immediately respond to an entangled animal, halting operations and providing an onsite response assessment (allowing the animal to disentangle itself, assisting with disentanglement, *etc.*), unless doing so would compromise human safety.

(f) *Marine debris research and removal protocols.* (1) Prior to initiating any marine debris removal operations, marine debris personnel shall thoroughly examine the beaches and near shore environments/waters for Hawaiian monk seals before approaching marine debris sites and initiating removal activities.

(2) Debris shall be retrieved in compliance with all Federal laws, rules, and regulations governing wildlife in the area. Debris removal shall occur a minimum distance of 50 yards from all monk seals and a minimum of 100 yards from female seals with pups.

(g) *Bottomfishing protocols.* (1) PIFSC shall initiate marine mammal watches

(visual observation) no less than 30 minutes (or for the duration of transit between set locations, if shorter than 30 minutes) prior to both deployment and retrieval of bottomfishing hook-and-line gear. Marine mammal watches shall be conducted by scanning the surrounding waters with the naked eye and rangefinding binoculars (or monocular). During nighttime operations, visual observation shall be conducted using the naked eye and available vessel lighting.

(2) PIFSC shall implement the move-on rule mitigation protocol, as described in this paragraph. If one or more marine mammals are observed in the vicinity of the planned location before gear deployment, and are considered at risk of interacting with the vessel or research gear, or appear to be approaching the vessel and are considered at risk of interaction, PIFSC shall either remain onsite or move on to another sampling location. If remaining onsite, the set shall be delayed. If the animals depart or appear to no longer be at risk of interacting with the vessel or gear, a further observation period shall be conducted. If no further observations are made or the animals still do not appear to be at risk of interaction, then the set may be made. If the vessel is moved to a different section of the sampling area, the move-on rule mitigation protocol would begin anew. If, after moving on, marine mammals remain at risk of interaction, the PIFSC shall move again or skip the station. Marine mammals that are sighted shall be monitored to determine their position and movement in relation to the vessel to determine whether the move-on rule mitigation protocol should be implemented. PIFSC may use best professional judgment in making these decisions.

(3) Dead fish and bait shall not be discarded from the vessel while actively fishing. Dead fish and bait shall be discarded after gear is retrieved and immediately before the vessel leaves the sampling location for a new area.

(4) If a hooked fish is retrieved and it appears to the fisher (based on best professional judgment) that it has been damaged by a marine mammal, visual monitoring shall be enhanced around the vessel for the next 10 minutes. Fishing may continue during this time. If a shark is sighted, visual monitoring may return to normal. If a marine mammal is seen in the vicinity of a bottomfishing operation, the gear shall be retrieved immediately and the vessel shall move to another sampling location where marine mammals are not present. Catch loss and a ''move on'' for marine mammals shall be tallied on the data sheet.

(5) If bottomfishing gear is lost while fishing, visual monitoring shall be enhanced around the vessel for the next 10 minutes. Fishing may continue during this time. If a shark is sighted, visual monitoring may return to normal. If a marine mammal is observed in the vicinity, it shall be monitored until a determination can be made (based on best professional judgment) of whether gear is sighted attached to the animal, gear is suspected to be on the animal, or gear is not observed on the animal and it behaves normally. If gear is sighted with gear attached or suspected to be attached, procedures and actions for incidental take shall be initiated, as outlined in § 219.66. Gear loss and a ''move on'' for marine mammals shall be tallied on the data sheet.

(h) *Instrument and trap deployments.* (1) PIFSC shall initiate marine mammal watches (visual observation) no less than 30 minutes (or for the duration of transit between set locations, if shorter than 30 minutes) prior to both deployment and retrieval of instruments and traps. Marine mammal watches shall be conducted by scanning the surrounding waters with the naked eye and rangefinding binoculars (or monocular).

(2) PIFSC shall implement the move-on rule mitigation protocol, as described in this paragraph. If one or more marine mammals are observed in the vicinity of the planned location before gear deployment, and are considered at risk of interacting with the vessel or research gear, or appear to be approaching the vessel and are considered at risk of interaction, PIFSC shall either remain onsite or move on to another sampling location. If remaining onsite, the instrument or trap deployment shall be delayed. If the animals depart or appear to no longer be at risk of interacting with the vessel or gear, a further observation period shall be conducted. If no further observations are made or the animals still do not appear to be at risk of interaction, then the gear may be deployed. If the vessel is moved to a different section of the sampling area, the move-on rule mitigation protocol would begin anew. If, after moving on, marine mammals remain at risk of interaction, the PIFSC shall move again or skip the station. Marine mammals that are sighted shall be monitored to determine their position and movement in relation to the vessel to determine whether the move-on rule mitigation protocol should be implemented. PIFSC may use best professional judgment in making these decisions. PIFSC must retrieve gear immediately if marine mammals are believed to be entangled in an instrument or trap line or associated gear and follow disentanglement protocols.

