



## DEPARTMENT OF COMMERCE

### National Oceanic and Atmospheric Administration

#### 50 CFR Part 219

#### Docket No. 201020-0275

#### RIN 0648-BJ71

### **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; notification of issuance of Letters of Authorization.

**SUMMARY:** NMFS' Office of Protected Resources (OPR), upon request from 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 five years. These regulations, which allow for the issuance of Letters of Authorization (LOA) 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 [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER] through January 15, 2026.

**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 online at:

[www.fisheries.noaa.gov/action/incidental-take-authorization-noaa-southwest-fisheries-science-](https://www.fisheries.noaa.gov/action/incidental-take-authorization-noaa-southwest-fisheries-science-)

*center-fisheries-and*. In case of problems accessing these documents, please call the contact listed below.

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

**SUPPLEMENTARY INFORMATION:**

**Purpose and Need for Regulatory Action**

These regulations establish a framework under the authority of the MMPA (16 U.S.C. 1361 *et seq.*) to allow for the authorization of take of marine mammals incidental to the SWFSC's fisheries research activities in the California Current Ecosystem and the Antarctic Marine Living Resources Ecosystem research areas.

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

*Legal Authority for the Action*

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

directed by this legal authority, this rule contains mitigation, monitoring, and reporting requirements.

### *Summary of Major Provisions within the Regulations*

Following is a summary of the major provisions of these regulations regarding SWFSC fisheries research activities. These measures include:

- Required monitoring of the sampling areas to detect the presence of marine mammals before deployment of certain research gear; and
- Required implementation of the mitigation strategy known as the “move-on rule mitigation protocol” which incorporates best professional judgment, when necessary during certain research fishing operations.

### **Background**

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

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other “means of effecting the least practicable adverse impact” on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stocks for taking for certain subsistence uses (referred to in shorthand as “mitigation”); and requirements pertaining to the mitigation, monitoring and

reporting of the takings are set forth. The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

### **Summary of Request**

On April 30, 2020, we received an adequate and complete request from SWFSC for authorization to take marine mammals incidental to fisheries research activities. On May 8, 2020 (85 FR 27388), 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 did not receive any comments in response. We published a notice of proposed rulemaking in the **Federal Register** on August 28, 2020 (85 FR 53606) and requested comments and information from the public. Please see **Comments and Responses**, below.

These regulations are the second consecutive five-year incidental take regulations issued in response to a petition from SWFSC. The initial regulations were finalized in 2015 and are effective through October 30, 2020 (80 FR 58982; September 30, 2015). Three Letters of Authorization (LOA) were issued to SWFSC pursuant to the regulations, related to SWFSC research survey activities in the California Current Ecosystem (CCE), the Eastern Tropical Pacific (ETP), and the Antarctic Marine Living Resources Ecosystem (AMLR). Information related to this previous rulemaking and required reporting submitted by SWFSC according to the terms of the LOAs may be found online at: [www.fisheries.noaa.gov/action/incidental-take-authorization-noaa-fisheries-swpsc-fisheries-and-ecosystem-research](http://www.fisheries.noaa.gov/action/incidental-take-authorization-noaa-fisheries-swpsc-fisheries-and-ecosystem-research). SWFSC adhered to all mitigation, monitoring, and reporting requirements and did not exceed authorized numbers of take.

SWFSC conducts fisheries research using pelagic trawl gear used at various levels in the water column, pelagic longlines with multiple hooks, purse seine gear, 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.

The SWFSC conducts fisheries research surveys in the CCE, ETP, and the AMLR. However, SWFSC does not plan to conduct research over the five-year period in the ETP. Therefore, these regulations address only the CCE and AMLR. In the CCE, SWFSC requested authorization to take individuals of 24 stocks by Level A harassment, serious injury, or mortality (hereafter referred to as M/SI) and of 38 stocks by Level B harassment. In the AMLR, SWFSC requested authorization to take individuals of fifteen species by Level B harassment. No takes by M/SI are anticipated in the AMLR. These regulations are effective for five years.

## **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. Some surveys may be conducted onboard commercial fishing vessels or by cooperating scientists on non-NOAA vessels, but the SWFSC designs and executes the studies and funds vessel time. The SWFSC plans to administer and conduct approximately 18 survey programs over the five-year period, within two separate research areas. Please see Table 1-2 in SWFSC's application for details relating to the planned survey programs. The gear types used fall into several categories: towed nets fished at various levels in the water column, longline and other hook and line gear, purse seine nets, and other gear. Only use of trawl nets, hook and line gear, and purse seine nets

are likely to result in interaction with marine mammals. Many 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 finfish and shellfish species and their habitats, with that responsibility delegated within NOAA to NMFS.

In order to direct and coordinate the collection of scientific information needed to make informed fishery management decisions, Congress created six regional fisheries science centers, each a distinct organizational entity and the scientific focal point within NMFS for region-based Federal fisheries-related research. This research is aimed at monitoring fish stock recruitment, abundance, survival and biological rates, geographic distribution of species and stocks, ecosystem process changes, and marine ecological research. The SWFSC is the research arm of NMFS in the southwest region of the United States. The SWFSC conducts research and provides scientific advice to manage fisheries and conserve protected species in the geographic research areas listed above 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, cooperative research is designed to provide flexibility on a yearly basis in order to address issues as they arise. Some cooperative research projects last multiple years or may continue with modifications. Other projects only last 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 typically occur during May through June and September and longline surveys are typically completed during June-July and September.

