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Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to Southwest Fisheries Science Center Fisheries Research; Final Rule

DEPARTMENT OF COMMERCE**National Oceanic and Atmospheric Administration****50 CFR Part 219**

[Docket No. 120416011–5836–02]

RIN 0648–BB87

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

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

ACTION: Final rule.

SUMMARY: NMFS' Office of Protected Resources, upon request of NMFS' Southwest Fisheries Science Center (SWFSC), 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 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.

DATES: Effective from October 30, 2015, through October 30, 2020.

ADDRESSES: A copy of SWFSC's application and supporting documents, as well as a list of the references cited in this document, may be obtained by visiting the Internet at:

www.nmfs.noaa.gov/pr/permits/incidental/research.htm. In case of problems accessing these documents, please call the contact listed above (see **FOR FURTHER INFORMATION CONTACT**).

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

SUPPLEMENTARY INFORMATION:**Executive Summary**

These regulations, under the Marine Mammal Protection Act (16 U.S.C. 1361 *et seq.*), establish frameworks for authorizing the take of marine mammals incidental to the SWFSC's fisheries research activities in three separate specified geographical regions (*i.e.*, the California Current Ecosystem, the Eastern Tropical Pacific, and the

Antarctic Marine Living Resources Ecosystem).

The SWFSC collects a wide array of information necessary to evaluate the status of exploited fishery resources and the marine environment. SWFSC scientists conduct fishery-independent research onboard NOAA-owned and operated vessels or on chartered vessels. A few surveys are conducted onboard commercial fishing vessels, but the SWFSC designs and executes the studies and funds vessel time.

Purpose and Need for This Regulatory Action

We received an application from the SWFSC requesting five-year regulations and authorization to take multiple species of marine mammals. Take is anticipated to occur by Level B harassment incidental to the use of active acoustic devices in each of the three specified geographical regions, as well as by visual disturbance of pinnipeds in the Antarctic only, and by Level A harassment, serious injury, or mortality incidental to the use of fisheries research gear in the California Current and Eastern Tropical Pacific only. For each specified geographical region, the regulations are valid for five years from the date of issuance. Please see "Background" below for definitions of harassment.

Section 101(a)(5)(A) of the MMPA directs the Secretary of Commerce to allow, upon request, the incidental, but not intentional taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if, after notice and public comment, the agency makes certain findings and issues regulations. These regulations would contain mitigation, monitoring, and reporting requirements.

Legal Authority for the Regulatory Action

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 the five-year regulations and any subsequent Letters of Authorization.

Summary of Major Provisions Within the Regulations

The following provides a summary of some of the major provisions within these regulations for the SWFSC fisheries research activities in the three specified geographical regions. We have determined that the SWFSC's adherence to the mitigation, monitoring, and reporting measures listed below would achieve the least practicable adverse

impact on the affected marine mammals. They include:

- Required monitoring of the sampling areas to detect the presence of marine mammals before deployment of pelagic trawl nets or pelagic longline gear.
- Required use of marine mammal excluder devices on one type of pelagic trawl net and required use of acoustic deterrent devices on all pelagic trawl nets.
- Required implementation of the mitigation strategy known as the move-on rule, which incorporates best professional judgment, when necessary during pelagic trawl and pelagic longline operations.

Background

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

An authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth. NMFS has defined "negligible impact" in 50 CFR 216.103 as "an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival."

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].

Summary of Request

On April 25, 2013, we received an adequate and complete request from SWFSC for authorization to take marine mammals incidental to fisheries research activities. We received an initial draft of the request on February 11, 2012, followed by revised drafts on June 29 and December 21, 2012. On May 2, 2013 (78 FR 25703), we published a notice of receipt of SWFSC's application in the **Federal Register**, requesting comments and information related to the SWFSC request for thirty days. We received comments from the Marine Mammal Commission, which we considered in development of the notice of proposed rulemaking (80 FR 8166; February 13, 2015) and which are available on the Internet at: www.nmfs.noaa.gov/pr/permits/incidental/research.htm.

SWFSC plans to conduct fisheries research using pelagic trawl gear used at various levels in the water column, pelagic longlines with multiple hooks, bottom-contact trawls, and other gear. If a marine mammal interacts with gear deployed by SWFSC, the outcome could potentially be Level A harassment, serious injury (*i.e.*, any injury that will likely result in mortality), or mortality. However, there is not sufficient information upon which to base a prediction of what the outcome may be for any particular interaction. Therefore, SWFSC has pooled the estimated number of incidents of take resulting from gear interactions, and we have assessed the potential impacts accordingly. SWFSC also uses various active acoustic devices in the conduct of fisheries research, and use of these devices has the potential to result in Level B harassment of marine mammals. Level B harassment of pinnipeds hauled out on ice may also occur, in the Antarctic only, as a result of visual disturbance from vessels conducting SWFSC research. These regulations are valid for five years from the date of issuance.

The SWFSC conducts fisheries research surveys in the California Current Ecosystem (CCE), the Eastern Tropical Pacific (ETP), and the Antarctic Marine Living Resources Ecosystem (AMLR). As required by the MMPA, SWFSC's request is considered separately for each specified geographical region. In the CCE, SWFSC requests authorization to take individuals of seventeen species by Level A harassment, serious injury, or mortality (hereafter referred to as M/SI + Level A) and of 34 species by Level B harassment. In the ETP, SWFSC

requests authorization to take individuals of eleven species by M/SI + Level A and of 31 species by Level B harassment. In the AMLR, SWFSC requests authorization to take individuals of seventeen species by Level B harassment. No takes by M/SI + Level A are anticipated in the AMLR.

Description of the Specified Activity

Overview

The SWFSC collects a wide array of information necessary to evaluate the status of exploited fishery resources and the marine environment. SWFSC scientists conduct fishery-independent research onboard NOAA-owned and operated vessels or on chartered vessels. A few surveys are conducted onboard commercial fishing vessels, but the SWFSC designs and executes the studies and funds vessel time. The SWFSC plans to administer and conduct approximately fourteen survey programs over the five-year period. The gear types used fall into several categories: pelagic trawl gear used at various levels in the water column, pelagic longlines, bottom-contact trawls, and other gear. Only use of pelagic trawl and pelagic longline gears are likely to result in interaction with marine mammals. The majority of these surveys also use active acoustic devices.

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 fin 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 SWFSC is the research arm of NMFS in the southwest region of the U.S. The SWFSC conducts research and provides scientific advice to manage fisheries and conserve protected species in the three geographic research areas described below and provides scientific information to support the Pacific Fishery Management Council

and numerous other domestic and international fisheries management organizations.

Dates and Duration

The specified activity may occur at any time during the five-year period of validity of the regulations. Dates and duration of individual surveys are inherently uncertain, based on congressional funding levels for the SWFSC, weather conditions, or ship contingencies. In addition, the cooperative research program 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 one 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. SWFSC survey activity does occur during most months of the year; however, trawl surveys occur during May through June and September and longline surveys are completed during June–July and September.

Specified Geographical Regions

The SWFSC operates within three research areas: the California Current, Eastern Tropical Pacific, and Antarctic. These three areas were described in detail in our notice of proposed rulemaking (80 FR 8166; February 13, 2015); please see that document for further detail.

Detailed Description of Activities

A detailed description of SWFSC's planned activities was provided in our notice of proposed rulemaking (80 FR 8166; February 13, 2015) and is not repeated here. No changes have been made to the specified activities described therein.

Comments and Responses

We published a notice of proposed rulemaking in the **Federal Register** on February 13, 2015 (80 FR 8166) and requested comments and information from the public. During the thirty-day comment period, we received letters from the Marine Mammal Commission (Commission) and jointly from The Humane Society of the United States and Whale and Dolphin Conservation (HSUS). The comments and our responses are provided here, and the comments have been posted on the Internet at: www.nmfs.noaa.gov/pr/permits/incidental/research.htm. Please

see the comment letters for full rationale behind the recommendations we respond to below.

Comment 1: The Commission recommends that we require SWFSC to estimate the numbers of marine mammals taken by Level B harassment incidental to use of active acoustic sources (e.g., echosounders) based on the 120-dB rather than the 160-dB root mean square (rms) threshold. Please see our notice of proposed rulemaking (80 FR 8166; February 13, 2015) for discussion related to acoustic terminology and thresholds. The Commission made the same recommendation in their letter submitted during the 2013 notice of receipt comment period. HSUS reviewed that letter and indicated that they agree and support the Commission's recommendation. The Commission had also previously recommended that we consult with experts in the fields of sound propagation and marine mammal hearing to revise existing acoustic criteria and thresholds as necessary to specify threshold levels that would be more appropriate for a wider range of sound sources.

Response: Continuous sounds are those whose sound pressure level remains above that of the ambient sound, with negligibly small fluctuations in level (NIOSH, 1998; ANSI, 2005), while intermittent sounds are defined as sounds with interrupted levels of low or no sound (NIOSH, 1998). Thus, echosounder signals are not continuous sounds but rather intermittent sounds. Intermittent sounds can further be defined as either impulsive or non-impulsive. Impulsive sounds have been defined as sounds which are typically transient, brief (< 1 sec), broadband, and consist of a high peak pressure with rapid rise time and rapid decay (ANSI, 1986; NIOSH, 1998). Echosounder signals also have durations that are typically very brief (< 1 sec), with temporal characteristics that more closely resemble those of impulsive sounds than non-impulsive sounds, which typically have more gradual rise times and longer decays (ANSI, 1995; NIOSH, 1998). With regard to behavioral thresholds, we consider the temporal and spectral characteristics of echosounder signals to more closely resemble those of an impulse sound than a continuous sound.

The Commission suggests that, for certain sources considered here, the interval between pulses would not be discernible to the animal, rendering them effectively continuous. However, echosounder pulses are emitted in a similar fashion as odontocete

echolocation click trains. Research indicates that marine mammals, in general, have extremely fine auditory temporal resolution and can detect each signal separately (e.g., Au *et al.*, 1988; Dolphin *et al.*, 1995; Supin and Popov, 1995; Mooney *et al.*, 2009), especially for species with echolocation capabilities. Therefore, it is highly unlikely that marine mammals would perceive echosounder signals as being continuous. The Commission provides numerous references purporting to demonstrate behavioral responses by marine mammals to received levels of sound below 160 dB rms from sources with characteristics similar to those used by SWFSC. However, the vast majority of these references concern acoustic deterrent devices, which we do not believe are similar to SWFSC acoustic sources.

In conclusion, echosounder signals are intermittent rather than continuous signals, and the fine temporal resolution of the marine mammal auditory system allows them to perceive these sounds as such. Further, the physical characteristics of these signals indicate a greater similarity to the way that intermittent, impulsive sounds are received. Therefore, the 160-dB threshold (typically associated with impulsive sources) is more appropriate than the 120-dB threshold (typically associated with continuous sources) for estimating takes by behavioral harassment incidental to use of such sources. This response represents the consensus opinion of acoustics experts from NMFS' Office of Protected Resources and Office of Science and Technology.

Finally, we agree with the Commission's recommendation to revise existing acoustic criteria and thresholds as necessary to specify threshold levels that would be more appropriate for a wider range of sound sources and are currently in the process of producing such revisions. NOAA recognizes, as new science becomes available, that our current categorizations (*i.e.*, impulse versus continuous) may not fully encompass the complexity associated with behavioral responses (e.g., context) and are working toward addressing these issues in future acoustic guidance.

Comment 2: The Commission recommends that we develop criteria and guidance for determining when prospective applicants should request taking by Level B harassment incidental to the use of echosounders, sonars, and subbottom profilers, stating that we should follow a consistent approach in assessing the potential for taking from such active acoustic systems.

Response: We agree with the Commission's recommendation. Generally speaking, there has been a lack of information and scientific consensus regarding the potential effects of scientific sonars on marine mammals, which may differ depending on the system and species in question as well as the environment in which the system is operated. We are currently working to ensure that the use of these types of active acoustic sources is considered consistently and look forward to the Commission's advice as we develop guidance as recommended.

Comment 3: The Commission notes that we have delineated two categories of acoustic sources, largely based on frequency, with those sources operating at frequencies greater than the known hearing ranges of any marine mammal (*i.e.*, >180 kHz) lacking the potential to cause disruption of behavioral patterns. The Commission recommends that we review the recent scientific literature on acoustic sources with frequencies above 180 kHz (*i.e.*, Deng *et al.*, 2014; Hastie *et al.*, 2014) and incorporate those findings into our criteria and guidance for determining when prospective applicants should request authorization for taking by Level B harassment from the use of echosounders, sonars, and subbottom profilers.

Response: We are aware of the referenced literature but did not acknowledge and address those findings in our notice of proposed rulemaking. We appreciate the Commission bringing it to our attention. In general, the referenced work indicates that "sub-harmonics" could be "detectable" by certain species at distances up to several hundred meters. However, this detectability is in reference to ambient noise, not to NMFS' established 160-dB threshold for assessing the potential for incidental take for these sources (see also our response to comment #1). Source levels of the secondary peaks considered in these studies—those within the hearing range of some marine mammals—range from 135–166 dB, meaning that these sub-harmonics would either be below the threshold for behavioral harassment or would attenuate to such a level within a few meters. Beyond these important study details, these high-frequency (*i.e.*, Category 1) sources and any energy they may produce below the primary frequency that could be audible to marine mammals would be dominated by a few primary sources (e.g., EK60) that are operated near-continuously—much like other Category 2 sources considered in our assessment of potential incidental take from SWFSC use of active acoustic sources—and the

potential range above threshold would be so small as to essentially discount them.

Comment 4: HSUS expressed concern that we may not be appropriately accounting for behavioral impacts incidental to SWFSC use of active acoustic sources and noted that such impacts could occur at greater distances than considered in our analysis.

Response: Beyond consideration of a different threshold for assessing potential behavioral impacts—which we address above for comment #1—it is not clear what additional or different approaches to impact assessment HSUS might recommend. HSUS states that NMFS' current relevant acoustic threshold (*i.e.*, 160 dB rms) is the level at which temporary threshold shift is predicted to occur and does not account for behavioral effects. This statement is inaccurate—while we acknowledge that behavioral effects can and have been documented to occur at received levels below 160 dB rms, depending on behavioral context, the current step-function paradigm espoused by NMFS provides that behavioral reactions that may be considered as “take” under the MMPA occur upon exposure to any received level at or exceeding 160 dB rms. Under the same paradigm, the onset of temporary threshold shift is considered to occur upon receipt of any sound level between 160 dB rms and either 180 or 190 dB rms, for cetaceans and pinnipeds, respectively. Absent a specific recommendation to consider, we believe that our approach to assessing the potential for behavioral harassment incidental to SWFSC use of active acoustics is appropriate.

Comment 5: SWFSC proposed to implement a move-on rule, under which they suspend operations or hauling of gear when marine mammals are observed within a certain distance of the vessel. This measure is intended to reduce the potential for marine mammal interactions. One exception to this measure is for California sea lions, for which density is sufficiently high in typical operation areas in the California Current that SWFSC believes implementation of the move-on rule should only be triggered upon observation of more than five sea lions. HSUS states that the basis for determining a numerical threshold for balancing risk to the affected species and practicability for operations (*i.e.*, six sea lions) is not sufficiently explained.

Response: We have determined that implementation of the move-on rule, in concert with other measures described below under “Mitigation”, is sufficient to reduce the amount of incidental taking to the level of least practicable

adverse impact, as required by the MMPA. However, for California sea lions, there is a tension between the numbers of individuals observed in many sampling locations versus the amount of historical interactions with SWFSC longline research gear, *i.e.*, historical interactions are rare (seven individual sea lions incidentally captured in nine years) while sightings of California sea lions within 1 nm of survey locations is common. Therefore, the expected result of an absolute move-on rule for California sea lions is that certain survey locations would be effectively eliminated from future surveys, while providing marginal benefit to the stock. It is possible that a move-on rule triggered upon observation of a single sea lion, rather than a group of six or more sea lions, may provide additional benefit in reducing potential impacts to the stock. However, because these areas are important to the survey objectives (*e.g.*, sampling target species) developed in accordance with NMFS' statutory mandates and because implementation of the more restrictive version of the measure for California sea lions is not necessary to reach a finding of negligible impact for California sea lions, we have determined that the measure as described satisfies the standard of least practicable adverse impact. The specific numerical threshold—six or more California sea lions—was based on SWFSC expert knowledge concerning the numbers of California sea lions typically observed in proximity to sampling locations. We will assess this measure on an annual basis during the lifetime of the regulations and would modify the measure through adaptive management should we determine that a more restrictive measure is required to meet the MMPA standard of least practicable adverse impact.

Comment 6: SWFSC proposed to prohibit the practice of chumming in order to prevent attractance of marine mammals to longline operations but would allow the practice of discarding spent bait during survey operations. HSUS believes that there is little difference between these two practices and indicates concern that discards of spent bait, in combination with increased densities of sea lions, may result in potential for increased interactions with survey gear. HSUS recommends that we require that bait be retained until all hooks are clear of the water.

Response: While we acknowledge that any differentiation between discarding spent bait and chumming may be perceived as a matter of semantics, a

substantive distinction is that chumming is an intentional act to lure or attract animals, whereas SWFSC performs bait discard to increase survey efficiency. Interactions with marine mammals during longline surveys have historically been limited to rare incidents involving no more than a single individual California sea lion in any set. There is no information to suggest that this ongoing practice has resulted in any increase in the overall number of interactions, while it has demonstrably not resulted in an increase in the number of animals per interaction. Therefore, we have determined that a prohibition on bait discards is not necessary to reduce the anticipated taking to the level of least practicable adverse impact. However, we will assess the potential inclusion of such a measure on an annual basis during the lifetime of the regulations and will require it through adaptive management should we determine it necessary to satisfy the statutory requirement.