§ 219.66 Requirements for monitoring and reporting.

(a) *Compliance coordination.* PIFSC shall designate a compliance coordinator who shall be responsible for ensuring compliance with all requirements of any LOA issued pursuant to §§ 216.106 of this chapter and 219.67 and for preparing for any subsequent request(s) for incidental take authorization.

(b) *Visual monitoring program.* PIFSC shall comply with the following monitoring requirements:

(1) Marine mammal visual monitoring shall occur prior to deployment of trawl nets, longlines, bottomfishing gear, instruments, and traps, respectively; throughout deployment of gear and active fishing of research gears (not including longline soak time); prior to retrieval of longline gear; and throughout retrieval of all research gear.

(2) Marine mammal watches shall be conducted by watch-standers (those navigating the vessel and/or other crew) at all times when the vessel is being operated.

(c) *Training.* (1) PIFSC must conduct annual training for all chief scientists and other personnel who may be responsible for conducting dedicated marine mammal visual observations to explain mitigation measures and monitoring and reporting requirements, mitigation and monitoring protocols, marine mammal identification, completion of datasheets, and use of equipment. PIFSC may determine the agenda for these trainings.

(2) PIFSC shall also dedicate a portion of training to discussion of best professional judgment, including use in any incidents of marine mammal interaction and instructive examples where use of best professional judgment was determined to be successful or unsuccessful.

(3) PIFSC shall coordinate with NMFS' Office of Science and Technology to ensure training and guidance related to handling procedures and data collection is consistent with other fishery science centers, where appropriate.

(d) *Handling procedures and data collection.* (1) PIFSC must develop and implement standardized marine mammal handling, disentanglement, and data collection procedures. These standard procedures will be subject to approval by NMFS OPR and must be complied with by PIFSC if approved.

(2) For any marine mammal interaction involving the release of a live animal, PIFSC shall collect

necessary data to facilitate a serious injury determination, when practicable.

(3) PIFSC shall provide its relevant personnel with standard guidance and training regarding handling of marine mammals, including how to identify different species, bring an individual aboard a vessel, assess the level of consciousness, remove fishing gear, return an individual to water, and log activities pertaining to the interaction.

(4) PIFSC shall record marine mammal interaction information on standardized forms, which will be subject to approval by OPR. PIFSC shall also answer a standard series of supplemental questions regarding the details of any marine mammal interaction.

(e) *Reporting.* (1) Marine mammal capture/entanglements (live or dead) must be reported immediately to the relevant regional stranding coordinator (Hawai'i Statewide Marine Animal Stranding, Entanglement, and Reporting Hotline, 888–256–9840; Guam Conservation Office Hotline, 671–688–3297; Commonwealth of the Northern Mariana Islands Division of Fish and Wildlife Hotline, 670–287–8537; American Samoa Department of Marine and Wildlife Resources, 684–633–4456), OPR (301–427–8401), and NMFS Pacific Islands Regional Office (808–725–5000).

(2) PIFSC shall report all incidents of marine mammal interaction to NMFS's Protected Species Incidental Take database within 48 hours of occurrence and shall provide supplemental information to OPR upon request. Information related to marine mammal interaction (animal captured or entangled in research gear) must include details of survey effort, full descriptions of any observations of the animals, the context (vessel and conditions), decisions made, and rationale for decisions made in vessel and gear handling.

(3) PIFSC shall submit an annual summary report to OPR:

(i) The report must be submitted no later than 90 days following the end of a given calendar year. The first annual report must cover the period from the date of issuance of the LOA through the end of that calendar year and the entire first full calendar year of the authorization. Subsequent reports will cover only 1 full calendar year. PIFSC shall provide a final report within 30 days following resolution of comments on the draft report.

(ii) These reports shall contain, at minimum, the following:

(A) Annual line-kilometers surveyed during which the EK60, EM 300, and ADCP Ocean Surveyor (or equivalent sources) were predominant and associated pro-rated estimates of actual take;

(B) Summary information regarding use of all longline, bottomfishing, and trawl gear, including number of sets, tows, *etc.,* specific to each gear;

(C) Accounts of surveys where marine mammals were observed during sampling but no interactions occurred;

(D) Accounts of all incidents of marine mammal interactions, including circumstances of the event and descriptions of any mitigation procedures implemented or not implemented and why and, if released alive, serious injury determinations;

(E) Summary information related to any disturbance of pinnipeds, including event-specific total counts of animals present, counts of reactions according to the three-point scale, and distance of closest approach;

(F) A written description of any mitigation research investigation efforts and findings (*e.g.,* line modifications);

(G) A written evaluation of the effectiveness of PIFSC mitigation strategies in reducing the number of marine mammal interactions with survey gear, including best professional judgment and suggestions for changes to the mitigation strategies, if any; and

(H) A summary of all relevant training provided by PIFSC and any coordination with NMFS Office of Science and Technology and the Pacific Islands Regional Office.