### *Specified Geographical Region*

The SWFSC conducts research within two research areas considered to be distinct specified geographical regions: the CCE and AMLR. No research activity is planned within the ETP over the next five years. Please see Figures 1-1, 2-1, and 2-2 in the SWFSC application for maps of the research areas. We note here that, while the specified geographical regions within which the SWFSC operates may extend outside of the U.S. Exclusive Economic Zone (EEZ), the MMPA's authority does not extend into foreign territorial waters. Detailed descriptions of the SWFSC's research areas were provided in the notice of proposed rulemaking for SWFSC's previous incidental take regulations (80 FR 8166; February 13, 2015). Those descriptions remain accurate and sufficient, and we refer the reader to that notice rather than reprinting the information here.

### *Detailed Description of Activities*

A detailed description of SWFSC's planned activities was provided in the notice of proposed rulemaking (85 FR 53606; August 28, 2020) 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 August 28, 2020 (85 FR 53606) and requested comments and information from the public. During the 30-day comment period, we received comments from the Marine Mammal Commission (Commission) and from 6 private citizens. Of the latter, two comments expressed general opposition, two expressed general support, and two were not relevant to the proposed rulemaking. The remaining comments and our responses are provided here, and the comments have been posted online at: [www.fisheries.noaa.gov/action/incidental-take-authorization-noaa-](http://www.fisheries.noaa.gov/action/incidental-take-authorization-noaa-)

*southwest-fisheries-science-center-fisheries-and*. Please see the Commission's comment letter for full rationale behind the Commission's recommendations, to which we respond below. In response to the comments, minor changes were made to the take number for southern elephant seals and to certain reporting requirements, as detailed below.

The Commission noted that a 2015 requirement for SWFSC to report whether the move-on rule was waived for California sea lions was not included in the proposed rule. The Commission asserted that this information remains relevant (and would apply to purse seines in addition to longlines), and that it should be included as a requirement in the final rule. (See footnote 2 of the Commission's public comment letter.) NMFS concurs with this suggestion and has included these reporting requirements in the final rule.

*Comment* – The Commission recommends that NMFS ensure that any criteria and guidance developed regarding de minimis acoustic sources consider the overall level of impacts and are used consistently across all action proponents and applications.

*Response* – NMFS concurs with the Commission's recommendation and intends to use any such criteria and/or guidance consistently.

*Comment* – The Commission recommends that NMFS require SWFSC to estimate the numbers of marine mammals that may be taken by Level B harassment due to sound exposure resulting from use of active acoustic sources based on the 120- rather than the 160-dB re 1  $\mu$ Pa threshold for non-impulsive, intermittent sources, including those sources whose primary operating frequency is above 180 kHz that have been shown to elicit behavioral responses above the 120-dB re 1  $\mu$ Pa threshold.

*Response* – NMFS does not concur with the Commission's recommendation and does not adopt it. NMFS has addressed the Commission's recommendation on numerous occasions, and the Commission does not offer any substantive new points in support of its position. NMFS provided a detailed explanation of the reasons why the recommendation was not followed in response to the Commission's letter pertaining to proposed incidental take regulations for

NMFS' Alaska Fisheries Science Center (84 FR 46788; September 5, 2019). We refer the Commission and the public to that explanation.

*Comment* – The Commission recommends that NMFS prioritize updating its generic Level B harassment thresholds and formulate a strategy for developing thresholds for all types of sound sources and for incorporating new data regarding these thresholds as soon as possible.

*Response* – NMFS concurs with the Commission's recommendation and agrees that this issue is a priority.

*Comment* – The Commission recommends that NMFS increase the annual take by Level B harassment of southern elephant seals due to on-ice disturbance from one per year to five per year in the final rule, in order to account for the potential that smaller groups could be present.

*Response* – NMFS concurs with the recommendation and has increased the annual take number as suggested. See Table 9.

*Comment* – The Commission recommends that NMFS include in all proposed and final incidental harassment authorizations and rules, including the SWFSC's final rule, the explicit requirement to cease activities if a marine mammal is injured or killed by vessel strike, until NMFS reviews the circumstances involving any injury or death that is likely attributable to the activities and determines what additional measures are necessary to minimize additional injuries or deaths.

*Response* – NMFS does not anticipate, and has not authorized, any takes associated with vessel strikes. Further, in the event of a vessel strike, SWFSC is required both to collect and report an extensive suite of information that NMFS has identified in order to evaluate the event, and to notify OPR and the West Coast Regional Stranding Coordinator as soon as feasible. At that point, as the Commission suggests, NMFS would work with SWFSC to determine whether there are additional mitigation measures or modifications that could further reduce the likelihood of vessel strike for the activities. However, given the very low likelihood of a vessel strike occurring, the protective value of ceasing operations while NMFS and SWFSC discuss potential

additional mitigations in order to avoid a second highly unlikely event is unclear, while a requirement for project activities to cease would not be practicable for a vessel that is operating on the open water. Therefore, NMFS does not concur that the measure is warranted, and we have not included this requirement in the authorization. NMFS retains authority to modify the LOA and cease all activities immediately based on a vessel strike and will exercise that authority if warranted.

With respect to the Commission's recommendation that NMFS include these requirements in all proposed and final incidental take authorizations, NMFS determines the requirements for mitigation measures in each authorization based on numerous case-specific factors, including the practicability of the measures for applicant implementation, which may consider such things as cost, impact on operations, and, in the case of a military readiness activity, personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity. As NMFS must make these determinations on a case-by-case basis, we therefore do not agree with this recommendation.