Mitigation

In order to issue an incidental take authorization under section 101(a)(5)(A) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, “and other means of effecting the least practicable adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for subsistence uses.” We provided a full description of the planned mitigation measures, including background discussion related to certain elements of the mitigation plan, in our notice of proposed rulemaking (80 FR 8166; February 13, 2015). Please see that document for more detail.

General Measures

Coordination and communication— We require that the SWFSC take all necessary measures to coordinate and communicate in advance of each specific survey with NOAA's Office of Marine and Aviation Operations (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. SWFSC will coordinate and conduct briefings at the outset of each

survey and as necessary between ship's crew (commanding officer/master or designee(s), as appropriate) and scientific party in order to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures. The chief scientist (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.

Vessel speed—Vessel speed during active sampling rarely exceeds 5 kn, with typical speeds being 2–4 kn. Transit speeds vary from 6–14 kn but average 10 kn. These low vessel speeds minimize the potential for ship strike. At any time during a survey or in transit, if a crew member standing watch or dedicated marine mammal observer 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.

Other gears—The SWFSC 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 ROV deployments) are not considered to pose any risk to marine mammals and are therefore not subject to specific mitigation measures. In addition, specific aspects of gear design, survey protocols (e.g., number of hooks), and frequency of use indicate that certain types of gears that may otherwise be expected to have the potential to result in take of marine mammals (e.g., bottom longline used in sablefish life history surveys) do not pose significant risk to marine mammals and are not subject to specific mitigation measures. However, at all times when the SWFSC 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—Since the time the notice of proposed rulemaking was published, SWFSC developed marine mammal handling protocols for use in its fisheries and ecosystem research activities that rely on gears that may interact with these species. These protocols draw heavily from existing fisheries observer program placards, training materials and manuals, particularly those using trawl and

longline gears. The SWFSC handling protocols follow a step-wise order: (1) Take actions to ensure the health and safety of crew and scientists on board; (2) depending how and where the animal is hooked or entangled, take specific actions to prevent further injury to the animal; (3) take actions to increase the animal's chances of survival, and (4) record detailed information on the interaction, actions taken and observations of the animal throughout the incident. SWFSC views formalizing this data collection as a key component to evaluating how actual handling compares to handling protocols, and to learning from these incidents both through analysis of interaction reports and through discussions at its annual training sessions.

Trawl Survey Visual Monitoring and Operational Protocols

The mitigation requirements described here are applicable to all midwater trawl operations conducted by the SWFSC (currently conducted using the Nordic 264 and modified-Cobb nets). Marine mammal watches (visual observation) will be initiated no less than thirty minutes prior to arrival on station to determine if marine mammals are in the vicinity of the planned sample location. Marine mammal watches will be conducted by scanning the surrounding waters with the naked eye and rangefinding binoculars (or monocular). During nighttime operations, visual observation will be conducted using the naked eye and available vessel lighting. The visual observation period typically occurs during transit leading up to arrival at the sampling station, rather than upon arrival on station. However, in some cases it may be necessary to conduct a bongo plankton tow or other small net cast prior to deploying trawl gear. In these cases, the visual watch will continue until trawl gear is ready to be deployed. Aside from this required thirty-minute minimum pre-trawl monitoring period, the OOD/CS and crew standing watch will visually scan for marine mammals during all daytime operations.

The primary purpose of conducting the pre-trawl visual monitoring period is to implement the move-on rule. If marine mammals are sighted within 1 nm of the planned set location in the thirty minutes before setting the trawl gear, the vessel will transit to a different section of the sampling area to maintain a minimum set distance of 1 nm from the observed marine mammals. If, after moving on, marine mammals remain within the 1 nm exclusion zone, the CS

or watch leader may decide to move again or to skip the station. However, the effectiveness of visual monitoring may be limited depending on weather and lighting conditions, and it may not always be possible to conduct visual observations out to 1 nm radial distance. The OOD, CS or watch leader will determine the best strategy to avoid potential takes of marine mammals based on the species encountered and their numbers and behavior, position, and vector relative to the vessel, as well as any other factors. In any case, no trawl gear will be deployed if marine mammals have been sighted within 1 nm of the planned set location during the thirty-minute watch period.

In general, trawl operations will be conducted immediately upon arrival on station (and on conclusion of the thirty-minute pre-watch period) in order to minimize the time during which marine mammals (particularly pinnipeds) may become attracted to the vessel. However, in some cases it will be necessary to conduct small net tows (e.g., bongo net) prior to deploying trawl gear in order to avoid trawling through extremely high densities of gelatinous zooplankton that can damage trawl gear.

Once the trawl net is in the water, the OOD, CS, and/or crew standing watch will continue to visually monitor the surrounding waters and will maintain a lookout for marine mammal presence as far away as environmental conditions allow. If marine mammals are sighted before the gear is fully retrieved, the most appropriate response to avoid marine mammal interaction will be determined by the professional judgment of the CS, watch leader, OOD and other experienced crew as necessary. This judgment will be based on past experience operating trawl gears around marine mammals (i.e., best professional judgment) and on SWFSC training sessions that will facilitate dissemination of expertise operating in these situations (e.g., factors that contribute to marine mammal gear interactions and those that aid in successfully avoiding such events). Best professional judgment takes into consideration the species, numbers, and behavior of the animals, the status of the trawl net operation (e.g., 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. 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 consider human safety in the operation of fishing gear at sea. Nevertheless, we require a full accounting of factors that shape both successful and unsuccessful decisions and these details will be fed back into SWFSC training efforts and ultimately help to refine the best professional judgment that determines the course of action taken in any given scenario (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 1 nm exclusion zone. This decision is at the discretion of the OOD/CS and is dependent on the situation.

Standard survey protocols that are expected to lessen the likelihood of marine mammal interactions include standardized tow durations and distances. Standard tow durations of not more than thirty minutes at the target depth will be implemented, excluding deployment and retrieval time (which may require an additional thirty minutes, depending on target depth), to reduce the likelihood of attracting and incidentally taking marine mammals. Short tow durations decrease the opportunity for marine mammals to find the vessel and investigate. Trawl tow distances will be less than 3 nm—typically 1–2 nm, depending on the specific survey and trawl speed—which is expected to reduce the likelihood of attracting and incidentally taking marine mammals. In addition, care will be taken when emptying the trawl to avoid damage to marine mammals that may be caught in the gear but are not visible upon retrieval. The gear will be emptied as quickly as possible after retrieval in order to determine whether or not marine mammals are present. The vessel’s crew will clean trawl nets prior to deployment to remove prey items that might attract marine mammals. Catch volumes are typically small with every attempt made to collect all organisms caught in the trawl.

Marine mammal excluder devices—Excluder devices are specialized modifications, typically used in trawl nets, which are designed to reduce bycatch by allowing non-target taxa to escape the net. These devices generally consist of a grid of bars fitted into the net that allow target species to pass through the bars into the codend while larger, unwanted taxa (e.g., turtles, sharks, mammals) strike the bars and are ejected through an opening in the net.

Marine mammal excluder devices (MMED) have not been proven to be fully effective at preventing marine mammal capture in trawl nets (e.g., Chilvers, 2008) and are not expected to prevent marine mammal capture in SWFSC trawl surveys. It is difficult to effectively test such devices, in terms of effectiveness in excluding marine mammals as opposed to effects on target species catchability, because realistic field trials would necessarily involve marine mammal interactions with trawl nets. Use of artificial surrogates in field trials has not been shown to be a realistic substitute (Gibson and Isakssen, 1998). Nevertheless, we believe it reasonable to assume that use of MMEDs may reduce the likelihood of a given marine mammal interaction with trawl gear resulting in mortality. We do not infer causality, but note that annual marine mammal interactions with the Nordic 264 trawl net have been much reduced (relative to 2008) since use of the MMED began. For full details of design and testing of the SWFSC MMED designed for the Nordic 264 net, please see Dotson *et al.* (2010).

Two types of nets are used in SWFSC pelagic trawl surveys: The Nordic 264 and the modified-Cobb midwater trawls. All Nordic 264 trawl nets will be fitted with MMEDs specially designed to allow marine mammals caught during trawling operations an opportunity to escape. Modified-Cobb trawl nets are considerably smaller than Nordic 264 trawl nets (80 m² versus 380 m² net opening), are fished at slower speeds, and have a different shape and functionality than the Nordic 264. Very few marine mammal interactions with SWFSC pelagic trawl gear have involved the modified-Cobb net (five of thirty total incidents from 2006–14). Due to the smaller size and different functionality of the modified-Cobb, there is no suitable MMED yet available. However, the SWFSC plans to perform research and design work to develop an effective excluder, if possible, which will not appreciably affect the catchability of the net and therefore maintain continuity of the fisheries research dataset. Please see “Monitoring and Reporting” for additional discussion.

Acoustic deterrent devices—Acoustic deterrent devices (pingers) are underwater sound-emitting devices that have been shown to decrease the probability of interactions with certain species of marine mammals when fishing gear is fitted with the devices. Pingers will be deployed during all pelagic trawl operations and on all types of midwater trawl nets (i.e., the Nordic 264 and modified-Cobb nets), with two

to four pingers placed along the footrope and/or headrope. The vessel’s crew will ensure that pingers are operational prior to deployment. Pingers are manufactured by STM Products (Model DDD–03H), with the following attributes: (1) Operational depth of 10–200 m; (2) tones range from 100 ms to seconds in duration; (3) variable frequency of 5–500 kHz; and (4) maximum source level of 176 dB rms re 1 μPa at 30–80 kHz.

AMLR bottom trawl surveys—The SWFSC has no documented interactions with marine mammals in bottom trawl gear used periodically in the AMLR, and standard trawl protocols described above are not required for these surveys. However, SWFSC staff conduct visual and acoustic surveys prior to deploying bottom trawl gear to assess the bathymetry and whether marine mammals are present in the area. These visual and acoustic surveys have resulted in very few detections of marine mammals during trawling operations. Visual and acoustic monitoring will continue as a regular part of future bottom trawl surveys in the AMLR study area, and if detections increase, indicating a higher potential for marine mammal interactions, we will consider the need to implement the standard trawl protocols described above during AMLR bottom trawl surveys.

Longline Survey Visual Monitoring and Operational Protocols

Visual monitoring requirements for all pelagic longline surveys are the same as those described above for trawl surveys. Please see that section for full details of the visual monitoring and move-on protocols. These protocols are not required for bottom longline or vertical longline operations, as there have been no documented marine mammal interactions for SWFSC use of these gears and because we believe there is very little risk of interaction even without these measures. In summary, requirements for pelagic longline surveys are to: (1) Conduct visual monitoring for a period not less than thirty minutes prior to arrival on station; (2) implement the move-on rule if marine mammals are observed within a 1-nm exclusion zone around the vessel; (3) deploy gear as soon as possible upon arrival on station (contingent on clearance of the exclusion zone); and (4) maintain visual monitoring effort throughout deployment and retrieval of the longline gear. As was described for trawl gear, the OOD, CS, or watch leader 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 1-nm exclusion zone. If marine mammals are detected during retrieval operations and are considered to be at risk, haul-back may be postponed. These decisions are at the discretion of the OOD/CS and are dependent on the situation.

There is one exception to these requirements for longline gear. If five or fewer California sea lions are sighted within the 1-nm exclusion zone during the thirty-minute pre-clearance period, longline gear may be deployed (observations of more than five California sea lions would trigger the move-on rule or suspension of gear deployment or retrieval, as appropriate and, for the latter, as indicated by best professional judgment).

As for trawl surveys, some standard survey protocols are expected to minimize the potential for marine mammal interactions. Typical soak times are two to four hours, measured from the time the last hook is in the water to when the first hook is brought out of the water (but may be as long as eight hours when targeting swordfish). SWFSC longline protocols specifically prohibit chumming (releasing additional bait to attract target species to the gear). However, spent bait may be discarded during gear retrieval while gear is still in the water. However, if marine mammal interactions with longline gear increase or if SWFSC staff observe that this practice may contribute to increased potential for interactions, we will consider the need to retain spent bait until all gear is retrieved.

We have carefully evaluated the SWFSC's planned mitigation measures and considered a range of other measures in the context of ensuring that we prescribe the means of effecting the least practicable adverse impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another: (1) The manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals, (2) the proven or likely efficacy of the specific measure to minimize adverse impacts as planned; and (3) the

practicability of the measure for applicant implementation.

Any mitigation measure(s) we prescribe should be able to accomplish, have a reasonable likelihood of accomplishing (based on current science), or contribute to the accomplishment of one or more of the general goals listed below:

(1) Avoidance or minimization of injury or death of marine mammals wherever possible (goals 2, 3, and 4 may contribute to this goal).

(2) A reduction in the number (total number or number at biologically important time or location) of individual marine mammals exposed to stimuli expected to result in incidental take (this goal may contribute to 1, above, or to reducing takes by behavioral harassment only).

(3) A reduction in the number (total number or number at biologically important time or location) of times any individual marine mammal would be exposed to stimuli expected to result in incidental take (this goal may contribute to 1, above, or to reducing takes by behavioral harassment only).

(4) A reduction in the intensity of exposure to stimuli expected to result in incidental take (this goal may contribute to 1, above, or to reducing the severity of behavioral harassment only).

(5) Avoidance or minimization of adverse effects to marine mammal habitat, paying particular attention to the prey base, blockage or limitation of passage to or from biologically important areas, permanent destruction of habitat, or temporary disturbance of habitat during a biologically important time.

(6) For monitoring directly related to mitigation, an increase in the probability of detecting marine mammals, thus allowing for more effective implementation of the mitigation.

Based on our evaluation of the SWFSC's proposed measures, as well as other measures we considered, we have determined that these mitigation measures provide the means of effecting the least practicable adverse impact on marine mammal species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Description of Marine Mammals in the Area of the Specified Activity

We previously reviewed SWFSC'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 referred readers to Sections 3 and 4 of SWFSC's application, as well as to NMFS' Stock Assessment Reports (SARs; www.nmfs.noaa.gov/pr/sars/). We also provided information related to all species with expected potential for occurrence in the specified geographical regions where SWFSC plans to conduct the specified activities, summarizing information related to the population or stock, including potential biological removal (PBR). Please see Tables 3–5 in our notice of proposed rulemaking (80 FR 8166; February 13, 2015) for that information, which is not reprinted here.

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

We provided a summary and discussion of the ways that components of the specified activity may impact marine mammals and their habitat in our notice of proposed rulemaking (80 FR 8166; February 13, 2015). Specifically, we considered potential effects to marine mammals from ship strike, physical interaction with various gear types, use of active acoustic sources, and visual disturbance of pinnipeds, as well as effects to prey species and to acoustic habitat. The information is not reprinted here.

Estimated Take by Incidental Harassment, Serious Injury, or Mortality

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]. Serious injury means any injury that will likely result in mortality (50 CFR 216.3).

Take of marine mammals incidental to SWFSC research activities are anticipated to occur as a result of (1) injury or mortality due to gear interaction (CCE and ETP only; 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 on ice resulting from close proximity of research vessels (AMLR only; Level B harassment only).

Estimated Take Due to Gear Interaction

In order to estimate the number of potential incidents of take that could occur by M/SI + Level A through gear interaction, we first considered SWFSC's record of past such incidents, and then considered in addition other species that may have similar vulnerabilities to SWFSC midwater trawl and pelagic longline gear as those species for which we have historical interaction records. Historical interactions with SWFSC research gear, which have only occurred in the California Current Ecosystem, were described in Tables 10 and 11 of our notice of proposed rulemaking (80 FR 8166; February 13, 2015). Please see that document for more information. In order to produce the most precautionary take estimates possible, we use here the most recent five years of data that includes 2008 (e.g., 2008–12). As previously noted, there were dramatically more of both interactions and animals captured (41 animals captured in fourteen interactions across both longline and trawl gear) in the year 2008 than in any other year (an average of 4.3 animals captured in 2.8 interactions in all other years). We believe a five-year time frame provides enough data to adequately capture year-to-year variation in take levels, while reflecting recent environmental

conditions and survey protocols that may change over time.

The SWFSC has no recorded interactions with any gear other than midwater trawl and pelagic longline. We do not anticipate any future interactions in any other gears, including the bottom trawl gear periodically employed by the SWFSC in the AMLR. Although some historical interactions resulted in the animal(s) being released alive, no serious injury determinations (NMFS, 2012a; 2012b) were made, and it is possible that some of these animals later died. In order to use these historical interaction records in a precautionary manner as the basis for the take estimation process, and 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.

In order to evaluate the potential vulnerability of additional species to midwater trawl and pelagic longline gear, we consulted NMFS' List of Fisheries (LOF), which classifies U.S. commercial fisheries into one of three categories according to the level of incidental marine mammal M/SI that is known to occur on an annual basis over the most recent five-year period (generally) for which data has been analyzed. We provided this information, as presented in the 2014 LOF (79 FR

14418; April 14, 2014), in Table 13 of our notice of proposed rulemaking (80 FR 8166; February 13, 2015) and do not reproduce it here.