(f) *Reporting of injured or dead marine mammals.* (1) If any activity defined in § 219.61(a) causes the take of a marine mammal in a prohibited manner, PIFSC personnel engaged in the research activity shall immediately cease such activity until such time as an appropriate decision regarding activity continuation can be made by the PIFSC Director (or designee). The incident must be reported immediately to OPR and the NMFS Pacific Islands Regional Office. OPR will review the circumstances of the prohibited take and assess what measures are necessary to minimize the likelihood of further prohibited take and ensure Marine Mammal Protection Act (MMPA) compliance. The immediate decision made by PIFSC regarding continuation of the specified activity is subject to OPR concurrence. The report must include the following information:

(i) Time, date, and location (latitude/longitude) of the incident;

(ii) Description of the incident including, but not limited to, monitoring prior to and occurring at time of the incident;

(iii) Environmental conditions (*e.g.,* wind speed and direction, Beaufort sea state, cloud cover, visibility);

(iv) Description of all marine mammal observations in the 24 hours preceding the incident;

(v) Species identification or description of the animal(s) involved;

(vi) Status of all sound source use in the 24 hours preceding the incident;

(vii) Water depth;

(viii) Fate of the animal(s) (*e.g.* dead, injured but alive, injured and moving, blood or tissue observed in the water, status unknown, disappeared, *etc.*); and

(ix) Photographs or video footage of the animal(s).

(2) In the event that PIFSC discovers an injured or dead marine mammal and determines that the cause of the injury or death is unknown and the death is relatively recent (*e.g.,* in less than a moderate state of decomposition), PIFSC shall immediately report the incident to OPR and the NMFS Pacific Islands Regional Office. The report must include the information identified in paragraph (f)(1) of this section. Activities may continue while OPR reviews the circumstances of the incident. OPR will work with PIFSC to determine whether additional mitigation measures or modifications to the activities are appropriate.

(3) In the event that PIFSC discovers an injured or dead marine mammal and determines that the injury or death is not associated with or related to the activities defined in § 219.61(a) (*e.g.,* previously wounded animal, carcass with moderate to advanced decomposition, scavenger damage), PIFSC shall report the incident to OPR and the Pacific Islands Regional Office, NMFS, within 24 hours of the discovery. PIFSC shall provide photographs or video footage or other documentation of the stranded animal sighting to OPR.

(4) In the event of a ship strike of a marine mammal by any PIFSC or partner vessel involved in the activities covered by the authorization, PIFSC or partner shall immediately report the information in paragraph (f)(1) of this section, as well as the following additional information:

(i) Vessel's speed during and leading up to the incident;

(ii) Vessel's course/heading and what operations were being conducted;

(iii) Status of all sound sources in use;

(iv) Description of avoidance measures/requirements that were in place at the time of the strike and what additional measures were taken, if any, to avoid strike;

(v) Estimated size and length of animal that was struck; and

(vi) Description of the behavior of the marine mammal immediately preceding and following the strike.

§ 219.67 Letters of Authorization.

(a) To incidentally take marine mammals pursuant to these regulations, PIFSC must apply for and obtain an LOA.

(b) An LOA, unless suspended or revoked, may be effective for a period of time not to exceed the expiration date of these regulations.

(c) If an LOA expires prior to the expiration date of these regulations, PIFSC may apply for and obtain a renewal of the LOA.

(d) In the event of projected changes to the activity or to mitigation and monitoring measures required by an LOA, PIFSC must apply for and obtain a modification of the LOA as described in § 219.68.

(e) The LOA shall set forth:

(1) Permissible methods of incidental taking;

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

(3) Requirements for monitoring and reporting.

(f) Issuance of the LOA shall be based on a determination that the level of taking will be consistent with the findings made for the total taking allowable under these regulations.

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

§ 219.68 Renewals and modifications of Letters of Authorization.

(a) An LOA issued under §§ 216.106 of this chapter and 219.67 for the activity identified in § 219.61(a) shall be renewed or modified upon request by the applicant, provided that:

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

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

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

(c) An LOA issued under §§ 216.106 of this chapter and 219.67 for the activity identified in § 219.61(a) may be modified by OPR under the following circumstances:

(1) OPR may utilize an adaptive management process to modify or augment the existing mitigation, monitoring, or reporting measures (after consulting with PIFSC regarding the practicability of the modifications) if doing so creates a reasonable likelihood of more effectively accomplishing the goals of the mitigation and monitoring set forth in these regulations.

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

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

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

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

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

(2) If OPR determines that an emergency exists that poses a significant risk to the well-being of the species or stocks of marine mammals specified in LOAs issued pursuant to §§ 216.106 of this chapter and 219.67, an LOA may be modified without prior notice or opportunity for public comment. Notice would be published in the **Federal Register** within 30 days of the action.

§§ 219.69–219.70 [Reserved]

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