*Comment* – The Commission recommends that NMFS (1) include a specific condition either in section 219.5 of the final rule or in any LOA issued under the final rule requiring SWFSC to cease its activities and consult with NMFS if the number of authorized takes has been met for any species and (2) reinforce that SWFSC should keep a running tally of the numbers of species-specific M/SI and on-ice Level B harassment takes and the line-kilometers surveyed to ensure that the authorized taking limits are not exceeded.

*Response* – NMFS does not concur with the recommendation and does not adopt it. The LOA stipulates that the allowable taking is limited to the authorized numbers specified in the LOA, and states that any taking exceeding the authorized numbers (or any taking of a species for which take is not authorized) is prohibited and may result in the modification, suspension, or revocation of the LOA. Additional, redundant language is not necessary. Therefore, while we agree that SWFSC must ensure they do not exceed authorized takes, we do not agree that the

recommended requirements are helpful. SWFSC is responsible for ensuring that it does not operate in violation of an issued LOA.

*Comment* – The Commission recommends that NMFS require SWFSC to include in each annual monitoring report (1) the distance at which a pinniped is disturbed and the closest point of approach for each disturbance event; (2) the numbers of takes differentiated by species and age class for each disturbance event; and (3) the raw sightings data in each annual monitoring report.

*Response* – NMFS concurs with the recommendation and has included the suggested reporting requirements in the final rule. See § 219.6(e)(2)(ii)(D) of the final regulations.

*Comment* – Regarding the negligible impact analysis provided for the California coastal stock of bottlenose dolphin, the Commission states that NMFS should apply the information contained in the current stock assessment reports when making negligible impact determinations unless reliable, relevant new information that has yet to be fully assessed and incorporated into the reports warrants some other treatment, and additionally recommends that NMFS authorize a smaller number of takes by M/SI than proposed, such that total estimated M/SI does not exceed the potential biological removal (PBR) value.

*Response* – NMFS does not concur with the Commission’s recommendation to reduce the authorized take number for the California coastal stock of bottlenose dolphin, or the underlying rationale, and does not adopt it. We also clarify that the proposed annual take number for the stock (0.8) does not exceed the PBR value of 2.7. The annual take number does exceed the residual PBR value of 0.7. (See Table 1, Table 9, and **Negligible Impact Analysis and Determinations** for details of the analysis.) The Commission suggests first that application of NMFS’ new criteria for negligible impact determinations (NID) under section 101(a)(5)(E) of the MMPA (NMFS, 2020) would show the proposed authorized take number to not be negligible, and that NMFS should explain its rationale if it believes that the criteria are not relevant when assessing M/SI that occurs in contexts other than commercial fishing. Indeed, application of those criteria to NIDs made under section 101(a)(5)(A) of the MMPA may not be

appropriate. Section 101(a)(5)(E) only pertains to marine mammal stocks designated as depleted because of their listing under the ESA, and the corresponding criteria were developed in that context. The California coastal stock of bottlenose dolphin is not designated as a depleted stock. NMFS has made no decisions on whether and how to apply the 101(a)(5)(E) criteria to other negligible impact determinations under section 101(a)(5)(A). Therefore, the appropriate negligible impact factor may be different than those specified in the 101(a)(5)(E) criteria. Applicability of those criteria to stocks not designated as depleted was not considered in development of the criteria and is not addressed by the Commission. Therefore, we reject the suggestion that the criteria may be used to show deficiency in NMFS' NID for the California coastal stock of bottlenose dolphin. Please see the discussion of use of PBR generally for section 101(a)(5)(A) authorizations below in the **Negligible Impact Analysis and Determinations** section.

With regard to the Commission's recommendation to apply the information contained in the current stock assessment reports, NMFS agrees and has done so, as shown in the **Negligible Impact Analysis and Determinations** section of this preamble. In addition to considering quantitative information, *i.e.*, the estimate of annual M/SI and the stock's PBR value, we also consider other relevant factors discussed in the stock assessment report (SAR), such as the nature of the recorded M/SI events that contribute to the estimate and the information that is available regarding stock abundance. NMFS disagrees with the Commission's characterization of the discussion of these factors as "downplaying" the information in the SAR and notes the Commission's apparent agreement with the validity of these points, *i.e.*, that the stock abundance is likely negatively biased and that some of the specific incidents contributing to the SAR estimate of annual M/SI are unlikely to recur. It is appropriate to perform a negligible impact analysis by considering the quantitative information available in the SAR in context with other, qualitative information. Although not currently applicable to 101(a)(5)(A) NID evaluations, the 101(a)(5)(E) criteria explicitly address this, stating "There may be circumstances, such as when

the M/SI estimate is slightly below or slightly above the negligible impact threshold(s), where the analyst may deviate from the determination that would be dictated by strictly adhering to the [negligible impact] thresholds. Such deviations may be due to the consideration of additional factors affecting the likelihood or impact of the incidental M/SI [...] In such circumstances, NMFS should provide the rationale in the document supporting the NID.” In this case, NMFS has described the available quantitative information, evaluated additional relevant information, and provided its rationale in making a finding of negligible impact.