California Current Ecosystem—In order to estimate the potential number of incidents of M/SI + Level A that could occur incidental to the SWFSC's use of midwater trawl and pelagic longline gear in the CCE over the five-year period from 2015–19, we first look at the four species described that have been taken historically and then evaluate the potential vulnerability of additional species to these gears. Table 1 shows the five-year annual average captures of these four species and the projected five-year totals for this proposed rule, for both trawl and longline gear. In order to produce precautionary estimates, we calculate the annual average for the designated five-year period (2008–12), round up to the nearest whole number, and assume that this number may be taken in each future year. This is precautionary in part because we include 2008 in the five-year average, which skews the data for all species captured in trawl gear (though not for longline). These estimates are based on the assumption that annual effort (e.g., total annual trawl tow time) over the proposed five-year authorization period will not exceed the annual effort during the period 2008–12.

TABLE 1—ANNUAL AVERAGE CAPTURES (2008–12) AND PROJECTED FIVE-YEAR TOTAL FOR HISTORICALLY CAPTURED SPECIES

Gear	Species	2008	2009	2010	2011	2012	Maximum for any set ¹	Average per year	Projected 5-year total ²
Trawl	Pacific white-sided dolphin	15	3	3	7	4	11	6.4	35
	California sea lion	15	1	0	1	0	9	3.4	20
	Northern right whale dolphin	6	0	0	0	0	6	1.2	10
	Northern fur seal	3	0	0	0	0	1	0.6	5
Longline	California sea lion	2	1	1	0	1	1	1	5

¹ The maximum number of individual animals captured in a single trawl or longline set, 2008–12.

² The estimated total is the product of the 2008–12 annual average rounded up to the nearest whole number and multiplied by the five-year timespan of the proposed rule.

In order to estimate a number of individuals that could potentially be captured in SWFSC research gear for those species not historically captured, we first determine which species may have vulnerability to capture in a given gear. As noted above, we provided information about commercial fisheries interactions with gear similar to that used by SWFSC in our notice of proposed rulemaking (80 FR 8166; February 13, 2015). Where there are documented incidents of M/SI incidental to relevant commercial fisheries, we noted whether we believe those incidents provide sufficient basis

upon which to infer vulnerability to capture in SWFSC research gear.

Information related to incidental M/SI in relevant commercial fisheries is not, however, the sole determinant of whether it may be appropriate to authorize M/SI + Level A incidental to SWFSC survey operations. A number of factors (e.g., species-specific knowledge regarding animal behavior, overall abundance in the geographic region, density relative to SWFSC survey effort, feeding ecology, propensity to travel in groups commonly associated with other species historically taken) were taken into account to determine whether a

species may have a similar vulnerability to certain types of gear as historically taken species. In some cases, we have determined that species without documented M/SI may nevertheless be vulnerable to capture in SWFSC research gear. Similarly, we have determined that some species groups with documented M/SI are not likely to be vulnerable to capture in SWFSC gear. These decisions were described in detail in our notice of proposed rulemaking and no new information has been presented. Determinations regarding species that may be vulnerable to

capture in SWFSC research gear have not changed.

Of the species determined to be vulnerable to capture in a given gear, we then determine which may have a similar propensity to capture in a given gear as a historically captured species (Table 1) and which likely do not. For the former, we assume that, given similar propensity, it is possible that a worst-case scenario of take in a single trawl tow or longline set could occur while at the same time contending that, absent significant range shifts or changes in habitat usage, capture of a species not historically captured would likely be a very rare event. The former assumption also accounts for the likelihood that, for species that often travel in groups, an incident involving capture of that species is likely to involve more than one individual.

For example, we believe that the Risso's dolphin is potentially vulnerable to capture in midwater trawl gear and may have similar propensity to capture in that gear as does the Pacific white-sided dolphin. Because the greatest number of Pacific white-sided dolphins captured in any one trawl tow was eleven individuals (see Table 2), we assume that eleven Risso's dolphins could also be captured in a single incident. However, in recognition of the fact that any incident involving the capture of Risso's dolphins would likely be a rare event, we authorize a total taking over the five-year period of the

number that may result from a single, worst-case incident (eleven dolphins). While we do not necessarily believe that eleven Risso's dolphins would be captured in a single incident—and that more capture incidents involving fewer individuals could occur, as opposed to a single, worst-case incident—we believe that this is a reasonable approach to estimating potential incidents of M/SI + Level A while balancing what could happen in a worst-case scenario with the potential likelihood that no incidents of capture would actually occur. The historical capture of northern right whale dolphins in 2008 provides an instructive example of a situation where a worst-case scenario (six dolphins captured in a single trawl tow) did occur, but overall capture of this species was very rare (no other capture incidents before or since).

Separately, for those species that we believe may have a vulnerability to capture in given gear but that we do not believe may have a similar propensity to capture in that gear as a historically captured species, we assume that capture would be a rare event that could involve multiple individuals captured in a single incident or one or two individuals captured in one or two incidents. For example, from the LOF we infer vulnerability to capture in trawl gear for the Dall's porpoise but do not believe that this species has a similar propensity for interaction in

trawl gear as any historically captured species. Therefore, we assume that capture would represent a rare event that could occur in any year of the five-year period of authorization and may involve one or more individuals. For these species we authorize a total taking by M/SI + Level A of five individuals over the five-year timespan. These examples are provided to illustrate the process.

It is also possible that a captured animal may not be able to be identified to species with certainty. Certain pinnipeds and small cetaceans are difficult to differentiate at sea, especially in low-light situations or when a quick release is necessary. For example, a captured delphinid that is struggling in the net may escape or be freed before positive identification is made. Therefore, the SWFSC requested the authorization of incidental M/SI + Level A for two unidentified pinnipeds (one each in trawl and longline) and one unidentified small cetacean (in trawl only) over the course of the five-year period of authorization.

Table 2 summarizes total estimated take due to gear interaction in the CCE; these estimates are unchanged from those provided in our notice of proposed rulemaking (80 FR 8166; February 13, 2015). Please see that document for additional detail on the take estimation process and full rationale for determinations regarding species vulnerabilities.

TABLE 2—TOTAL ESTIMATED M/SI + LEVEL A DUE TO GEAR INTERACTION IN THE CCE, 2015–19

Species	Estimated 5-year total, midwater trawl ¹	Estimated 5-year total, pelagic longline ¹	Total, trawl + longline
<i>Kogia</i> spp. ²		1	1
Bottlenose dolphin (all stocks) ³		1	1
Bottlenose dolphin (CA/OR/WA offshore) ⁴	8		8
Bottlenose dolphin (CA coastal) ⁴	3		3
Striped dolphin	11	1	12
Short-beaked common dolphin	11	1	12
Long-beaked common dolphin	11	1	12
Pacific white-sided dolphin	35		35
Northern right whale dolphin	10		10
Risso's dolphin	11	1	12
Short-finned pilot whale		1	1
Harbor porpoise ⁴	5		5
Dall's porpoise	5		5
Northern fur seal ⁵	5		5
California sea lion	20	5	25
Steller sea lion	9	1	10
Harbor seal ⁴	9		9
Northern elephant seal	5		5
Unidentified pinniped	1	1	2
Unidentified cetacean	1		1

¹ Please see Table 1 and preceding text for derivation of take estimates.

² We expect that only one *Kogia* spp. may be taken over the five-year timespan and that it could be either a pygmy or dwarf sperm whale.

³ As a species believed to have similar propensity for capture in trawl gear as that demonstrated by the Pacific white-sided dolphin, we assume that eleven bottlenose dolphins could be captured over the five-year timespan. Total potential take of bottlenose dolphins in trawl gear has been apportioned by stock according to typical occurrence of that stock relative to SWFSC survey locations. We assume that a maximum of one total take of a bottlenose dolphin from either stock may occur in longline gear.

⁴ Incidental take may be of animals from any stock, excluding Washington inland waters stocks.

⁵ Incidental take may be of animals from either the eastern Pacific or California stocks.

Eastern Tropical Pacific—The SWFSC does not currently conduct longline surveys in the ETP, but plans to over the five-year period of authorization. The take estimates presented here reflect that likelihood. Assuming that longline surveys will be conducted in the ETP, the SWFSC anticipates that it will deploy an equal number (or less) of longline sets in the ETP relative to the number of sets currently being deployed in the CCE. The process described above for the CCE was used in determining vulnerability and appropriate take

estimates for species in the ETP. We assume that a similar level of interaction with pelagic longline gear as that demonstrated by the California sea lion in the CCE could occur in the ETP, and also assume that the South American sea lion may have similar propensity for interaction with longline gear as that demonstrated by the California sea lion.

For all other species listed in Table 3, we infer vulnerability to pelagic longline gear in the ETP from the 2014 LOF, and assume that capture would likely be a rare event occurring at most once over the five-year period proposed

for these regulations. We also authorize incidental M/SI + Level A for one unidentified pinniped over the course of the five-year period of authorization. Table 3 summarizes total estimated take due to gear interaction in the ETP; these estimates are unchanged from those provided in our notice of proposed rulemaking (80 FR 8166; February 13, 2015). Please see that document for additional detail on the take estimation process and full rationale for determinations regarding species vulnerabilities.

TABLE 3—TOTAL ESTIMATED M/SI + LEVEL A DUE TO GEAR INTERACTION IN THE ETP, 2015–19

Species	Estimated 5-year total, pelagic longline ¹
Dwarf sperm whale	1
Rough-toothed dolphin	1
Bottlenose dolphin	1
Striped dolphin	1
Pantropical spotted dolphin ²	1
Short-beaked common dolphin ²	1
Long-beaked common dolphin	1
Risso's dolphin	1
False killer whale	1
Short-finned pilot whale	1
California sea lion	5
South American sea lion	5
Unidentified pinniped	1

¹ Please see Tables 1 and preceding text for derivation of take estimates.

² Incidental take may be of animals from any stock.

Estimated Take Due to Acoustic Harassment

As described in our notice of proposed rulemaking (80 FR 8166; February 13, 2015; ‘Potential Effects of the Specified Activity on Marine Mammals’), we believe that SWFSC use of active acoustic sources has, at most, the potential to cause Level B harassment of marine mammals. In order to attempt to quantify the potential for Level B harassment to occur, NMFS (including the SWFSC and acoustics experts from other parts of NMFS) developed an analytical framework considering characteristics of the active acoustic systems described in our notice of proposed rulemaking (80 FR 8166; February 13, 2015) under *Description of Active Acoustic Sound Sources*, their expected patterns of use in each of the three SWFSC operational areas, and characteristics of the marine mammal species that may interact with them. We believe that this quantitative assessment benefits from its simplicity and consistency with current NMFS acoustic guidance regarding Level B harassment but caution that, based on a number of deliberately precautionary assumptions, the resulting take estimates should be seen as a likely

substantial overestimate of the potential for behavioral harassment to occur as a result of the operation of these systems.

The assessment paradigm for active acoustic sources used in SWFSC fisheries research is relatively straightforward and has a number of key simplifying assumptions. In particular, we do not consider marine mammal functional hearing ranges, and it is possible that certain species may not hear certain signals produced through SWFSC use of active acoustic sources. Therefore, and due to other simplifying assumptions, these exposure estimates may be conservative. 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, the appropriate threshold is 160 dB re 1 µPa (rms). Estimating the number of exposures at the specified received level requires several steps:

- (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. We described the approach used (including methods for estimating each of the calculations described above) and the assumptions made that result in conservative

estimates in significant detail in our notice of proposed rulemaking (80 FR 8166; February 13, 2015). There have been no changes made to the approach, the informational inputs, or the results.

Therefore, we do not repeat the discussion here and refer the reader to the notice. Summaries of the results are provided in Tables 4–6 below.

TABLE 4—DENSITIES AND ESTIMATED SOURCE-, STRATUM-, AND SPECIES-SPECIFIC ANNUAL ESTIMATES OF LEVEL B HARASSMENT IN THE CCE ¹

Species	Shallow	Deep	Area density (animals/km ²) ²	Volumetric density (animals/km ³) ³	Estimated Level B harassment, 0–200 m			Estimated Level B harassment, >200 m		Total
					EK60	ME70	SX90	EK60	SX90	
					Gray whale	X		40.01913	0.09565	
Humpback whale	X		0.00083	0.00415	4	1	9	0	0	14
Minke whale	X		0.00072	0.00360	4	1	8	0	0	13
Sei whale	X		0.00009	0.00045	0	0	1	0	0	1
Fin whale	X		0.00184	0.00920	10	3	20	0	0	33
Blue whale	X		0.00136	0.00680	7	2	15	0	0	24
Sperm whale		X	0.00170	0.00340	4	1	8	41	11	65
<i>Kogia</i> spp.		X	0.00109	0.00218	2	1	5	27	7	42
Cuvier's beaked whale		X	0.00382	0.00764	8	3	17	93	25	146
Baird's beaked whale		X	0.00088	0.00176	2	1	4	21	6	34
Mesoplodont beaked whales		X	0.00103	0.00206	2	1	5	25	7	40
Bottlenose dolphin	X		0.00178	0.00890	9	3	20	0	0	32
Striped dolphin	X		0.01667	0.08335	87	30	184	0	0	301
Long-beaked common dolphin	X		0.01924	0.09620	100	35	213	0	0	348
Short-beaked common dolphin	X		0.30935	1.54675	1,616	555	3,421	0	0	5,592
Pacific white-sided dolphin	X		0.02093	0.10465	109	38	231	0	0	378
Northern right whale dolphin	X		0.00975	0.04875	51	17	108	0	0	176
Risso's dolphin	X		0.01046	0.05230	55	19	116	0	0	188
Killer whale	X		0.00071	0.00355	4	1	8	0	0	13
Short-finned pilot whale		X	0.00031	0.00062	1	0	1	8	2	12
Harbor porpoise	X		⁵ 0.03775	0.18873	197	68	417	0	0	682
Dall's porpoise	X		0.07553	0.37765	395	135	835	0	0	1,365
Guadalupe fur seal	X		⁴ 0.00741	0.03705	39	13	82	0	0	134
Northern fur seal	X		⁴ 0.65239	1.68275	1,758	604	3,721	0	0	11,791
California sea lion	X		⁴ 0.29675	1.19000	1,243	427	2,632	0	0	5,363
Steller sea lion	X		⁴ 0.06316	0.29165	305	105	645	0	0	1,141
Harbor seal	X		⁴ 0.05493	0.25200	263	90	557	0	0	993
Northern elephant seal		X	⁴ 0.12400	0.24800	259	89	548	3,023	824	4,743

¹ Please see our notice of proposed rulemaking (80 FR 8166; February 13, 2015) for full details related to elements of this table.

² All density estimates from Barlow and Forney (2007) unless otherwise indicated.

³ Volumetric density estimates derived by dividing area density estimates by 0.2 km (for shallow species) or 0.5 km (for deep species), corresponding with defined depth strata.

⁴ Density estimates derived by SWFSC from SAR abundance estimates and notional study area of 1,000,000 km².

⁵ ManTech-SRS Technologies (2007) estimated a harbor porpoise density for coastal and inland waters of Washington, which is used as the best available proxy here. There are no known density estimates for harbor porpoises in SWFSC survey areas in the CCE.

TABLE 5—DENSITIES AND ESTIMATED SOURCE-, STRATUM-, AND SPECIES-SPECIFIC ANNUAL ESTIMATES OF LEVEL B HARASSMENT IN THE ETP ¹

Species	Shallow	Deep	Area density (animals/km ²) ²	Volumetric density (animals/km ³) ³	Estimated Level B harassment, 0–200 m			Estimated Level B harassment, >200 m		Total
					EK60	ME70	SX90	EK60	SX90	
					Humpback whale	X		0.00013	0.00067	
Minke whale	X		⁴ 0.00001	0.00003	0	0	0	0	0	0
Bryde's whale	X		0.00049	0.00244	2	0	2	0	0	4
Sei whale	X		0.00000	0.00000	0	0	0	0	0	0
Fin whale	X		0.00003	0.00015	0	0	0	0	0	0
Blue whale	X		⁴ 0.00019	0.00097	1	0	1	0	0	2
Sperm whale		X	⁴ 0.00019	0.00039	0	0	0	4	0	4

TABLE 5—DENSITIES AND ESTIMATED SOURCE-, STRATUM-, AND SPECIES-SPECIFIC ANNUAL ESTIMATES OF LEVEL B HARASSMENT IN THE ETP ¹—Continued

Species	Shallow	Deep	Area density (animals/km ²) ²	Volumetric density (animals/km ³) ³	Estimated Level B harassment, 0–200 m			Estimated Level B harassment, >200 m		Total
					EK60	ME70	SX90	EK60	SX90	
Dwarf sperm whale		X	⁴ 0.00053	0.00105	1	0	1	11	1	14
Cuvier's beaked whale		X	⁴ 0.00094	0.00187	2	0	1	19	2	24
Longman's beaked whale		X	⁵ 0.00004	0.00007	0	0	0	1	0	1
Mesoplodont beaked whales		X	⁴ 0.00119	0.00237	2	0	1	25	2	30
Rough-toothed dolphin	X		0.00504	0.02521	25	4	16	0	0	45
Bottlenose dolphin	X		0.01573	0.07864	78	13	48	0	0	139
Striped dolphin	X		0.04516	0.22582	223	39	139	0	0	401
Pantropical spotted dolphin	X		⁶ 0.12263	0.61315	606	105	377	0	0	1,088
Spinner dolphin	X		⁷ 0.04978	0.24889	246	43	153	0	0	442
Long-beaked common dolphin	X		0.01945	0.09725	96	17	60	0	0	173
Short-beaked common dolphin	X		⁸ 0.14645	0.73227	723	126	451	0	0	1,300
Fraser's dolphin	X		⁴ 0.01355	0.06774	67	12	42	0	0	121
Dusky dolphin	X		0.00210	0.01050	10	2	6	0	0	18
Risso's dolphin	X		0.00517	0.02587	26	4	16	0	0	46
Melon-headed whale	X		⁴ 0.00213	0.01063	10	2	7	0	0	19
Pygmy killer whale ...	X		⁴ 0.00183	0.00913	9	2	6	0	0	17
False killer whale	X		⁴ 0.00186	0.00932	9	2	6	0	0	17
Killer whale	X		⁴ 0.00040	0.00199	2	0	1	0	0	3
Short-finned pilot whale		X	⁴ 0.02760	0.05520	55	9	34	574	51	723
Guadalupe fur seal ...	X		⁹ 0.00741	0.03705	37	6	23	0	0	66
California sea lion	X		¹⁰ 0.16262	0.81310	803	139	500	0	0	1,442
South American sea lion	X		¹⁰ 0.16262	0.81310	803	139	500	0	0	1,442
Northern elephant seal		X	⁹ 0.12400	0.24800	245	43	153	2,578	229	3,248

¹ Please see our notice of proposed rulemaking (80 FR 8166; February 13, 2015) for full details related to elements of this table.