Finally, the Commission does not suggest that the level of taking proposed for authorization is unrealistically high but, nevertheless, recommends that it be reduced in order to, in the Commission’s estimation, make a finding of negligible impact. It would be improper to lower arbitrarily NMFS’ best estimate of anticipated taking in order to make the necessary finding. Rather, that best estimate must be evaluated in context of all relevant available information and, if the estimated taking is found to be likely to cause greater than a negligible impact on the affected species or stock, additional mitigation that may reduce the amount of anticipated taking may be considered. In this case, NMFS has considered the amount of anticipated taking in context of all relevant available information and has made the necessary finding of negligible impact.

### **Description of Marine Mammals in the Area of the Specified Activity**

We have 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 refer the reader to Sections 3 and 4 of SWFSC’s application, instead of reprinting the information here. Additional information regarding population trends and threats may be found in NMFS’ SARs ([www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments](http://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments)), and more general information about these

species (*e.g.*, physical and behavioral descriptions) may be found on NMFS' website ([www.fisheries.noaa.gov/find-species](http://www.fisheries.noaa.gov/find-species)).

Table 1 lists all species with expected potential for occurrence in the specified geographical regions where SWFSC plans to continue the specified activities and summarizes information related to the population or stock, including regulatory status under the MMPA and ESA and PBR, where known. For taxonomy, we follow Committee on Taxonomy (2020). PBR, defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population, is discussed in greater detail later in this document (see **Negligible Impact Analysis and Determinations**).

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS's stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that the stock comprises. For some species, this geographic area may extend beyond U.S. waters. Survey abundance (as compared to stock or species abundance) is the total number of individuals estimated within the survey area, which may or may not align completely with a stock's geographic range as defined in the SARs. These surveys may also extend beyond U.S. waters.

All stocks occurring in the CCE are assessed in either NMFS' U.S. Alaska SARs or U.S. Pacific SARs. All values presented in Table 1 are the most recent available at the time of writing and are available in the 2019 SARs (Carretta *et al.*, 2020; Muto *et al.*, 2020). Antarctic stocks are not generally defined by NMFS, and information relating to species occurring in the AMLR is lacking relative to those occurring in the CCE. For species occurring in AMLR, we provide International Union for the Conservation of Nature (IUCN) status. The IUCN systematically assesses the relative risk of extinction for terrestrial and aquatic plant and animal species via a classification scheme using five designations, including three threatened categories (Critically

Endangered, Endangered, and Vulnerable) and two non-threatened categories (Near Threatened and Least Concern) ([www.iucnredlist.org/](http://www.iucnredlist.org/); accessed June 22, 2020). These assessments are generally made relative to the species' global status, and therefore may have limited applicability when marine mammal stocks are defined because we analyze the potential population-level effects of the specified activity to the relevant stock. However, where stocks are not defined, IUCN status can provide a useful reference.

### *California Current*

In the CCE, 33 species (with 40 managed stocks) are considered to have the potential to co-occur with SWFSC activities. Species that could potentially occur in the research area but are not expected to have the potential for interaction with SWFSC research gear or that are not likely to be harassed by SWFSC's use of active acoustic devices are described briefly but omitted from further analysis. These include extralimital species, which are species that do not normally occur in a given area but for which there are one or more occurrence records that are considered beyond the normal range of the species. Species considered to be extralimital here include the North Pacific right whale (*Eubalaena japonica*) and the Bryde's whale (*Balaenoptera edeni brydei*). In addition, the sea otter is found in coastal waters, with the southern sea otter (*Enhydra lutris nereis*) found in California and the northern (or eastern) sea otter (*E. l. kenyoni*; Washington stock only) found in Washington. However, sea otters are managed by the U.S. Fish and Wildlife Service and are not considered further in this document. Most survey activity occurs offshore and is therefore less likely to interact with coastal species such as harbor porpoise, the coastal stock of bottlenose dolphin, or gray whales (during the northbound migration), although these species are considered further in this document. SWFSC does not conduct research activities in the inland waters of Washington. Therefore, stocks occurring solely in those waters (*i.e.*, harbor porpoise and harbor seal) are not addressed herein.

### **Table 1. Marine Mammals Potentially Present in the Vicinity of SWFSC Research Activities in the CCE.**

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N) <sup>1</sup>	Stock abundance (CV, N <sub>min</sub> , most recent abundance survey) <sup>2</sup>	PBR	Annual M/SI <sup>3</sup>
Order Cetartiodactyla – Cetacea – Superfamily Mysticeti (baleen whales)						
Family Eschrichtiidae						
Gray whale	<i>Eschrichtius robustus</i>	Eastern North Pacific (ENP)	-; N	26,960 (0.05; 25,849; 2016)	801	139
Family Balaenopteridae (rorquals)						
Humpback whale	<i>Megaptera novaeangliae kuzira</i>	California/Oregon/Washington (CA/OR/WA)	E/D; Y	2,900 (0.05; 2,784; 2014)	16.7 <sup>9</sup>	≥42.1
Minke whale	<i>Balaenoptera acutorostrata scammoni</i>	CA/OR/WA	-; N	636 (0.72; 369; 2014)	3.5	≥1.3
Sei whale	<i>B. borealis borealis</i>	ENP	E/D; Y	519 (0.4; 374; 2014)	0.75	≥0.2
Fin whale	<i>B. physalus physalus</i>	CA/OR/WA	E/D; Y	9,029 (0.12; 8,127; 2014)	81	≥43.5
Blue whale	<i>B. musculus musculus</i>	ENP	E/D; Y	1,496 (0.44; 1,050; 2014)	1.2 <sup>9</sup>	≥19.4
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Physeteridae						
Sperm whale	<i>Physeter macrocephalus</i>	CA/OR/WA	E/D; Y	1,997 (0.57; 1,270; 2014)	2.5	0.6
Family Kogiidae						
Pygmy sperm whale	<i>Kogia breviceps</i>	CA/OR/WA	-; N	4,111 (1.12; 1,924; 2014)	19.2	0
Dwarf sperm whale	<i>K. sima</i>	CA/OR/WA <sup>5</sup>	-; N	Unknown	n/a	0
Family Ziphiidae (beaked whales)						
Cuvier's beaked whale	<i>Ziphius cavirostris</i>	CA/OR/WA	-; N	3,274 (0.67; 2,059; 2014)	21	<0.1
Baird's beaked whale	<i>Berardius bairdii</i>	CA/OR/WA	-; N	2,697 (0.6; 1,633; 2014)	16	0
Hubbs' beaked whale	<i>Mesoplodon carlhubbsi</i>	CA/OR/WA <sup>6</sup>	-; N	3,044 (0.54; 1,967; 2014)	20	0.1
Blainville's beaked whale	<i>M. densirostris</i>					
Ginkgo-toothed beaked whale	<i>M. ginkgodens</i>					
Perrin's beaked whale	<i>M. perrini</i>					
Lesser (pygmy) beaked whale	<i>M. peruvianus</i>					
Stejneger's beaked whale	<i>M. stejnegeri</i>					
Family Delphinidae						
Common bottlenose dolphin	<i>Tursiops truncatus truncatus</i>	CA/OR/WA Offshore	-; N	1,924 (0.54; 1,255; 2014)	11	≥1.6
		California Coastal	-; N	453 (0.06; 346; 2011)	2.7	≥2.0
Striped dolphin	<i>Stenella coeruleoalba</i>	CA/OR/WA	-; N	29,211 (0.2; 24,782; 2014)	238	≥0.8
ENP long-beaked common dolphin	<i>Delphinus delphis bairdii</i>	California	-; N	101,305 (0.49; 68,432; 2014)	657	≥35.4
Common dolphin	<i>D. d. delphis</i>	CA/OR/WA	-; N	969,861 (0.17; 839,325; 2014)	8,393	≥40
Pacific white-sided dolphin	<i>Lagenorhynchus obliquidens</i>	CA/OR/WA	-; N	26,814 (0.28; 21,195; 2014)	191	7.5
Northern right whale dolphin	<i>Lissodelphis borealis</i>	CA/OR/WA	-; N	26,556 (0.44; 18,608; 2014)	179	3.8
Risso's dolphin	<i>Grampus griseus</i>	CA/OR/WA	-; N	6,336 (0.32; 4,817; 2014)	46	≥3.7

Killer whale	<i>Orcinus orca</i> <sup>4</sup>	West Coast Transient <sup>7</sup>	-; N	243 (n/a; 2009)	2.4	0
		ENP Offshore	-; N	300 (0.1; 276; 2012)	2.8	0
		ENP Southern Resident	E/D; Y	75 (n/a; 2018)	0.13	0
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>	CA/OR/WA	-; N	836 (0.79; 466; 2014)	4.5	1.2
Family Phocoenidae (porpoises)						
Harbor porpoise	<i>Phocoena phocoena vomerina</i>	Morro Bay	-; N	4,255 (0.56; 2,737; 2012)	66	≥0.4
		Monterey Bay	-; N	3,455 (0.58; 2,197; 2013)	23	≥0.2
		San Francisco-Russian River	-; N	7,524 (0.57; 4,801; 2017)	48	≥0.6
		Northern CA/Southern OR	-; N	24,195 (0.4; 17,447; 2016)	349	≥0.2
		Northern OR/WA Coast	-; N	21,487 (0.44; 15,123; 2011)	151	≥3
Dall's porpoise	<i>Phocoenoides dalli dalli</i>	CA/OR/WA	-; N	25,750 (0.45; 17,954; 2014)	172	0.3
Order Carnivora – Superfamily Pinnipedia						
Family Otariidae (eared seals and sea lions)						
Guadalupe fur seal	<i>Arctocephalus philippii townsendi</i>	Mexico to California	T/D; Y	34,187 (n/a; 31,019; 2013)	1,062	≥3.8 <sup>10</sup>
Northern fur seal	<i>Callorhinus ursinus</i>	Pribilof Islands/Eastern Pacific	D; Y	620,660 (0.2; 525,333; 2016)	11,295	399
		California	-; N	14,050 (n/a; 7,524; 2013)	451	1.8
California sea lion	<i>Zalophus californianus</i>	United States	-; N	257,606 (n/a; 233,515; 2014)	14,011	≥321
Steller sea lion	<i>Eumetopias jubatus monteriensis</i>	Eastern U.S.	-; N	43,201 (n/a; 2017)	2,592	112
Family Phocidae (earless seals)						
Harbor seal	<i>Phoca vitulina richardii</i>	California	-; N	30,968 (n/a; 27,348; 2012)	1,641	43
		OR/WA Coast <sup>8</sup>	-; N	24,732 (0.12; 22,380; 1999)	n/a	10.6
Northern elephant seal	<i>Mirounga angustirostris</i>	California Breeding	-; N	179,000 (n/a; 81,368; 2010)	4,882	8.8

<sup>1</sup>Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

<sup>2</sup>NMFS marine mammal stock assessment reports at: [www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments](http://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments). CV is coefficient of variation; N<sub>min</sub> is the minimum estimate of stock abundance. In some cases, CV is not applicable. For most stocks of killer whales, the abundance values represent direct counts of individually identifiable animals; therefore there is only a single abundance estimate with no associated CV. For certain stocks of pinnipeds, abundance estimates are based upon observations of animals (often pups) ashore multiplied by some correction factor derived from knowledge of the species' (or similar species') life history to arrive at a best abundance estimate; therefore, there is no associated CV. In these cases, the minimum abundance may represent actual counts of all animals ashore.