² Please see footnotes to Table 4 in our notice of proposed rulemaking (80 FR 8166; February 13, 2015); densities calculated by SWFSC from sources listed. Note that values presented here are rounded to five digits, whereas the volumetric densities are calculated from the unrounded values. Densities derived from abundance estimates given in Gerrodette *et al.* (2008) calculated using given abundances divided by ETP area (sum of stratum areas given in first line of Table 1 in that publication). Densities calculated by SWFSC from abundance estimates reported in Wade and Gerrodette (1993) or, for those not reported in that publication, calculated from sighting data collected on board SWFSC cetacean and ecosystem assessment surveys in the ETP during 1998–2000, 2003, and 2006 using number of sightings (n), mean group size (s), total distance on effort (L) and effective strip width (w) (*i.e.*, $D = n*s/2*w/L$).

³ Volumetric density estimates derived by dividing area density estimates by 0.2 km (for shallow species) or 0.5 km (for deep species), corresponding with defined depth strata.

⁴ The most recent abundance estimates are as reported in Table 4 in our notice of proposed rulemaking (80 FR 8166; February 13, 2015). SWFSC considered these species sufficiently rare in the core study area during 2006 survey effort to not warrant attempting to estimate abundance (Gerrodette *et al.*, 2008), but did estimate the unpublished ETP densities reported here.

⁵ The most recent abundance estimate was reported in Barlow (2006) (see Table 4 in our notice of proposed rulemaking (80 FR 8166; February 13, 2015)). SWFSC estimated the unpublished ETP density reported here from sighting data collected during SWFSC surveys in 1998–2000, 2003, and 2006.

⁶ Given density is for northeastern offshore stock of pantropical spotted dolphins, and is calculated as stock abundance divided by the summed areas of Core, Core2, and N. Coastal strata (Gerrodette *et al.*, 2008). This is the largest density value for the three stocks of spotted dolphin in the ETP and is conservatively used here to calculate potential Level B takes of spotted dolphin in the ETP.

⁷ Given density is for the eastern stock of spinner dolphins. This is the largest density value for the three stocks of spinner dolphin in the ETP and is conservatively used here to calculate potential Level B takes of spinner dolphin in the ETP. There is no estimate of abundance for the Central American stock of spinner dolphins.

⁸ Abundance estimate from which density estimate is derived includes parts of northern and southern stocks and all of the central stock (Gerrodette *et al.*, 2008). There are no stock-specific abundance estimates.

⁹ No abundance information exists for Guadalupe fur seals or northern elephant seals in the ETP. Therefore, we use density estimates from the CCE (Table 4) as a reasonable proxy.

¹⁰ There are no available density estimates for California sea lions or South American sea lions in the ETP. The SWFSC reports that California sea lions are typically observed in the ETP only along the coast of Baja California, Mexico. Therefore, we estimate density for the California sea lion in the ETP using the upper bound of abundance for western Baja California (87,000; Lowry and Maravilla-Chavez, 2005) divided by the area of the N. Coastal stratum from Gerrodette *et al.*, (2008). In the absence of other information, we use this value as a reasonable proxy for the South American sea lion.

TABLE 6—DENSITIES AND ESTIMATED SOURCE-, STRATUM-, AND SPECIES-SPECIFIC ANNUAL ESTIMATES OF LEVEL B HARASSMENT IN THE AMLR ¹

Species	Shallow	Deep	Area density (animals/km ²)	Volumetric density (animals/km ³) ²	Estimated Level B harassment, 0–200 m	Estimated Level B harassment, >200 m	Total
					EK60	EK60	
Southern right whale	X		³ 0.0008	0.004	1	0	1
Humpback whale	X		³ 0.0676	0.338	92	0	92
Antarctic minke whale	X		³ 0.0043	0.0215	6	0	6
Fin whale	X		³ 0.08391	0.41955	114	0	114
Blue whale	X		⁴ 0.00012	0.0006	0	0	0
Sperm whale		X	⁴ 0.00065	0.0013	0	3	3
Arnoux' beaked whale		X	⁵ 0.0065	0.013	4	33	37
Southern bottlenose whale		X	³ 0.0065	0.013	4	33	37
Hourglass dolphin	X		³ 0.0086	0.043	12	0	12
Killer whale	X		³ 0.0077	0.0385	11	0	11
Long-finned pilot whale		X	³ 0.00757	0.01514	4	39	43
Spectacled porpoise	X		⁶ 0.0086	0.043	12	0	12
Antarctic fur seal	X		³ 0.09996	0.4998	136	0	136
Southern elephant seal		X	³ 0.0006	0.0012	0	3	3
Weddell seal	X		³ 0.0007	0.0035	1	0	1
Crabeater seal	X		³ 0.0013	0.0065	2	0	2
Leopard seal	X		³ 0.0009	0.0045	1	0	1

¹ Please see our notice of proposed rulemaking (80 FR 8166; February 13, 2015) for full details related to elements of this table.

² Volumetric density estimates derived by dividing area density estimates by 0.2 km (for shallow species) or 0.5 km (for deep species), corresponding with defined depth strata.

³ Densities are the largest values recorded during AMLR surveys from 2006/07 through 2010/11. Please see Table 24.

⁴ See footnotes to Table 5; densities calculated by SWFSC from sources listed.

⁵ There is no available information for this species; therefore, we use the southern bottlenose whale as source of proxy information. However, this species is considered uncommon relative to the southern bottlenose whale (Taylor *et al.*, 2008); therefore, this is a conservative estimate.

⁶ There is no available information for this species; therefore, we use the hourglass dolphin as source of proxy information. However, although considered to potentially have a circumpolar sub-Antarctic distribution, this species is seen only rarely at sea (Hammond *et al.*, 2008) and use of this value likely produces a conservative estimate.

Estimated Take Due to Physical Disturbance, Antarctic

Estimated take due to physical disturbance could potentially happen in the AMLR only as a result of the unintentional approach of SWFSC vessels to pinnipeds hauled out on ice,

and would result in no greater than Level B harassment. During Antarctic ecosystem surveys conducted in the austral winter (*i.e.*, June 1 through August 31), it is expected that shipboard activities may result in behavioral disturbance of some pinnipeds. It is likely that some pinnipeds on ice will

move or flush from the haul-out into the water in response to the presence or sound of SWFSC survey vessels. Behavioral responses may be considered according to the scale shown in Table 7. We consider responses corresponding to Levels 2–3 to constitute Level B harassment.

TABLE 7—SEAL RESPONSE TO DISTURBANCE

Level	Type of response	Definition
1	Alert	Head orientation in response to disturbance. This may include turning head towards the disturbance, craning head and neck while holding the body rigid in a u-shaped position, or changing from a lying to a sitting position.
2	Movement	Movements away from the source of disturbance, ranging from short withdrawals over short distances to hurried retreats many meters in length.
3	Flight	All retreats (flushes) to the water, another group of seals, or over the ice.

The SWFSC has estimated potential incidents of Level B harassment due to physical disturbance (Table 8) using the vessel distance traveled (20,846 km) during a typical AMLR survey, an effective strip width of 200 m (animals are assumed to react if they are less than 100 m from the vessel; see below), and the estimated population density for each species (Table 6). Although there is likely to be variation between individuals and species in reactions to a passing research vessel—that is, some

animals assumed to react in this calculation will not react, and others assumed not to react because they are outside the effective strip width may in fact react—we believe that this approach is a reasonable effort towards accounting for this potential source of disturbance and have no information to indicate that the approach is biased either negatively or positively. SWFSC used an effective strip width of 200 m (*i.e.*, 100 m on either side of a passing vessel) to be consistent with the regional

marine mammal viewing guidelines that NMFS has established for Alaska, which restrict approaches to marine mammals to a distance of 100 m or greater in order to reduce the potential to cause inadvertent harm. Alaska is believed to have the most similar environment to the Antarctic of all regions for which NMFS has established viewing guidelines. Each estimate is the product of the species-specific density, annual line-kilometers, and the effective strip-width.

TABLE 8—ESTIMATED ANNUAL LEVEL B HARASSMENT OF PINNIPEDS ASSOCIATED WITH AMLR VESSEL TRANSECTS

Species	Density (animals/km ²)	Estimated Level B harassment
Antarctic fur seal	0.09996	417
Southern elephant seal	0.0006	3
Weddell seal	0.0007	3
Crabeater seal	0.0013	5
Leopard seal	0.0009	4

Summary of Estimated Incidental Take

Here we provide summary tables detailing the total incidental take

authorization on an annual basis for each specified geographical region, as

well as other information relevant to the negligible impact analyses.

TABLE 9—SUMMARY INFORMATION RELATED TO ANNUAL TAKE AUTHORIZATION IN THE CCE, 2015–19

Species ¹	Total annual Level B harassment authorization	Percent of estimated population	Total M/SI + Level A authorization, 2015–19	Estimated maximum annual M/SI + Level A ²	PBR ³	% PBR ⁴	Stock trend ⁵
Gray whale	346	1.8	0	0	n/a	—	↑
Humpback whale	14	0.7	0	0	n/a	—	↑
Minke whale	13	2.7	0	0	n/a	—	?
Sei whale	1	0.8	0	0	n/a	—	?
Fin whale	33	1.1	0	0	n/a	—	↑
Blue whale	24	1.5	0	0	n/a	—	?
Sperm whale	65	6.7	0	0	n/a	—	?
<i>Kogia</i> spp.	42	7.3	1	0.2	2.7	7.4	?
Cuvier's beaked whale	146	2.2	0	0	n/a	—	↓
Baird's beaked whale	34	4.0	0	0	n/a	—	?
Mesoplodont beaked whales	40	5.7	0	0	n/a	—	↓
Bottlenose dolphin (all stocks) ⁶	32	n/a	1	n/a	n/a	—	n/a
Bottlenose dolphin (CA/OR/WA offshore) ⁶	32	⁹ 3.2	8	2	5.5	36.4	?
Bottlenose dolphin (CA coastal) ⁶	32	⁹ 9.9	3	1	2.4	41.7	→
Striped dolphin	301	2.8	12	2.6	82	3.2	?
Long-beaked common dolphin	348	0.3	12	2.6	610	0.4	↑
Short-beaked common dolphin	5,592	1.4	12	2.6	3,440	0.1	?
Pacific white-sided dolphin ..	378	1.4	35	7.2	171	4.2	?
Northern right whale dolphin	176	2.1	10	2.2	48	4.6	?
Risso's dolphin	188	3.0	12	2.6	39	6.7	?
Killer whale ⁷	13	15.3	0	0	n/a	—	?
Short-finned pilot whale	12	1.6	1	0.2	4.6	4.3	?
Harbor porpoise ⁷	682	23.4	5	1.2	21	5.7	?
Dall's porpoise	1,365	3.3	5	1.2	257	0.5	?
Guadalupe fur seal	134	1.8	0	0	n/a	—	↑
Northern fur seal ⁷ (PI/EP) ...	⁸ 11,555	1.8	5	1.2	403	0.3	↑
Northern fur seal ⁷ (CA)	⁸ 236	1.8					
California sea lion	5,363	1.8	25	5.4	9,200	0.1	↑
Steller sea lion	1,141	¹⁰ 1.8	10	2.4	1,552	0.2	↑
Harbor seal ⁷	993	4.0	9	2	1,343	0.1	↑/→
Northern elephant seal	4,743	3.8	5	1.2	4,382	0.03	↑
Unidentified cetacean	n/a	n/a	1	n/a	n/a	—	n/a
Unidentified pinniped	n/a	n/a	2	n/a	n/a	—	n/a

Please see preceding text and tables and our notice of proposed rulemaking (80 FR 8166; February 13, 2015) for details.

¹ For species with multiple stocks in CCE or for species groups (*Kogia* spp. and Mesoplodont beaked whales), indicated level of take could occur to individuals from any stock or species (not including Washington inland waters stocks of harbor porpoise and harbor seal).

² This column represents the total number of incidents of M/SI + Level A that could potentially accrue to the specified species or stock and is the number carried forward for evaluation in the negligible impact analysis (later in this document). To reach this total, we add one to the total for each pinniped or cetacean that may be captured in trawl gear and one to the total for each pinniped that may be captured in longline gear. This represents the potential that the take of an unidentified pinniped or small cetacean could accrue to any given stock captured in that gear. The take authorization is formulated as a five-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 See Table 3 in our notice of proposed rulemaking (80 FR 8166; February 13, 2015) and following discussion for more detail regarding PBR.

⁴ Estimated maximum annual M/SI + Level A expressed as a percentage of PBR.

⁵ See relevant SARs for more information regarding stock status and trends. Interannual increases may not be interpreted as evidence of a trend. For harbor seals, the CA stock is increasing, while the OR/WA coastal stock may have reached carrying capacity and appears stable. There are no evident trends for any harbor porpoise stock or for offshore killer whales.

⁶ Total potential take of bottlenose dolphins in trawl gear has been apportioned by stock according to typical occurrence of that stock relative to SWFSC survey locations. We assume that only one total take of a bottlenose dolphin from either stock may occur in longline gear; therefore the estimated annual maximum numbers for bottlenose dolphin reflect the stock-specific trawl estimate plus one for the longline take plus one for the potential take of an unidentified cetacean.

⁷ These species have multiple stocks in the CCE. Values for “percent of estimated population” and “PBR” (where relevant) calculated for the stock with the lowest population abundance and/or PBR (as appropriate). This approach assumes that all indicated takes would accrue to the stock in question, which is a very conservative assumption. Stocks in question are the southern resident killer whale, Morro Bay harbor porpoise, California northern fur seal, and OR/WA coastal harbor seal.

⁸ Calculated on the basis of relative abundance; *i.e.*, of 6,083 total estimated incidents of Level B harassment, we would expect on the basis of relative abundance in the study area that 98 percent would accrue to the Pribilof Islands/Eastern Pacific stock and two percent would accrue to the California stock.

⁹ Calculated assuming that all 32 estimated annual incidents of Level B harassment occur to a given stock.

¹⁰ A range is provided for Steller sea lion abundance. We have used the lower bound of the given range for calculation of this value.

TABLE 10—ANNUAL TAKE AUTHORIZATION IN THE ETP, 2015–19

Species ¹	Total annual Level B harassment authorization	Percent of estimated population ¹	Total M/SI + Level A authorization, 2015–19	Estimated maximum annual M/SI + Level A ²	PBR ³	% PBR ⁴
Humpback whale	1	0.04	0	0	n/a	—
Minke whale	0	0	0	0	n/a	—
Bryde’s whale	4	0.04	0	0	n/a	—
Sei whale	0	0	0	0	n/a	—
Fin whale	0	0	0	0	n/a	—
Blue whale	2	0.1	0	0	n/a	—
Sperm whale	4	0.1	0	0	n/a	—
Dwarf sperm whale	14	0.1	1	0.2	88 (0.2)	0.2
Cuvier’s beaked whale	24	0.1	0	0	n/a	—
Longman’s beaked whale	1	0.1	0	0	n/a	—
Mesoplodont beaked whales	30	0.1	0	0	n/a	—
Rough-toothed dolphin	45	0.04	1	0.2	897 (0.02)	0.02
Bottlenose dolphin	139	0.04	1	0.2	2,850 (0.01)	0.01
Striped dolphin	401	0.04	1	0.2	8,116 (0.002)	0.002
Pantropical spotted dolphin	1,088	⁵ 0.4	1	0.2	12,334 (0.002)	0.002
Spinner dolphin	442	⁵ 0.1	0	0	n/a	—
Long-beaked common dolphin	173	0.05	1	0.2	2,787 (0.01)	0.01
Short-beaked common dolphin	1,300	0.04	1	0.2	25,133 (0.001)	0.001
Fraser’s dolphin	121	0.04	0	0	n/a	—
Dusky dolphin	18	0.04	0	0	n/a	—
Risso’s dolphin	46	0.04	1	0.2	831 (0.02)	0.02
Melon-headed whale	19	0.04	0	0	n/a	—
Pygmy killer whale	17	0.04	0	0	n/a	—
False killer whale	17	0.04	1	0.2	244 (0.1)	0.1
Killer whale	3	0.04	0	0	n/a	—
Short-finned pilot whale	723	0.1	1	0.2	4,751 (0.004)	0.004
Guadalupe fur seal	66	⁶ 0.9	0	0	n/a	—
California sea lion	1,442	1.4	5	1.2	1,050 (0.1)	0.1
South American sea lion	1,442	1.0	5	1.2	1,500 (0.1)	0.1
Northern elephant seal	3,248	⁶ 2.6	0	0	n/a	—
Unidentified pinniped	n/a	n/a	1	n/a	n/a	—

Please see preceding text and tables and our notice of proposed rulemaking (80 FR 8166; February 13, 2015) for details.

¹ For species with multiple stocks in ETP or for species groups (Mesoplodont beaked whales), indicated level of take could occur to individuals from any stock or species.

² This column represents the total number of incidents of M/SI + Level A that could potentially accrue to the specified species and is the number carried forward for evaluation in the negligible impact analysis (later in this document). To reach this total, we add one to the total for each pinniped that may be captured in longline gear. This represents the potential that the take of an unidentified pinniped could accrue to any given species captured in that gear. The take authorization is formulated as a five-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.

² For M/SI + Level A resulting from gear interaction, a five-year take estimate was developed. Annual take estimate presented for reference; we recognize that portions of animals may not be captured or entangled in gear. For purposes of negligible impact analysis (later in this document), we add authorized takes for unidentified pinnipeds to total for all relevant species.

³ PBR values calculated by SWFSC; a pooled PBR was calculated for all stocks of the pantropical spotted dolphin (see Table 4 in our notice of proposed rulemaking (80 FR 8166; February 13, 2015)).

⁴ Estimated maximum annual M/SI + Level A expressed as a percentage of PBR.

⁵ Evaluated against the stock with the lowest estimated abundance. For spinner dolphin, there is no abundance estimate for the Central American stock.

⁶ There are no abundance estimates for these species in the ETP. We use the CCE abundance estimates as proxies in these calculations.

TABLE 11—ANNUAL TAKE AUTHORIZATION IN THE AMLR, 2015–19

Species	Estimated annual Level B harassment (acoustic exposure)	Estimated annual Level B harassment (on-ice disturbance)	Total annual Level B harassment authorization	Percent of estimated population ¹
Southern right whale	1	0	1	0.1
Humpback whale	92	0	92	1.0
Antarctic minke whale	6	0	6	0.03
Fin whale	114	0	114	2.4
Blue whale	0	0	0	0
Sperm whale	3	0	3	0.02
Arnoux' beaked whale ²	37	0	37	n/a
Southern bottlenose whale	37	0	37	0.1
Hourglass dolphin	12	0	12	0.01
Killer whale	11	0	11	0.04
Long-finned pilot whale	43	0	43	0.02
Spectacled porpoise ²	12	0	12	n/a
Antarctic fur seal	136	417	553	0.02
Southern elephant seal	3	3	6	0.001
Weddell seal	1	3	4	³ 0.001
Crabeater seal	2	5	7	³ 0.0001
Leopard seal	1	4	5	³ 0.002

Please see preceding text and tables and our notice of proposed rulemaking (80 FR 8166; February 13, 2015) for details.

¹ See Table 5 in our notice of proposed rulemaking (80 FR 8166; February 13, 2015) for abundance information.

² There is no available abundance information for these species. See “Small Numbers Analyses” below for further discussion.

³ A range is provided for these species' abundance. We have used the lower bound of the given range for calculation of these values.

Analyses and Determinations

Here we provide separate negligible impact analyses and small numbers analyses for each of the three specified geographical regions for which we issue regulations. We received no public comments or new information indicating any deficiencies in our preliminary determinations, as provided in our notice of proposed rulemaking (80 FR 8166; February 13, 2015). Those determinations and associated analyses are reproduced here.

Negligible Impact Analyses

NMFS has defined “negligible impact” in 50 CFR 216.103 as “. . . an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.” 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. We also evaluate the number, intensity,

and context of estimated takes by evaluating this information relative to population status. The impacts from other past and ongoing anthropogenic activities are incorporated into these analyses via their impacts on the environmental baseline (*e.g.*, as reflected in the density/distribution and status of the species, population size and growth rate).

To avoid repetition, the majority of our analysis applies to all the species listed in Tables 3–5 of the notice of proposed rulemaking (80 FR 8166; February 13, 2015), given that the anticipated effects of SWFSC’s research activities on marine mammals are expected to be relatively similar in nature. Where there are meaningful differences between species or stocks, or groups of species, in anticipated individual responses to activities, impact of expected take on the population due to differences in population status, or impacts on habitat, they are described independently in the analysis below.

In 1988, Congress amended the MMPA, with provisions for the 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 set allowable take levels incidental to commercial fishing operations led NMFS to suggest a new and simpler conceptual means for assuring that incidental take does not cause any marine mammal species or stock to be reduced or to be maintained

below the lower limit of its Optimum Sustainable Population (OSP) level. That concept (Potential Biological Removal; PBR) was incorporated in the 1994 amendments to the MMPA, wherein Congress enacted MMPA sections 117 and 118, establishing a new regime governing the incidental taking of marine mammals in commercial fishing operations and stock assessments.

PBR, which is defined by the MMPA (16 U.S.C. 1362(20)) 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 one tool that can be used to help evaluate the effects of M/SI on a marine mammal stock. OSP is defined by the MMPA (16 U.S.C. 1362(9)) 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.” A primary goal of the MMPA is to ensure that each stock of marine mammal either does not have a level of human-caused M/SI that is likely to cause the stock to be reduced below its OSP level or, if the stock is depleted (*i.e.*, below its OSP level), does not have a level of human-caused mortality and serious injury that is likely to delay restoration of the stock to OSP level by more than ten percent in comparison with recovery time in the absence of human-caused M/SI.

PBR appears within the MMPA only in section 117 (relating to periodic stock assessments) and in portions of section 118 describing requirements for take reduction plans for reducing marine mammal bycatch in commercial fisheries. PBR was not designed as an absolute threshold limiting human activities, but as a means to evaluate the relative impacts of those activities on marine mammal stocks. Specifically, assessing M/SI relative to a stock's PBR may signal to NMFS the need to establish take reduction teams in commercial fisheries and may assist NMFS and existing take reduction teams in the identification of measures to reduce and/or minimize the taking of marine mammals by commercial fisheries to a level below a 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 may prioritize working with a take reduction team to further mitigate the effects of fishery activities via additional bycatch reduction measures.

Since the introduction of PBR, NMFS has used the concept almost entirely within the context of implementing sections 117 and 118 and other commercial fisheries management-related provisions of the MMPA, including those within section 101(a)(5)(E) related to the taking of ESA-listed marine mammals incidental to commercial fisheries (64 FR 28800; May 27, 1999). The MMPA requires that PBR be estimated in stock assessment reports 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), but nothing in the MMPA requires the application of PBR outside the management of commercial fisheries interactions with marine mammals. Although NMFS has not historically applied PBR outside the context of sections 117 and 118, NMFS recognizes that as a quantitative tool, PBR may be useful in certain instances for evaluating the impacts of other human-caused activities on marine mammal stocks. In this analysis, we consider incidental M/SI relative to PBR for each affected stock, in addition to considering the interaction of those removals with incidental taking of that stock by harassment, within our evaluation of the likely impacts of the proposed activities on marine mammal stocks and in determining whether those impacts are likely to be negligible. Our use of PBR in this case does not make up the entirety of our impact assessment, but

rather is being utilized as a known, quantitative metric for evaluating whether the proposed activities are likely to have a population-level effect on the affected marine mammal stocks. For the purposes of analyzing this specified activity, NMFS acknowledges that some of the fisheries research activities use similar gear and may have similar effects, but on a smaller scale, as marine mammal take by commercial fisheries. The application of PBR for this specified activity of fisheries research allows NMFS to inform the take reduction team process which uses PBR to evaluate marine mammal bycatch in commercial fisheries due to the similarities of both activities.

California Current Ecosystem—Please refer to Table 9 for information relating to this analysis. As described in greater depth previously (see “Acoustic Effects”, in our notice of proposed rulemaking (80 FR 8166; February 13, 2015)), we do not believe that SWFSC use of active acoustic sources has the likely potential to cause any effect exceeding Level B harassment of marine mammals. In addition, for the majority of species, the authorized annual take by Level B harassment is very low in relation to the population abundance estimate (less than ten percent) for each stock.

We have produced what we believe to be conservative estimates of potential incidents of Level B harassment. The procedure for producing these estimates, described in detail in our notice of proposed rulemaking (80 FR 8166; February 13, 2015) and summarized above in “Estimated Take Due to Acoustic Harassment”, represents NMFS’ best effort towards balancing the need to quantify the potential for occurrence of Level B harassment due to production of underwater sound with 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 SWFSC operates. The sources considered here have moderate to high output frequencies (10 to 180 kHz), generally short ping durations, and are typically focused (highly directional) 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 proposed take authorization.

In particular, low-frequency hearing specialists (*i.e.*, mysticetes) and certain pinnipeds (*i.e.*, otariids) are less likely to perceive or, given perception, to react to these signals than the quantitative estimates indicate. These groups have reduced functional hearing at the higher frequencies produced by active acoustic sources considered here (*e.g.*, primary operating frequencies of 40–180 kHz) and, based purely on their auditory capabilities, the potential impacts are likely much less (or non-existent) than we have calculated as these relevant factors are not taken into account.

However, for purposes of this analysis, we assume that the take levels proposed for authorization will occur. As described previously, there is some minimal potential for temporary effects to hearing for certain marine mammals (*i.e.*, odontocete cetaceans), 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.*, Southall *et al.*, 2007). There is the potential for behavioral reactions of greater severity, including displacement, but because of the directional nature of the sources considered here and because the source is itself moving, these outcomes are unlikely and would be of short duration if they did occur. 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 SWFSC survey effort is widely dispersed in space and time, indicate that repeated exposures of the same individuals would be very unlikely.

We now consider the level of taking by M/SI + Level A proposed for authorization. First, it is likely that required injury determinations will show some undetermined number of gear interactions to result in Level A harassment rather than serious injury and that, therefore, our authorized take numbers are overestimates with regard solely to M/SI. In addition, we note that these take levels are likely precautionary overall when considering that: (1) Estimates for historically taken species were developed assuming that the annual average number of takes from 2008–12, which is heavily influenced by

inclusion of a year where dramatically more marine mammals were incidentally taken than any other year on record, would occur in each year from 2015–19; and that (2) the majority of species for which take authorization is proposed have never been taken in SWFSC surveys.

However, assuming that all of the takes proposed for authorization actually occur, we assess these quantitatively by comparing to the calculated PBR for each stock. Estimated M/SI for all stocks is significantly less than PBR (below ten percent, even when making the unlikely assumption that all takes for species with multiple stocks would accrue to the stock with the lowest PBR) with the exception of the two bottlenose dolphin stocks. The annual average take by M/SI + Level A for these stocks—which for each assumes that the single take of a bottlenose dolphin in longline gear that is proposed for authorization occurs for that stock, as well as that the single take of an unidentified cetacean proposed for authorization occurs—is, however, well below the PBR (takes representing 36 and 42 percent). We also note that, for the California coastal stock, the PBR is likely biased low because the population abundance estimate, which is based on photographic mark-recapture surveys, does not reflect that approximately 35 percent of dolphins encountered lack identifiable dorsal fin marks (Defran and Weller, 1999). If 35 percent of all animals lack distinguishing marks, then the true population size (and therefore PBR) would be approximately 450–500 animals (*i.e.*, approximately forty–fifty percent larger than the current estimate) (Carretta *et al.*, 2015). The California coastal stock is believed to be stable, based on abundance estimates from 1987–89, 1996–98, and 2004–05 (Dudzik *et al.*, 2006), and current annual human-caused M/SI is considered to be insignificant and approaching zero (Carretta *et al.*, 2015). No population trends are known for the offshore stock. However, these proposed levels of take do not take into consideration the potential efficacy of the mitigation measures proposed by the SWFSC. Although potentially confounded by other unknown factors, incidental take of marine mammals in SWFSC survey gear (particularly trawl nets) has decreased significantly from the high in 2008 since the measures proposed here were implemented in 2009. We believe this demonstrates the likely potential for reduced takes of any species, including bottlenose dolphins, relative to these take estimates which are formulated

based on the level of taking that occurred in 2008.

For certain species of greater concern, we also evaluate the proposed take authorization for Level B harassment in conjunction with that proposed for M/SI + Level A. For the bottlenose dolphin, if all acoustic takes occurred to a single stock, it would comprise 9.9 percent of the California coastal stock and only 3.2 percent of the offshore stock. However, it is unlikely that all of these takes would accrue to a single stock and the significance of this magnitude of Level B harassment is even lower. We do not consider the proposed level of acoustic take for bottlenose dolphin to represent a significant additional population stressor when considered in context with the proposed level of take by M/SI + Level A. Harbor porpoise are known to demonstrate increased sensitivity to acoustic signals in the frequency range produced by some SWFSC active acoustic sources (see discussion above under “Acoustic Effects”). The total annual taking by Level B harassment proposed for authorization for harbor porpoise would likely be distributed across all five stocks of this species that occur in the CCE. Moreover, because the SWFSC does not regularly operate the surveys described above within the confines of Morro Bay, Monterey Bay, or San Francisco Bay, and because SWFSC survey effort is sparsely distributed in space and time, we would expect any incidents of take occurring to animals of those stocks to be transient events, largely occurring to individuals of those populations occurring outside those bays but within the general limit of harbor porpoise occurrence (*i.e.*, the 200-m isobath). Finally, approximately 95 percent of annual SWFSC line-kilometers traveled using active acoustic sources are beyond the 200-m isobaths. This was not taken into account in the calculation of acoustic take estimates; therefore, these estimates are likely substantial overestimates of the number of incidents of Level B harassment that may occur for harbor porpoise.

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 planned mitigation measures, we find that the total marine mammal take from SWFSC’s fisheries research activities will have a negligible impact on the affected marine mammal species or stocks in the California Current Ecosystem. In summary, this finding of negligible impact is founded on the following factors: (1) The possibility of

injury, serious injury, or mortality from the use of active acoustic devices may reasonably be considered discountable; (2) the anticipated incidents of Level B harassment from the use of active acoustic devices consist of, at worst, temporary and relatively minor modifications in behavior; (3) the predicted number of incidents of combined Level A harassment, serious injury, and mortality are at insignificant levels relative to all affected stocks but two; (4) the predicted number of incidents of both Level B harassment and potential M/SI likely represent overestimates; and (5) the presumed efficacy of the planned mitigation measures in reducing the effects of the specified activity to the level of least practicable adverse impact. In addition, no M/SI is proposed for authorization for any species or stock that is listed under the ESA or considered depleted under the MMPA. In combination, we believe that these factors demonstrate that the specified activity will have only short-term effects on individuals (resulting from Level B harassment) and that the total level of taking will not impact rates of recruitment or survival sufficiently to result in population-level impacts.

Eastern Tropical Pacific—Please refer to Table 10 for information relating to this analysis. The entirety of the qualitative discussion provided above for the California Current Ecosystem is applicable to SWFSC use of active acoustic sources in the ETP, and is not repeated here. As for the CCE, we compare the maximum annual take estimate to the calculated PBR level. However, proposed take by M/SI + Level A is substantially less than one percent (in most cases, less than a tenth of a percent) of population abundance for all species for which such take is proposed to be authorized and, as for the CCE, these proposed levels of take are likely overestimates. We do propose to authorize one occurrence of M/SI over five years for the pantropical spotted dolphin; two of the three stocks of this species in the ETP are considered depleted under the MMPA. Therefore, although the maximum annual take estimate for this species is extremely low relative to the PBR level (0.002 percent), we provide additional discussion.

In the ETP, yellowfin tuna are known to associate with several species of dolphin, including spinner, spotted, and common dolphins. As the ETP tuna purse-seine fishery began in the late 1950s, incidental take of dolphins increased to very high levels and continued through the 1960s and into the 1970s (Perrin, 1969). Through a

series of combined actions, including passage of the MMPA in 1972, subsequent amendments, regulations, and mitigation measures, dolphin bycatch in the ETP has since decreased 99 percent in the international fishing fleet, and was eliminated by the U.S. fleet (Gerrodette and Forcada, 2005). However, the northeastern offshore and coastal stocks of spotted dolphin are believed to have declined roughly eighty and sixty percent, respectively, from pre-exploitation abundance estimates (Perrin, 2009). Although incidental take by the international fishing fleet is believed to have declined to the low hundreds of individuals annually (Perrin, 2009), the populations have not grown toward recovery as rapidly as expected (*e.g.*, the population trend for the northeastern offshore stock is flat; Wade *et al.*, 2007). Continued (non-lethal) chase and capture in the fishery may have an indirect effect on fecundity or survival, or there may have been a change in carrying capacity of the ecosystem for this species (Archer *et al.*, 2004; Gerrodette and Forcada, 2005; Wade *et al.*, 2007; Perrin, 2009). Nevertheless, the proposed authorized take of a single pantropical spotted dolphin over five years—which could occur to either the northeastern offshore or coastal stocks, or the non-depleted western and southern offshore stock—represents a negligible impact to any of these stocks, even when considered in context with incidental take in international commercial fisheries (the total taking, which is known only approximately, would likely be around one percent of the total abundance). The taking proposed here represents an insignificant incremental increase over any incidental take occurring in commercial fisheries.