<sup>3</sup>These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (e.g., commercial fisheries, subsistence hunting, ship strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value. All M/SI values are as presented in the 2019 SARs.

<sup>4</sup>Transient and resident killer whales are considered unnamed subspecies (Committee on Taxonomy, 2020).

<sup>5</sup>No information is available to estimate the population size of dwarf sperm whales off the U.S. West Coast, as no sightings of this species have been documented despite numerous vessel surveys of this region (Carretta *et al.*, 2017). Dwarf and pygmy sperm whales are difficult to differentiate at sea but, based on previous sighting surveys and historical stranding data, it is thought that recent ship survey sightings were of pygmy sperm whales.

<sup>6</sup>The six species of Mesoplodont beaked whales occurring in the CA/OR/WA region are managed as a single stock due to the rarity of records and the difficulty in distinguishing these animals to species in the field. Based on bycatch and stranding records, it appears that *M. carlhubbsi* is the most commonly encountered of these species (Carretta *et al.*, 2008; Moore and Barlow, 2013).

<sup>7</sup>The abundance estimate for this stock includes only animals from the “inner coast” population occurring in inside waters of southeastern Alaska, British Columbia, and Washington—excluding animals from the “outer coast” subpopulation, including animals from California—and therefore should be considered a minimum count. For comparison, the previous abundance estimate for this stock, including counts of animals from California that are now considered outdated, was 354.

<sup>8</sup>Abundance estimate for this stock is not considered current. PBR is therefore considered undetermined, as there is no current minimum abundance estimate for use in calculation. We nevertheless present the most recent abundance estimates, as it represents the best available information for use in this document.

<sup>9</sup>These stocks are known to spend a portion of their time outside the U.S. EEZ. Therefore, the PBR presented here is the allocation for U.S. waters only and is a portion of the total. The total PBR for blue whales is 2.1 (7/12 allocation for U.S. waters), and the total for CA/OR/WA humpback whales is 33.4 (one half allocation for U.S. waters). Annual M/SI presented for these species is for U.S. waters only.

<sup>10</sup>This represents annual M/SI in U.S. waters. However, the vast majority of M/SI for this stock—the level of which is unknown—would likely occur in Mexican waters. There is insufficient information to determine whether mortality in Mexico exceeds the PBR for this stock, but given the observed growth of the population over time, this is unlikely (Carretta *et al.*, 2020).

Prior to 2016, humpback whales were listed under the ESA as an endangered species worldwide. Following a 2015 global status review (Bettridge *et al.*, 2015), NMFS established 14 distinct population segments (DPS) with different listing statuses (81 FR 62259; September 8, 2016) pursuant to the ESA. The DPSs that occur in U.S. waters do not necessarily equate to the existing stocks designated under the MMPA and shown in Table 1. Because MMPA stocks cannot be portioned, *i.e.*, parts managed as ESA-listed while other parts managed as not ESA-listed, until such time as the MMPA stock delineations are reviewed in light of the DPS designations, NMFS considers the existing humpback whale stocks under the MMPA to be endangered and depleted for MMPA management purposes (*e.g.*, selection of a recovery factor, stock status).

Within U.S. West Coast waters, three current DPSs may occur: the Hawaii DPS (not listed), Mexico DPS (threatened), and Central America DPS (endangered). According to Wade *et al.* (2016), whales off of Washington are most likely to be from the Hawaii DPS (52.9 percent), but are almost equally likely to be from the Mexico DPS (41.9 percent), and could also be from the Central America DPS (14.7 percent). Off of Oregon and California, whales are most likely to be from the Mexico DPS (89.6 percent), with a 19.7 percent probability of an encountered whale being from the Central America DPS. Note that these probabilities reflect the upper limit of the 95 percent confidence interval of the probability of occurrence; therefore, numbers may not sum to 100 percent for a given area.

*Take Reduction Planning* – Take reduction plans are designed to help recover and prevent the depletion of strategic marine mammal stocks that interact with certain U.S. commercial fisheries, as required by Section 118 of the MMPA. The immediate goal of a take reduction plan is to reduce, within six months of its implementation, the M/SI of marine mammals incidental to commercial fishing to less than the PBR level. The long-term goal is to reduce, within five years of its implementation, the M/SI of marine mammals incidental to commercial fishing to insignificant levels, approaching a zero serious injury and mortality rate, taking into account the economics of the fishery, the availability of existing technology, and existing state or regional fishery management plans. Take reduction teams are convened to develop these plans.

For marine mammals in the CCE, there is currently one take reduction plan in effect (Pacific Offshore Cetacean Take Reduction Plan). The goal of this plan is to reduce M/SI of several marine mammal stocks incidental to the California thresher shark/swordfish drift gillnet fishery (CA DGN). A team was convened in 1996 and a final plan produced in 1997 (62 FR 51805; October 3, 1997). Marine mammal stocks of concern initially included the California, Oregon, and Washington stocks for all CCE beaked whales, short-finned pilot whales, pygmy sperm whales, sperm whales, and humpback whales. The most recent five-year averages of M/SI for all stocks except the humpback whale are below PBR. For humpback whales, the majority of total annual M/SI is attributed to other fisheries—notably pot/trap fisheries—and ship strikes, with no observed M/SI in the DGN fishery from 2013-2017, and estimated mean annual M/SI in the fishery at  $<0.1$  ( $CV = 1.9$ ) over the same period. The most recent observed take of a sperm whale in the DGN fishery was in 2010, though the mean annual estimated M/SI attributed to the fishery over the period from 2008-2017 is 0.56 ( $CV = 0.78$ ). Two short-finned pilot whales were observed taken in the DGN fishery in 2014, leading to a mean annual M/SI estimate of 1.2 ( $CV = 0.39$ ) for the fishery. None of the other species were observed taken in the fishery in the most recent five-year period for which data are available, though some have estimated mean annual

M/SI values for the fishery that are > 0. More information is available online at:

[www.fisheries.noaa.gov/national/marine-mammal-protection/pacific-offshore-cetacean-take-reduction-plan](http://www.fisheries.noaa.gov/national/marine-mammal-protection/pacific-offshore-cetacean-take-reduction-plan). Of the stocks of concern, the SWFSC has requested the authorization of incidental M/SI for the short-finned pilot whale only (see “Estimated Take by Incidental Harassment” later in this document). The SWFSC does not use drift gillnets in its fisheries research program; therefore, take reduction measures applicable to the CA DGN fisheries are not relevant to the SWFSC.

*Unusual Mortality Events (UME)* – A UME is defined under the MMPA as a stranding that is unexpected; involves a significant die-off of any marine mammal population; and demands immediate response. From 1991 to the present, there have been 16 formally recognized UMEs on the U.S. West Coast involving species under NMFS’ jurisdiction. The only currently ongoing investigations involve Guadalupe fur seals and gray whales along the west coast.

Increased strandings of Guadalupe fur seals (up to eight times the historical average) have occurred along the entire coast of California and extending into Oregon and Washington. Increased strandings in California were reported beginning in January 2015 and peaked from April through June 2015, but have remained well above average. Strandings in Oregon and Washington became elevated starting in 2019 and are five times higher than the historical average. Findings from the majority of stranded animals include malnutrition with secondary bacterial and parasitic infections, and the UME has been attributed to ecological factors. For more information, please visit: [www.fisheries.noaa.gov/national/marine-life-distress/2015-2020-guadalupe-fur-seal-unusual-mortality-event-california](http://www.fisheries.noaa.gov/national/marine-life-distress/2015-2020-guadalupe-fur-seal-unusual-mortality-event-california).

Since January 1, 2019, elevated gray whale strandings have occurred along the west coast of North America from Mexico through Alaska. As of September 2, 2020, there have been a total of 378 whales reported in the event, with approximately 168 dead whales in Mexico, 194 whales in the United States (53 in California; 9 in Oregon; 46 in Washington, 86 in Alaska), and 16 whales in British Columbia, Canada. For the United States, the historical 18-year 5-month

average (Jan–May) is 14.8 whales for the four states for this same time-period. Several dead whales have been emaciated with moderate to heavy whale lice (cyamid) loads. Necropsies have been conducted on a subset of whales with additional findings of vessel strike in three whales and entanglement in one whale. In Mexico, 50-55 percent of the free-ranging whales observed in the lagoons in winter have been reported as “skinny” compared to the annual average of 10-12 percent “skinny” whales normally seen. The cause of the UME is as yet undetermined. For more information, please visit: [www.fisheries.noaa.gov/national/marine-life-distress/2019-2020-gray-whale-unusual-mortality-event-along-west-coast-and](http://www.fisheries.noaa.gov/national/marine-life-distress/2019-2020-gray-whale-unusual-mortality-event-along-west-coast-and).

Additional UMEs in the past ten years include those involving California sea lions (2013-2016; ecological factors) and large whales in Alaska and British Columbia (2015-2016; undetermined cause with secondary ecological factors). For more information on UMEs, please visit: [www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-unusual-mortality-events](http://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-unusual-mortality-events).

### *Antarctic*

The SWFSC’s Antarctic Research Area (ARA) comprises a portion of the AMLR ecosystem. In the ARA, seventeen species are considered to have the potential to co-occur with SWFSC activities. Marine mammals in the AMLR do not constitute stocks under U.S. jurisdiction; therefore, the stocks are not managed by NMFS, there are no SARs, and substantially less information is available for these species in relation to the stocks or populations and their occurrence in the ARA than is available for CCE stocks (*e.g.*, PBR is not calculated for AMLR stocks, and strategic designations are not made). Extralimital species in the ARA include the pygmy right whale (*Caperea marginata*), sei whale, Cuvier’s beaked whale, Shepherd’s beaked whale (*Tasmacetus shepherdi*), Gray’s beaked whale (*Mesoplodon grayi*), and strap-toothed beaked whale (*M. layardii*), which have distributions that only border the northernmost edge of the ARA. The Ross seal (*Ommatophoca rossii*) is also considered extralimital to the ARA due to its preference for dense pack ice, which is not typically present in the ARA.