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 planned mitigation measures, we find that the total marine mammal take from SWFSC's fisheries research activities will have a negligible impact on the affected marine mammal species or stocks in the Eastern Tropical Pacific. In summary, this finding of negligible impact is founded on the following factors: (1) The possibility of injury, serious injury, or mortality from the use of active acoustic devices may reasonably be considered discountable; (2) the anticipated incidents of Level B harassment from the use of active acoustic devices consist of, at worst, temporary and relatively minor modifications in behavior; (3) the

predicted number of incidents of combined Level A harassment, serious injury, and mortality are at insignificant levels relative to all affected stocks; (4) the predicted number of incidents of both Level B harassment and potential M/SI likely represent overestimates; and (5) the presumed efficacy of the planned mitigation measures in reducing the effects of the specified activity to the level of least practicable adverse impact. In addition, no M/SI is proposed for authorization for any species or stock that is listed under the ESA. In combination, we believe that these factors demonstrate that the specified activity will have only short-term effects on individuals (resulting from Level B harassment) and that the total level of taking will not impact rates of recruitment or survival sufficiently to result in population-level impacts.

Antarctic Marine Living Resources Ecosystem—Please refer to Table 11 for information relating to this analysis. No take by Level A harassment, serious injury, or mortality is proposed for authorization in the AMLR. The entirety of the qualitative discussion provided above for the California Current Ecosystem is applicable to SWFSC use of active acoustic sources in the AMLR, and is not repeated here. Given the limited spatio-temporal footprint of SWFSC survey activity in the Antarctic—survey activity only occurs within a limited area of Antarctic waters and only for a few months in any given year—we believe that the level of taking by Level B harassment proposed for authorization represents a negligible impact to these 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 planned mitigation measures, we find that the total marine mammal take from SWFSC's fisheries research activities will have a negligible impact on the affected marine mammal species or stocks in the Antarctic Marine Living Resources Ecosystem. In summary, this finding of negligible impact is founded on the following factors: (1) The possibility of injury, serious injury, or mortality from the use of active acoustic devices may reasonably be considered discountable; (2) the anticipated incidents of Level B harassment from the use of active acoustic devices consist of, at worst, temporary and relatively minor modifications in behavior; (3) no incidental take by Level A harassment, serious injury, or mortality is proposed; (4) the predicted number of incidents of Level B harassment likely represent

overestimates; and (5) the presumed efficacy of the planned mitigation measures in reducing the effects of the specified activity to the level of least practicable adverse impact. In combination, we believe that these factors demonstrate that the specified activity will have only short-term effects on individuals. The specified activity is not expected to impact rates of recruitment or survival and will therefore not result in population-level impacts.

Small Numbers Analyses

California Current Ecosystem—Please see Table 9 for information relating to this small numbers analysis. The total amount of taking proposed for authorization is less than ten percent for all stocks, with the exception of certain species-wide totals when evaluated against the stock with the smallest abundance. The total taking for killer whales represents approximately fifteen percent of the southern resident stock; however, given the limited range of this stock relative to SWFSC survey operations, it is extremely unlikely that all takes would accrue to that stock. The total taking represents less than ten percent of the population abundance for other stocks of killer whale. The total species-wide taking by Level B harassment for harbor porpoise represents approximately 23 percent of the Morro Bay stock of harbor porpoise, which has the smallest population abundance of five harbor porpoise stocks in the CCE. Although this value is within the bounds of takings that NMFS has considered to be small in the past, it is likely that the taking will be distributed in some fashion across the five stocks; and therefore, the amount of take occurring for any one stock would be much less than 23 percent.

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 proposed mitigation measures, we find that small numbers of marine mammals will be taken relative to the populations of the affected species or stocks in the California Current Ecosystem.

Eastern Tropical Pacific—Please refer to Table 10 for information relating to this analysis. The total amount of taking proposed for authorization is less than three percent for all stocks.

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 proposed mitigation measures, we find that small numbers of marine mammals

will be taken relative to the populations of the affected species or stocks in the Eastern Tropical Pacific.

Antarctic Marine Living Resources Ecosystem—Please refer to Table 11 for information relating to this analysis. The total amount of taking proposed for authorization is less than three percent for all stocks.

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 proposed mitigation measures, we find that small numbers of marine mammals will be taken relative to the populations of the affected species or stocks in the Antarctic Marine Living Resources Ecosystem.

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) indicate that requests for incidental take authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed action area.

Any monitoring requirement we prescribe should improve our understanding of one or more of the following:

- Occurrence of marine mammal species in action area (*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 responses to acute stressors, or impacts of chronic exposures (behavioral or physiological).
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of an individual; or (2) population, species, or stock.
- Effects on marine mammal habitat and resultant impacts to marine mammals.

- Mitigation and monitoring effectiveness.

SWFSC plans to make more systematic its training, operations, data collection, animal handling and sampling protocols, etc. in order to improve its ability to understand how mitigation measures influence interaction rates and ensure its research operations are conducted in an informed manner and consistent with lessons learned from those with experience operating these gears in close proximity to marine mammals. It is in this spirit that the monitoring requirements described below were crafted.

Visual Monitoring

Marine mammal watches are a standard part of conducting fisheries research activities, and are implemented as described previously in “Mitigation”. Dedicated marine mammal visual monitoring occurs as described (1) for a minimum of thirty minutes prior to deployment of midwater trawl and pelagic longline gear; (2) throughout deployment and active fishing of all research gears; (3) for a minimum of thirty minutes prior to retrieval of pelagic longline gear; and (4) throughout retrieval of all research gear. This visual monitoring is performed by trained SWFSC personnel with no other responsibilities during the monitoring period. Observers record the species and estimated number of animals present and their behaviors, which may be valuable information towards an understanding of whether certain species may be attracted to vessels or certain survey gears. Separately, marine mammal watches are conducted by watch-standers (those navigating the vessel and other crew; these will typically not be SWFSC personnel) at all times when the vessel is being operated. The primary focus for this type of watch is to avoid striking marine mammals and to generally avoid navigational hazards. These watch-standers 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 or retrieved.

In the Antarctic only, the SWFSC will monitor any potential disturbance of pinnipeds on ice, paying particular attention to the distance at which different species of pinniped are disturbed. Disturbance will be recorded according to the three-point scale, representing increasing seal response to disturbance, shown in Table 7.

Marine Mammal Excluder Device

The SWFSC plans to evaluate development of an MMED suitable for use in the modified-Cobb midwater trawl. Modified-Cobb trawl nets are considerably smaller than Nordic 264 trawl nets, are fished at slower speeds, and have a different shape and functionality than the Nordic 264. Due to the smaller size of the modified-Cobb net, this gear does not yet have a suitable marine mammal excluder device but research and design work are currently being performed to develop effective excluders that will not appreciably affect the catchability of the net and therefore maintain continuity of the fisheries research dataset.

A reduction in target catch rates is an issue that has arisen from preliminary analyses of MMED use in Nordic 264 gear. Although sample sizes are small, these results have cast some doubt as to whether the MMED would be suitable for surveys with a primary objective of estimating abundance, as opposed to collecting biological samples. If data collected during testing of the modified-Cobb MMED continues to indicate reduced catch rates, SWFSC would continue testing to explore whether it is possible to calculate reliable conversion factors to equate catches when using the MMED to catches when it was not. If this is not possible, then use of the MMED for certain surveys may compromise primary research objectives. Therefore, use of the MMED may be considered not practicable.

Analysis of Bycatch Patterns

In addition, SWFSC plans to explore patterns in past marine mammal bycatch in its fisheries research surveys to better understand what factors (*e.g.*, oceanographic conditions) might increase the likelihood of take. SWFSC staff have been using predictive machine-learning methods (classification trees) for various applications; using similar methods, the SWFSC plans to examine research trawl data for any link between trawl variables and observed marine mammal bycatch. Some of the variables SWFSC is currently considering for this analysis are: moon phase, sky cover, pinger presence, trawl speed, vessel sonar use during trawl, use of deck lights, etc. SWFSC staff will also review historical fisheries research data to determine whether sufficient data exist for similar analysis. If take patterns emerge, the SWFSC will focus future research on reducing or eliminating high-risk factors in ways that enable scientifically important surveys to continue with minimized environmental impact.

Training

SWFSC anticipates that additional information on practices to avoid marine mammal interactions can be gleaned from training sessions and more systematic data collection standards. The SWFSC will conduct annual trainings 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, recording of count and disturbance observations (relevant to AMLR surveys), completion of datasheets, and use of equipment. Some of these topics may be familiar to SWFSC staff, who may be professional biologists; the SWFSC shall determine the agenda for these trainings and ensure that all relevant staff have necessary familiarity with these topics. The first training, to be conducted in 2015, will include three primary elements.

First, the course will provide an overview of the purpose and need for the authorization, including research gears that have historically resulted in incidental capture of protected species, mandatory mitigation measures by gear and the purpose for each, and species that SWFSC is authorized to incidentally take.

Second, the training will provide detailed descriptions of reporting, data collection, and sampling protocols. This portion of the training will include instruction on how to complete new data collection forms such as the marine mammal watch log, the incidental take form (e.g., specific gear configuration and details relevant to an interaction with protected species), and forms used for species ID and biological sampling. The biological data collection and sampling training module will include the same sampling and necropsy training that is used for the West Coast Regional Observer training.

SWFSC will also dedicate a portion of training to discussion of best professional judgment (which is recognized as an integral component of mitigation implementation; see “Mitigation”), 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. We recognize that many factors come into play regarding decision-making at sea and that it is not practicable to simplify what are inherently variable and complex situational decisions into rules that may

be defined on paper. However, it is our intent that use of best professional judgment be an iterative process from year to year, in which any at-sea decision-maker (i.e., responsible for decisions regarding the avoidance of marine mammal interactions with survey gear through the application of best professional judgment) learns from the prior experience of all relevant SWFSC personnel (rather than from solely their own experience). The outcome should be increased transparency in decision-making processes where best professional judgment is appropriate and, to the extent possible, some degree of standardization across common situations, with an ultimate goal of reducing marine mammal interactions. It is the responsibility of the SWFSC to facilitate such exchange.

Handling Procedures and Data Collection

Improved standardization of handling procedures were discussed previously in “Mitigation”. In addition to the benefits implementing these protocols are believed to have on the animals through increased post-release survival, SWFSC believes adopting these protocols for data collection will also increase the information on which “serious injury” determinations (NMFS, 2012a, b) are based and improve scientific knowledge about marine mammals that interact with fisheries research gears and the factors that contribute to these interactions. SWFSC personnel will be provided 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.

SWFSC will record interaction information on either existing data forms created by other NMFS programs (e.g., see Appendix B.2 of SWFSC’s application) or will develop their own standardized forms. To aid in serious injury determinations and comply with the current NMFS Serious Injury Guidelines (NMFS, 2012a, b), researchers will also answer a series of supplemental questions on the details of marine mammal interactions (see Appendix B.3 of SWFSC’s application).

Finally, for any marine mammals that are killed during fisheries research activities, scientists will collect data and samples pursuant to the SWFSC MMPA and ESA research and salvage permit and to the “Detailed Sampling Protocol for Marine Mammal and Sea Turtle

Incidental Takes on SWFSC Research Cruises” (see Appendix B.4 of SWFSC’s application).

Reporting

As is normally the case, SWFSC 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 SWFSC will follow a phased approach with regard to the cessation of its activities and/or reporting of such events, as described in the proposed regulatory texts following this preamble. In addition, Chief Scientists (or cruise leader, CS) will provide reports to SWFSC leadership and to the Office of Protected Resources (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 SWFSC and OPR to better evaluate the conditions under which takes are most likely occur. We believe in the long term this will allow the avoidance of these types of events in the future.

The SWFSC will submit annual summary reports to OPR including: (1) Annual line-kilometers surveyed during which the EK60, ME70, SX90 (or equivalent sources) were predominant (see “Estimated Take by Acoustic Harassment” for further discussion), specific to each region; (2) summary information regarding use of all longline (including bottom and vertical lines) and trawl (including bottom trawl) gear, including number of sets, hook hours, tows, etc., specific to each region and gear; (3) 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; (4) summary information related to any on-ice disturbance of pinnipeds, including event-specific total counts of animals present, counts of reactions according to the three-point scale shown in Table 7, and distance of closest approach; (5) a written evaluation of the effectiveness of SWFSC 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 (6) updates as appropriate regarding the development/implementation of MMEDs and analysis

of bycatch patterns. The period of reporting will be annually, beginning one year post-issuance, and the report must be submitted not less than ninety days following the end of a given year. Submission of this information is in service of an adaptive management framework allowing NMFS to make appropriate modifications to mitigation and/or monitoring strategies, as necessary, during the five-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.

SWFSC 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. SWFSC will require that the CS complete data forms (already developed and used by commercial fisheries observer programs) and address supplemental questions, both of which have been developed to aid in SI determinations. SWFSC 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 SWFSC will perform all necessary reporting to ensure that any incidental M/SI is incorporated as appropriate into relevant SARs.

Adaptive Management

The final regulations governing the take of marine mammals incidental to SWFSC fisheries research survey operations in three specified geographical regions contain an adaptive management component. The inclusion of an adaptive management component is valuable and necessary within the context of five-year regulations for activities that have been associated with marine mammal mortality.

The reporting requirements associated with these rules are designed to provide

OPR with monitoring data from the previous year to allow consideration of whether any changes are appropriate. OPR and the SWFSC 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 SWFSC 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 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.

Changes to the Proposed Regulations

As a result of clarifying discussions with SWFSC, we made certain changes to the proposed regulations as described here. These changes are considered minor and do not affect any of our preliminary determinations.

Specified Geographical Region

We clarify that the California Current Ecosystem specified geographical region extends outside of the U.S. Exclusive Economic Zone (EEZ), from the Mexican EEZ (not including Mexican territorial waters) north into the Canadian EEZ (not including Canadian territorial waters). We further clarify that the Eastern Tropical Pacific specified geographical region extends into the EEZs of the various ETP nations (not including the territorial waters of ETP nations). The MMPA's authority does not extend into foreign territorial waters.

Mitigation

We have eliminated reference to specific operational protocols (e.g., tow distance, soak duration; 219.5(b)(6)) in the regulations. Those protocols, as described in the preamble as well as in the proposed regulations, were intended to acknowledge that certain SWFSC operational protocols that are defined elements of survey design (i.e., not

specified for purposes of mitigation) have the added benefit of reducing the likelihood of marine mammal interactions (e.g., limiting tow or soak durations results in a shorter period of time when gear is in the water). However, it is not our intent to restrict SWFSC ability to design new or alter existing survey protocols during the period of validity of these regulations.

Monitoring

We have removed the requirement to log passive acoustic data prior to midwater trawling in the California Current (219.6(b) in the proposed regulations). Inclusion of this requirement stemmed from a misunderstanding of certain language in SWFSC's request for authorization and would require substantial effort for uncertain benefit. In addition, we made the following minor changes:

- Added a stipulation relating to coordination of training efforts with NMFS' Northwest Fisheries Science Center (219.6 (d)(3))
- Removed requirement for SWFSC to submit reports for each survey leg or cruise (previously 219.6(g)(2)). We believe that the incident-specific NMFS PSIT reporting in concert with required annual reporting is sufficient.
- Clarified that SWFSC must submit a revised annual report following resolution of any comments on the draft report; changed the reporting period to one-year period rather than calendar year; clarified that pro-rated estimates of actual take relating to use of active acoustic sources must be submitted; and added requirements to report on waiver of move-on rule due to presence of five or fewer California sea lions when there is a relevant interaction, the ongoing practice of spent bait discard, and annual trainings and coordination.
- Requirements relating to reporting of injured or dead marine mammals have been revised to clarify that SWFSC may make an immediate decision regarding continuation of research activity in the event that such activity results in a prohibited take. The decision will be subject to concurrence from OPR.

Impact on Availability of Affected Species for Taking for Subsistence Uses

There are no relevant subsistence uses of marine mammals implicated by these actions, in any of the three specified geographical regions for which we are issuing regulations. Therefore, we have 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.

Endangered Species Act (ESA)

There are multiple marine mammal species listed under the ESA with confirmed or possible occurrence in the specified geographical regions. The authorization of incidental take pursuant to the SWFSC's specified activity would not affect any designated critical habitat. OPR requested initiation of consultation with NMFS' West Coast Regional Office (WCRO) under section 7 of the ESA on the promulgation of five-year regulations and the subsequent issuance of LOAs to SWFSC under section 101(a)(5)(A) of the MMPA.

On August 31, 2015, the WCRO issued a biological opinion to OPR and to the SWFSC (concerning the conduct of the specified activities) which concluded that the issuance of the authorizations is not likely to jeopardize the continued existence of any listed species and is not likely to adversely affect any listed marine mammal species. The opinion also concluded that the issuance of the authorizations would not affect any designated critical habitat.

National Environmental Policy Act (NEPA)

In compliance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*), as implemented by the regulations published by the Council on Environmental Quality (40 CFR parts 1500–1508), SWFSC prepared an Environmental Assessment (EA) to consider the direct, indirect and cumulative effects to the human environment resulting from the described research activities. OPR made SWFSC's EA available to the public for review and comment, in relation to its suitability for adoption by OPR in order to assess the impacts to the human environment of issuance of regulations and subsequent Letters of Authorization to SWFSC. Also in compliance with NEPA and the CEQ regulations, as well as NOAA Administrative Order 216–6, OPR has reviewed SWFSC's EA, determined it to be sufficient, and adopted that EA and signed a Finding of No Significant Impact (FONSI) on August 31, 2015. SWFSC's EA and OPR's FONSI for this action may be found on the Internet at www.nmfs.noaa.gov/pr/permits/incidental/research.htm.

Classification

It has been determined that this rule is not significant under 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 that this rule will not have a significant economic impact on a substantial number of small entities. The factual basis for this certification was published with the proposed rule and is not repeated here. No comments were received regarding the economic impact of this final rule. As a result, a final regulatory flexibility analysis is not required and one was not prepared.

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 Paperwork Reduction Act (PRA) unless that collection-of-information displays a currently valid OMB control number. This rule contains collection-of-information requirements subject to the requirements of the PRA. These collection-of-information requirements have been approved by OMB under control number 0648–0151 and include applications for regulations, subsequent LOAs, and reports.

List of Subjects in 50 CFR Part 219

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

Dated: September 22, 2015.

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 Chapter II, Subchapter C, by adding part 219 to read as follows:

PART 219—REGULATIONS GOVERNING THE TAKING AND IMPORTING OF MARINE MAMMALS**Subpart A—Taking Marine Mammals Incidental to Southwest Fisheries Science Center Fisheries Research in the California Current**

Sec.

- 219.1 Specified activity and specified geographical region.
- 219.2 Effective dates.
- 219.3 Permissible methods of taking.
- 219.4 Prohibitions.
- 219.5 Mitigation requirements.
- 219.6 Requirements for monitoring and reporting.
- 219.7 Letters of Authorization.
- 219.8 Renewals and modifications of Letters of Authorization.
- 219.9 [Reserved]
- 219.10 [Reserved]

Subpart B—Taking Marine Mammals Incidental to Southwest Fisheries Science Center Fisheries Research in the Eastern Tropical Pacific

Sec.

- 219.11 Specified activity and specified geographical region.
- 219.12 Effective dates.
- 219.13 Permissible methods of taking.
- 219.14 Prohibitions.
- 219.15 Mitigation requirements.
- 219.16 Requirements for monitoring and reporting.
- 219.17 Letters of Authorization.
- 219.18 Renewals and modifications of Letters of Authorization.
- 219.19 [Reserved]
- 219.20 [Reserved]

Subpart C—Taking Marine Mammals Incidental to Southwest Fisheries Science Center Fisheries Research in the Antarctic

Sec.

- 219.21 Specified activity and specified geographical region.
- 219.22 Effective dates.
- 219.23 Permissible methods of taking.
- 219.24 Prohibitions.
- 219.25 Mitigation requirements.
- 219.26 Requirements for monitoring and reporting.
- 219.27 Letters of Authorization.
- 219.28 Renewals and modifications of Letters of Authorization.
- 219.29 [Reserved]
- 219.30 [Reserved]

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

Subpart A—Taking Marine Mammals Incidental to Southwest Fisheries Science Center Fisheries Research in the California Current**§ 219.1 Specified activity and specified geographical region.**

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

(b) The taking of marine mammals by SWFSC may be authorized in a Letter of Authorization (LOA) only if it occurs within the California Current Ecosystem.

§ 219.2 Effective dates.

Regulations in this subpart are effective October 30, 2015, through October 30, 2020.

§ 219.3 Permissible methods of taking.

(a) Under LOAs issued pursuant to § 216.106 and § 219.7 of this chapter, the Holder of the LOA (hereinafter "SWFSC") may incidentally, but not intentionally, take marine mammals within the area described in § 219.1(b)

of this chapter, provided the activity is in compliance with all terms, conditions, and requirements of the regulations in this subpart and the appropriate LOA.

(b) The incidental take of marine mammals under the activities identified in § 219.1(a) of this chapter is limited to the indicated number of takes on an annual basis (by Level B harassment) or over the five-year period of validity of these regulations (by mortality) of the following species:

- (1) Level B harassment:
- (i) Cetaceans:
- (A) Gray whale (*Eschrichtius robustus*)—346;
- (B) Humpback whale (*Megaptera novaeangliae*)—14;
- (C) Minke whale (*Balaenoptera acutorostrata*)—13;
- (D) Sei whale (*Balaenoptera borealis*)—1;
- (E) Fin whale (*Balaenoptera physalus*)—33;
- (F) Blue whale (*Balaenoptera musculus*)—24;
- (G) Sperm whale (*Physeter macrocephalus*)—65;
- (H) Pygmy or dwarf sperm whale (*Kogia spp.*)—42;
- (I) Cuvier's beaked whale (*Ziphius cavirostris*)—146;
- (J) Baird's beaked whale (*Berardius bairdii*)—34;
- (K) Hubbs', Blainville's, ginkgo-toothed, Perrin's, lesser, or Stejneger's beaked whales (*Mesoplodon spp.*)—40;
- (L) Bottlenose dolphin (*Tursiops truncatus*)—32;
- (M) Striped dolphin (*Stenella coeruleoalba*)—301;
- (N) Long-beaked common dolphin (*Delphinis capensis*)—348;
- (O) Short-beaked common dolphin (*Delphinis delphis*)—5,592;
- (P) Pacific white-sided dolphin (*Lagenorhynchus obliquoidens*)—378;
- (Q) Northern right whale dolphin (*Lissodelphis borealis*)—176;
- (R) Risso's dolphin (*Grampus griseus*)—188;
- (S) Killer whale (*Orcinus orca*)—13;
- (T) Short-finned pilot whale (*Globicephala macrorhynchus*)—12;
- (U) Harbor porpoise (*Phocoena phocoena*)—682; and
- (V) Dall's porpoise (*Phocoenoides dalli*)—1,365.
- (ii) Pinnipeds:
- (A) Guadalupe fur seal (*Arctocephalus philippii townsendi*)—134;
- (B) Northern fur seal (*Callorhinus ursinus*), California stock—236;
- (C) Northern fur seal, Pribilof Islands/ Eastern Pacific stock—11,555;
- (D) California sea lion (*Zalophus californianus*)—4,302;
- (E) Steller sea lion (*Eumetopias jubatus*)—1,055;

(F) Harbor seal (*Phoca vitulina*)—910; and

(G) Northern elephant seal (*Mirounga angustirostris*)—4,743.

(2) Mortality (midwater trawl gear only):

- (i) Cetaceans:
- (A) Bottlenose dolphin (California, Oregon, and Washington offshore stock)—8;
- (B) Bottlenose dolphin (California coastal stock)—3;
- (C) Striped dolphin—11;
- (D) Long-beaked common dolphin—11;
- (E) Short-beaked common dolphin—11;
- (F) Pacific white-sided dolphin—35;
- (G) Northern right whale dolphin—10;
- (H) Risso's dolphin—11;
- (I) Harbor porpoise—5;
- (J) Dall's porpoise—5;
- (K) Unidentified cetacean (Family Delphinidae or Family Phocoenidae)—1.

(ii) Pinnipeds:

(A) Northern fur seal—5;

(B) California sea lion—20;

(C) Steller sea lion—9;

(D) Harbor seal—9;

(E) Northern elephant seal—5; and

(F) Unidentified pinniped—1.

(3) Mortality (pelagic longline gear only):

- (i) Cetaceans:
- (A) Pygmy or dwarf sperm whale—1;
- (B) Bottlenose dolphin—1;
- (C) Striped dolphin—1;
- (D) Long-beaked common dolphin—1;
- (E) Short-beaked common dolphin—1;
- (F) Risso's dolphin—1; and
- (G) Short-finned pilot whale—1.
- (ii) Pinnipeds:
- (A) California sea lion—5;
- (B) Steller sea lion—1; and
- (C) Unidentified pinniped—1.

§ 219.4 Prohibitions.

Notwithstanding takings contemplated in § 219.1 of this chapter and authorized by a LOA issued under §§ 216.106 and 219.7 of this chapter, no person in connection with the activities described in § 219.1 of this chapter may:

- (a) Take any marine mammal not specified in § 219.3(b) of this chapter;
- (b) Take any marine mammal specified in § 219.3(b) of this chapter in any manner other than as specified;
- (c) Take a marine mammal specified in § 219.3(b) of this chapter if NMFS determines such taking results in more than a negligible impact on the species or stocks of such marine mammal;
- (d) Take a marine mammal specified in § 219.3(b) of this chapter if NMFS determines such taking results in an unmitigable adverse impact on the species or stock of such marine mammal for taking for subsistence uses; or

(e) Violate, or fail to comply with, the terms, conditions, and requirements of this subpart or a LOA issued under §§ 216.106 and 219.7 of this chapter.

§ 219.5 Mitigation requirements.

When conducting the activities identified in § 219.1(a) of this chapter, the mitigation measures contained in any LOA issued under §§ 216.106 and 219.7 of this chapter must be implemented. These mitigation measures shall include but are not limited to:

(a) General conditions:

(1) SWFSC 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.

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

(3) SWFSC 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) When deploying any type of sampling gear at sea, SWFSC shall at all times 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.

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

(b) Midwater trawl survey protocols:

(1) SWFSC shall conduct trawl operations as soon as is practicable upon arrival at the sampling station.

(2) SWFSC shall initiate marine mammal watches (visual observation) no less than thirty minutes prior to sampling. 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) SWFSC shall implement the move-on rule. If one or more marine mammals are observed within 1 nm of the planned location in the thirty minutes before setting the trawl gear, SWFSC shall transit to a different section of the sampling area to maintain a minimum set distance of 1 nm from the observed marine mammals. If, after moving on, marine mammals remain within 1 nm, SWFSC may decide to move again or to skip the station. SWFSC may use best professional judgment in making this decision but may not elect to conduct midwater trawl survey activity when animals remain within the 1-nm zone.

(4) SWFSC shall maintain visual monitoring effort during the entire period of time that midwater 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, SWFSC shall take the most appropriate action to avoid marine mammal interaction. SWFSC may use best professional judgment in making this decision.

(5) If trawling operations have been suspended because of the presence of marine mammals, SWFSC may resume trawl operations when practicable only when the animals are believed to have departed the 1 nm area. SWFSC may use best professional judgment in making this determination.

(6) SWFSC 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. Trawl nets must be cleaned prior to deployment.

(7) SWFSC must install and use a marine mammal excluder device at all times when the Nordic 264 trawl net or other net for which the device is appropriate is used.

(8) SWFSC must install and use acoustic deterrent devices whenever any midwater trawl net is used, with two to four devices placed along the footrope and/or headrope of the net. SWFSC must ensure that the devices are operating properly before deploying the net.

(c) Pelagic longline survey protocols:

(1) SWFSC shall deploy longline gear as soon as is practicable upon arrival at the sampling station.

(2) SWFSC shall initiate marine mammal watches (visual observation)

no less than thirty minutes prior to both deployment and retrieval of the 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) SWFSC shall implement the move-on rule. If one or more marine mammals are observed within 1 nm of the planned location in the thirty minutes before gear deployment, SWFSC shall transit to a different section of the sampling area to maintain a minimum set distance of 1 nm from the observed marine mammals. If, after moving on, marine mammals remain within 1 nm, SWFSC may decide to move again or to skip the station. SWFSC may use best professional judgment in making this decision but may not elect to conduct pelagic longline survey activity when animals remain within the 1-nm zone. Implementation of the move-on rule is not required upon observation of five or fewer California sea lions.

(4) SWFSC 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, SWFSC shall take the most appropriate action to avoid marine mammal interaction. SWFSC 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, SWFSC may resume such operations when practicable only when the animals are believed to have departed the 1 nm area. SWFSC may use best professional judgment in making this decision.

(6) SWFSC shall implement standard survey protocols, including maximum soak durations and a prohibition on chumming.

§ 219.6 Requirements for monitoring and reporting.

(a) Visual monitoring program:

(1) Dedicated marine mammal visual monitoring, conducted by trained SWFSC personnel with no other responsibilities during the monitoring period, shall occur:

(i) For a minimum of thirty minutes prior to deployment of midwater trawl and pelagic longline gear;

(ii) Throughout deployment of gear and active fishing of midwater trawl gear;

(iii) For a minimum of thirty minutes prior to retrieval of pelagic longline gear; and

(iv) 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.

(b) Marine mammal excluder device (MMED)—SWFSC shall conduct an evaluation of the feasibility of MMED development for the modified-Cobb midwater trawl net.

(c) Analysis of bycatch patterns—SWFSC shall conduct an analysis of past bycatch patterns in order to better understand what factors might increase the likelihood of incidental take in research survey gear. This shall include an analysis of research trawl data for any link between trawl variables and observed marine mammal bycatch, as well as a review of historical fisheries research data to determine whether sufficient data exist for similar analysis.

(d) Training:

(1) SWFSC 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. SWFSC may determine the agenda for these trainings.

(2) SWFSC 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) SWFSC shall coordinate with NMFS' Northwest Fisheries Science Center (NWFSC) regarding surveys conducted in the California Current Ecosystem, such that training and guidance related to handling procedures and data collection is consistent.

(e) Handling procedures and data collection:

(1) SWFSC must develop and implement standardized marine mammal handling, disentanglement, and data collection procedures. These standard procedures will be subject to approval by NMFS' Office of Protected Resources (OPR).

(2) When practicable, for any marine mammal interaction involving the release of a live animal, SWFSC shall collect necessary data to facilitate a serious injury determination.

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

(f) Reporting:

(1) SWFSC shall report all incidents of marine mammal interaction to NMFS' 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.

(2) Annual reporting:

(i) SWFSC shall submit an annual summary report to OPR not later than ninety days following the end of a given year. SWFSC shall provide a final report within thirty 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, ME70, SX90 (or equivalent sources) were predominant and associated pro-rated estimates of actual take;

(B) Summary information regarding use of all longline (including bottom and vertical lines) and trawl (including bottom trawl) gear, including number of sets, hook hours, tows, etc., specific to each gear;

(C) Accounts of all incidents of marine mammal interactions, including circumstances of the event, descriptions of any mitigation procedures implemented or not implemented and why, and, for interactions due to use of pelagic longline, whether the move-on rule was waived due to the presence of five or fewer California sea lions;

(D) A written evaluation of the effectiveness of SWFSC 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 an assessment of the practice of discarding

spent bait relative to interactions with pelagic longline, if any;

(E) Final outcome of serious injury determinations for all incidents of marine mammal interactions where the animal(s) were released alive;

(F) Updates as appropriate regarding the development/implementation of MMEDs and analysis of bycatch patterns; and

(G) A summary of all relevant training provided by SWFSC and any coordination with NWFS or NMFS' West Coast Regional Office.

(g) Reporting of injured or dead marine mammals:

(1) In the unanticipated event that the activity defined in § 219.1(a) of this chapter clearly causes the take of a marine mammal in a prohibited manner, SWFSC 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 SWFSC Director (or designee). The incident must be reported immediately to OPR and the West Coast Regional Stranding Coordinator, NMFS. OPR will review the circumstances of the prohibited take and work with SWFSC to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. The immediate decision made by SWFSC 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;

(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); and

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

(2) In the event that SWFSC 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), SWFSC shall immediately report the incident to OPR and the West Coast Regional Stranding Coordinator, NMFS. The report must include the information identified in § 219.6(g)(1) of this section. Activities may continue while OPR reviews the circumstances of the

incident. OPR will work with SWFSC to determine whether additional mitigation measures or modifications to the activities are appropriate.

(3) In the event that SWFSC 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 § 219.1(a) of this chapter (e.g., previously wounded animal, carcass with moderate to advanced decomposition, scavenger damage), SWFSC shall report the incident to OPR and the West Coast Regional Stranding Coordinator, NMFS, within 24 hours of the discovery. SWFSC shall provide photographs or video footage or other documentation of the stranded animal sighting to OPR.

§ 219.7 Letters of Authorization.

(a) To incidentally take marine mammals pursuant to these regulations, SWFSC 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, SWFSC 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, SWFSC must apply for and obtain a modification of the LOA as described in § 219.8 of this chapter.

(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 thirty days of a determination.

§ 219.8 Renewals and modifications of Letters of Authorization.

(a) An LOA issued under §§ 216.106 and 219.7 of this chapter for the activity identified in § 219.1(a) of this chapter 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 § 219.8(c)(1) of this chapter), 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 § 219.8(c)(1) of this chapter) that do not change the findings made for the regulations or result in no more than a minor change in the total estimated number of takes (or distribution by species or years), 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 and 219.7 of this chapter for the activity identified in § 219.1(a) of this chapter may be modified by OPR under the following circumstances:

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

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

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

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

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

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

(2) Emergencies—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 § 219.2(b) of this chapter, an LOA may be modified without prior notice or opportunity for public

comment. Notice would be published in the **Federal Register** within thirty days of the action.

§ 219.9 [Reserved]

§ 219.10 [Reserved]

Subpart B—Taking Marine Mammals Incidental to Southwest Fisheries Science Center Fisheries Research in the Eastern Tropical Pacific

§ 219.11 Specified activity and specified geographical region.

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

(b) The taking of marine mammals by SWFSC may be authorized in a Letter of Authorization (LOA) only if it occurs within the Eastern Tropical Pacific.

§ 219.12 Effective dates.

Regulations in this subpart are effective October 30, 2015, through October 30, 2020.

§ 219.13 Permissible methods of taking.

(a) Under LOAs issued pursuant to §§ 216.106 and 219.17 of this chapter, the Holder of the LOA (hereinafter "SWFSC") may incidentally, but not intentionally, take marine mammals within the area described in § 219.11(b) of this chapter, provided the activity is in compliance with all terms, conditions, and requirements of the regulations in this subpart and the appropriate LOA.

(b) The incidental take of marine mammals under the activities identified in § 219.11(a) of this chapter is limited to the indicated number of takes on an annual basis (by Level B harassment) or over the five-year period of validity of these regulations (by mortality) of the following species:

(1) Level B harassment:

(i) Cetaceans:

(A) Humpback whale (*Megaptera novaeangliae*)—1;

(B) Bryde's whale (*Balaenoptera edeni*)—4;

(C) Blue whale (*Balaenoptera musculus*)—2;

(D) Sperm whale (*Physeter macrocephalus*)—4;

(E) Dwarf sperm whale (*Kogia sima*)—14;

(F) Cuvier's beaked whale (*Ziphius cavirostris*)—24;

(G) Longman's beaked whale (*Indopacetus pacificus*)—1;

(H) Blainville's, ginkgo-toothed, or lesser beaked whales (*Mesoplodon* spp.)—30;

(I) Rough-toothed dolphin (*Steno bredanensis*)—45;

(J) Bottlenose dolphin (*Tursiops truncatus*)—139;

(K) Striped dolphin (*Stenella coeruleoalba*)—401;

(L) Pantropical spotted dolphin (*Stenella attenuata*)—1,088;

(M) Spinner dolphin (*Stenella longirostris*)—442;

(N) Long-beaked common dolphin (*Delphinus capensis*)—173;

(O) Short-beaked common dolphin (*Delphinus delphis*)—1,300;

(P) Fraser's dolphin (*Lagenodelphis hosei*)—121;

(Q) Dusky dolphin (*Lagenorhynchus obscurus*)—18;

(R) Risso's dolphin (*Grampus griseus*)—46;

(S) Melon-headed whale (*Peponocephala electra*)—19;

(T) Pygmy killer whale (*Feresa attenuata*)—17;

(U) False killer whale (*Pseudorca crassidens*)—17;

(V) Killer whale (*Orcinus orca*)—3; and

(W) Short-finned pilot whale (*Globicephala macrorhynchus*)—723.

(ii) Pinnipeds:

(A) Guadalupe fur seal (*Arctocephalus philippii townsendi*)—66;

(B) California sea lion (*Zalophus californianus*)—1,442;

(C) South American sea lion (*Otaria byronia*)—1,442; and

(D) Northern elephant seal (*Mirounga angustirostris*)—3,248.

(2) Mortality (pelagic longline gear only):

(i) Cetaceans:

(A) Dwarf sperm whale—1;

(B) Rough-toothed dolphin—1;

(C) Bottlenose dolphin—1;

(D) Striped dolphin—1;

(E) Pantropical spotted dolphin—1;

(F) Long-beaked common dolphin—1;

(G) Short-beaked common dolphin—1;

(H) Risso's dolphin—1;

(I) False killer whale—1; and

(J) Short-finned pilot whale—1.

(ii) Pinnipeds:

(A) California sea lion—5;

(B) South American sea lion—5; and

(C) Unidentified pinniped—1.

§ 219.14 Prohibitions.

Notwithstanding takings contemplated in § 219.11 of this chapter and authorized by a LOA issued under §§ 216.106 and 219.17 of this chapter, no person in connection with the activities described in § 219.11 of this chapter may:

(a) Take any marine mammal not specified in § 219.13(b) of this chapter;

(b) Take any marine mammal specified in § 219.13(b) of this chapter in any manner other than as specified;

(c) Take a marine mammal specified in § 219.13(b) of this chapter if NMFS determines such taking results in more than a negligible impact on the species or stocks of such marine mammal;

(d) Take a marine mammal specified in § 219.13(b) of this chapter if NMFS determines such taking results in an unmitigable adverse impact on the species or stock of such marine mammal for taking for subsistence uses; or

(e) Violate, or fail to comply with, the terms, conditions, and requirements of this subpart or a LOA issued under §§ 216.106 and 219.17 of this chapter.

§ 219.15 Mitigation requirements.

When conducting the activities identified in § 219.11(a) of this chapter, the mitigation measures contained in any LOA issued under §§ 216.106 and 219.17 of this chapter must be implemented. These mitigation measures shall include but are not limited to:

(a) General conditions:

(1) SWFSC 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.

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

(3) SWFSC 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) When deploying any type of sampling gear at sea, SWFSC shall at all times 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.

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

(b) Pelagic longline survey protocols:

(1) SWFSC shall deploy longline gear as soon as is practicable upon arrival at the sampling station.

(2) SWFSC shall initiate marine mammal watches (visual observation) no less than thirty minutes prior to both deployment and retrieval of the 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) SWFSC shall implement the move-on rule. If one or more marine mammals are observed within 1 nm of the planned location in the thirty minutes before gear deployment, SWFSC shall transit to a different section of the sampling area to maintain a minimum set distance of 1 nm from the observed marine mammals. If, after moving on, marine mammals remain within 1 nm, SWFSC may decide to move again or to skip the station. SWFSC may use best professional judgment in making this decision but may not elect to conduct pelagic longline survey activity when animals remain within the 1-nm zone.

(4) SWFSC 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, SWFSC shall take the most appropriate action to avoid marine mammal interaction. SWFSC 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, SWFSC may resume such operations when practicable only when the animals are believed to have departed the 1 nm area. SWFSC may use best professional judgment in making this determination.

(6) SWFSC shall implement standard survey protocols, including maximum soak durations and a prohibition on chumming.

§ 219.16 Requirements for monitoring and reporting.

(a) Visual monitoring program:

(1) Dedicated marine mammal visual monitoring, conducted by trained SWFSC personnel with no other

responsibilities during the monitoring period, shall occur:

(i) For a minimum of thirty minutes prior to deployment of pelagic longline gear;

(ii) Throughout deployment of gear;

(iii) For a minimum of thirty minutes prior to retrieval of pelagic longline gear; and

(iv) 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.

(b) Training:

(1) SWFSC 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. SWFSC may determine the agenda for these trainings.

(2) SWFSC 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.

(c) Handling procedures and data collection:

(1) SWFSC must develop and implement standardized marine mammal handling, disentanglement, and data collection procedures. These standard procedures will be subject to approval by NMFS' Office of Protected Resources (OPR).

(2) When practicable, for any marine mammal interaction involving the release of a live animal, SWFSC shall collect necessary data to facilitate a serious injury determination.

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

(d) Reporting:

(1) SWFSC shall report all incidents of marine mammal interaction to NMFS' 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.

(2) Annual reporting:

(i) SWFSC shall submit an annual summary report to OPR not later than ninety days following the end of a given year. SWFSC shall provide a final report within thirty 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, ME70, SX90 (or equivalent sources) were predominant and associated pro-rated estimates of actual take;

(B) Summary information regarding use of all longline gear, including number of sets, hook hours, etc.;

(C) 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;

(D) A written evaluation of the effectiveness of SWFSC 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 an assessment of the practice of discarding spent bait relative to interactions with pelagic longline, if any;

(E) Final outcome of serious injury determinations for all incidents of marine mammal interactions where the animal(s) were released alive; and

(F) A summary of all relevant training provided by SWFSC.

(e) Reporting of injured or dead marine mammals:

(1) In the unanticipated event that the activity defined in § 219.1(a) of this chapter clearly causes the take of a marine mammal in a prohibited manner, SWFSC 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 SWFSC Director (or designee). The incident must be reported immediately to OPR. OPR will review the circumstances of the prohibited take

and work with SWFSC to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. The immediate decision made by SWFSC 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;

(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); and

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

(2) In the event that SWFSC 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), SWFSC shall immediately report the incident to OPR. The report must include the same information identified in § 219.16(e)(1) of this section.

Activities may continue while OPR reviews the circumstances of the incident. OPR will work with SWFSC to determine whether additional mitigation measures or modifications to the activities are appropriate.

(3) In the event that SWFSC 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 § 219.11(a) of this chapter (*e.g.*, previously wounded animal, carcass with moderate to advanced decomposition, scavenger damage), SWFSC shall report the incident to OPR within 24 hours of the discovery. SWFSC shall provide photographs or video footage or other documentation of the stranded animal sighting to OPR.

§ 219.17 Letters of Authorization.

(a) To incidentally take marine mammals pursuant to these regulations, SWFSC 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, SWFSC 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, SWFSC must apply for and obtain a modification of the LOA as described in § 219.18 of this chapter.

(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 thirty days of a determination.

§ 219.18 Renewals and modifications of Letters of Authorization.

(a) An LOA issued under §§ 216.106 and 219.17 of this chapter for the activity identified in § 219.11(a) of this chapter 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 § 219.18(c)(1) of this chapter), 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 § 219.18(c)(1) of this chapter) that do not change the findings made for the regulations or result in no more than a minor change in the total estimated number of takes (or distribution by species or years), 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 and 219.17 of this chapter for the activity identified in § 219.11(a) of this chapter may be modified by OPR under the following circumstances:

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

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

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

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

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

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

(2) Emergencies—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 § 219.12(b) of this chapter, an LOA may be modified without prior notice or opportunity for public comment. Notice would be published in the **Federal Register** within thirty days of the action.

§ 219.19 [Reserved]

§ 219.20 [Reserved]

Subpart C—Taking Marine Mammals Incidental to Southwest Fisheries Science Center Fisheries Research in the Antarctic

§ 219.21 Specified activity and specified geographical region.

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

(b) The taking of marine mammals by SWFSC may be authorized in a Letter of Authorization (LOA) only if it occurs within the Antarctic Marine Living Resources Ecosystem.

§ 219.22 Effective dates.

Regulations in this subpart are effective October 30, 2015, through October 30, 2020.

§ 219.23 Permissible methods of taking.

(a) Under LOAs issued pursuant to §§ 216.106 and 219.27 of this chapter, the Holder of the LOA (hereinafter "SWFSC") may incidentally, but not intentionally, take marine mammals within the area described in § 219.21(b) of this chapter, provided the activity is in compliance with all terms, conditions, and requirements of the regulations in this subpart and the appropriate LOA.

(b) The incidental take of marine mammals under the activities identified in § 219.21(a) of this chapter is limited to the indicated number of takes on an annual basis of the following species and is limited to Level B harassment:

- (1) Cetaceans:
 - (i) Southern right whale (*Eubalaena australis*)—1;
 - (ii) Humpback whale (*Megaptera novaeangliae*)—92;
 - (iii) Antarctic minke whale (*Balaenoptera bonaerensis*)—6;
 - (iv) Fin whale (*Balaenoptera physalus*)—114;
 - (v) Sperm whale (*Physeter macrocephalus*)—3;
 - (vi) Arnoux' beaked whale (*Berardius arnuxii*)—37;
 - (vii) Southern bottlenose whale (*Hyperoodon planifrons*)—37;
 - (viii) Hourglass dolphin (*Lagenorhynchus cruciger*)—12;
 - (ix) Killer whale (*Orcinus orca*)—11;
 - (x) Long-finned pilot whale (*Globicephala melas*)—43; and
 - (xi) Spectacled porpoise (*Phocoena dioptrica*)—12.
- (2) Pinnipeds:
 - (i) Antarctic fur seal (*Arctocephalus philippii townsendi*)—553;
 - (ii) Southern elephant seal (*Mirounga leonina*)—6;
 - (iii) Weddell seal (*Leptonychotes weddellii*)—4;
 - (iv) Crabeater seal (*Lobodon carcinophaga*)—7; and
 - (v) Leopard seal (*Hydrurga leptonyx*)—5.

§ 219.24 Prohibitions.

Notwithstanding takings contemplated in § 219.21 of this chapter and authorized by a LOA issued under §§ 216.106 and 219.27 of this chapter, no person in connection with the activities described in § 219.21 of this chapter may:

- (a) Take any marine mammal not specified in § 219.23(b) of this chapter;
- (b) Take any marine mammal specified in § 219.23(b) of this chapter in any manner other than as specified;

(c) Take a marine mammal specified in § 219.23(b) of this chapter if NMFS determines such taking results in more than a negligible impact on the species or stocks of such marine mammal;

(d) Take a marine mammal specified in § 219.23(b) of this chapter if NMFS determines such taking results in an unmitigable adverse impact on the species or stock of such marine mammal for taking for subsistence uses; or

(e) Violate, or fail to comply with, the terms, conditions, and requirements of this subpart or a LOA issued under §§ 216.106 and 219.27 of this chapter.

§ 219.25 Mitigation requirements.

When conducting the activities identified in § 219.21(a), the mitigation measures contained in any LOA issued under §§ 216.106 and 219.27 of this chapter must be implemented. These mitigation measures shall include but are not limited to:

(a) General conditions:

- (1) SWFSC 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.

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

(3) SWFSC 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) When deploying any type of sampling gear at sea, SWFSC shall at all times 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.

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

(b) Trawl survey protocols—SWFSC shall conduct trawl operations as soon as is practicable upon arrival at the sampling station.

§ 219.26 Requirements for monitoring and reporting.

(a) Visual monitoring program:

(1) 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.

(2) SWFSC shall monitor any potential disturbance of pinnipeds on ice, paying particular attention to the distance at which different species of pinniped are disturbed. Disturbance shall be recorded according to a three-point scale representing increasing seal response to disturbance.

(b) Training:

(1) SWFSC 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, recording of count and disturbance observations, completion of datasheets, and use of equipment. SWFSC may determine the agenda for these trainings.

(2) SWFSC 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.

(c) Handling procedures and data collection:

(1) SWFSC must develop and implement standardized marine mammal handling, disentanglement, and data collection procedures. These standard procedures will be subject to approval by NMFS' Office of Protected Resources (OPR).

(2) When practicable, for any marine mammal interaction involving the release of a live animal, SWFSC shall collect necessary data to facilitate a serious injury determination.

(3) SWFSC 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) SWFSC shall record such data on standardized forms, which will be subject to approval by OPR. SWFSC

shall also answer a standard series of supplemental questions regarding the details of any marine mammal interaction.

(d) Reporting:

(1) SWFSC shall report all incidents of marine mammal interaction to NMFS' 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.

(2) Annual reporting:

(i) SWFSC shall submit an annual summary report to OPR not later than ninety days following the end of a given year. SWFSC shall provide a final report within thirty 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, ME70, SX90 (or equivalent sources) were predominant and associated pro-rated estimates of actual take;

(B) Summary information regarding use of all trawl gear, including number of tows, etc.;

(C) 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;

(D) Summary information related to any on-ice disturbance of pinnipeds, including event-specific total counts of animals present, counts of reactions according to a three-point scale of response severity (1 = alert; 2 = movement; 3 = flight), and distance of closest approach;

(E) A written evaluation of the effectiveness of SWFSC 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;

(F) Final outcome of serious injury determinations for all incidents of marine mammal interactions where the animal(s) were released alive; and

(G) A summary of all relevant training provided by SWFSC.

(e) Reporting of injured or dead marine mammals:

(1) In the unanticipated event that the activity defined in § 219.1(a) of this chapter clearly causes the take of a

marine mammal in a prohibited manner, SWFSC 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 SWFSC Director (or designee). The incident must be reported immediately to OPR. OPR will review the circumstances of the prohibited take and work with SWFSC to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. The immediate decision made by SWFSC 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;

(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); and

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

(2) In the event that SWFSC 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), SWFSC shall immediately report the incident to OPR. The report must include the same information identified in § 219.26(e)(1) of this section. Activities may continue while OPR reviews the circumstances of the incident. OPR will work with SWFSC to determine whether additional mitigation measures or modifications to the activities are appropriate.

(3) In the event that SWFSC 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 § 219.21(a) of this chapter (*e.g.*, previously wounded animal, carcass with moderate to advanced decomposition, scavenger damage), SWFSC shall report the incident to OPR within 24 hours of the discovery. SWFSC shall provide photographs or video footage or other documentation of the stranded animal sighting to OPR.

§ 219.27 Letters of Authorization.

(a) To incidentally take marine mammals pursuant to these regulations, SWFSC 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, SWFSC 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, SWFSC must apply for and obtain a modification of the LOA as described in § 219.28 of this chapter.

(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 thirty days of a determination.

§ 219.28 Renewals and modifications of Letters of Authorization.

(a) An LOA issued under §§ 216.106 and 219.27 of this chapter for the

activity identified in § 219.21(a) of this chapter 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 § 219.28(c)(1) of this chapter), 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 § 219.28(c)(1) of this chapter) that do not change the findings made for the regulations or result in no more than a minor change in the total estimated number of takes (or distribution by species or years), 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 and 219.27 of this chapter for the activity identified in § 219.21(a) of this chapter may be modified by OPR under the following circumstances:

(1) Adaptive Management—OPR may modify (including augment) the existing mitigation, monitoring, or reporting measures (after consulting with SWFSC

regarding the practicability of the modifications) if doing so creates a reasonable likelihood of more effectively accomplishing the goals of the mitigation and monitoring set forth in the preamble for these regulations.

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

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

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

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

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

(2) Emergencies—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 § 219.22(b) of this chapter, an LOA may be modified without prior notice or opportunity for public comment. Notice would be published in the **Federal Register** within thirty days of the action.

§ 219.29 [Reserved]**§ 219.30 [Reserved]**

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