**Table 2. Marine mammals potentially present in the vicinity of SWFSC research activities in the AMLR.**

Common name	Scientific name	Stock <sup>2</sup>	ESA/MMPA/IUCN status <sup>3</sup>	Abundance (CV) <sup>4</sup>
Order Cetartiodactyla – Cetacea – Superfamily Mysticeti (baleen whales)				
Family Balaenidae (right whales)				
Southern right whale	<i>Eubalaena australis</i>		E/D/LC	1,755 (0.62) <sup>5</sup>
Family Balaenopteridae (rorquals)				
Humpback whale	<i>Megaptera novaeangliae australis</i>		E/D/LC	9,484 (0.28) <sup>5</sup>
Antarctic minke whale	<i>Balaenoptera bonaerensis</i>		-/NT	18,125 (0.28) <sup>5</sup>
Fin whale	<i>B. physalus quoyi</i>		E/D/VU	4,672 (0.42) <sup>5</sup>
Blue whale	<i>B. musculus intermedia</i>		E/D/EN	1,700 (95% CI 860-2,900) <sup>6</sup>
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)				
Family Physeteridae				
Sperm whale	<i>Physeter macrocephalus</i>		E/D/VU	12,069 (0.17) <sup>7</sup>
Family Ziphiidae (beaked whales)				
Arnoux' beaked whale	<i>Berardius arnuxii</i>		-/DD	Unknown
Southern bottlenose whale	<i>Hyperoodon planifrons</i>		-/LC	53,743 (0.12) <sup>8</sup>
Family Delphinidae				
Hourglass dolphin	<i>Lagenorhynchus cruciger</i>		-/LC	144,300 (0.17) <sup>9</sup>
Killer whale	<i>Orcinus orca</i> <sup>1</sup>		-/DD	24,790 (0.23) <sup>8</sup>
Long-finned pilot whale	<i>Globicephala melas edwardii</i>		-/LC	200,000 (0.35) <sup>9</sup>
Family Phocoenidae (porpoises)				
Spectacled porpoise	<i>Phocoena dioptrica</i>		-/LC	Unknown
Order Carnivora – Superfamily Pinnipedia				
Family Otariidae (eared seals and sea lions)				
Antarctic fur seal	<i>Arctocephalus gazella</i>	South Georgia	-/LC	2,700,000 <sup>10</sup>
Family Phocidae (earless seals)				
Southern elephant seal	<i>Mirounga leonina</i>	South Georgia	-/LC	401,572 <sup>11</sup>
Weddell seal	<i>Leptonychotes weddellii</i>		-/LC	500,000-1,000,000 <sup>12</sup>
Crabeater seal	<i>Lobodon carcinophaga</i>		-/LC	5,000,000-10,000,000 <sup>12</sup>
Leopard seal	<i>Hydrurga leptonyx</i>		-/LC	222,000-440,000 <sup>12</sup>

<sup>1</sup>Three distinct forms of killer whale have been described from Antarctic waters; referred to as types A, B, and C, they are purported prey specialists on Antarctic minke whales, seals, and fish, respectively (Pitman and Ensor, 2003; Pitman *et al.*, 2010).

<sup>2</sup>For most species in the AMLR, stocks are not delineated and entries refer generally to individuals of the species occurring in the research area.

<sup>3</sup>Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Any species listed under the ESA is automatically designated under the MMPA as depleted. IUCN status: Endangered (EN), Vulnerable (VU), Near Threatened (NT), Least Concern (LC), Data Deficient (DD).

<sup>4</sup>CV is coefficient of variation. All abundance estimates, except for those from Reilly *et al.* (2004) (right, humpback, minke, and fin whales), are for entire Southern Ocean (*i.e.*, waters south of 60°S) and not the smaller area comprising the SWFSC research area.

<sup>5</sup>Abundance estimates reported in Reilly *et al.* (2004) for the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) survey area from 2000. Surveys include Antarctic Peninsula (473,300 km<sup>2</sup>) and Scotia Sea (1,109,800 km<sup>2</sup>) strata, which correspond roughly to ARA, as reported by Hewitt *et al.* (2004).

<sup>6</sup>Southern Ocean abundance estimate (Branch *et al.*, 2007). CI is confidence interval.

<sup>7</sup>Southern Ocean abundance estimate (IWC, 2001 in Whitehead, 2002).

<sup>8</sup>Southern Ocean abundance estimate from circumpolar surveys covering 68 percent of waters south of 60°S from 1991-98 (Branch and Butterworth, 2001).

<sup>9</sup>Southern Ocean abundance estimate derived from surveys conducted from 1976-88 (Kasamatsu and Joyce, 1995).

<sup>10</sup>South Georgia abundance estimate; likely >95 percent of range-wide abundance (Forcada and Staniland, 2009). Genetic evidence shows two distinct population regions, likely descended from surviving post-sealing populations at South Georgia, Bouvetøya, and Kerguelen Islands (Wynen *et al.*, 2000; Forcada and Staniland, 2009). Individuals from the South Georgia population (including breeding populations at the South Orkney and South Shetland Islands, which are within the ARA) are likely to occur in the ARA.

<sup>11</sup>Four genetically distinct populations are recognized: the Peninsula Valdés population in Argentina, the South Georgia population in the South Atlantic Ocean, the Kerguelen population in the South Indian Ocean and the Macquarie population in the South Pacific Ocean (Slade *et al.*, 1998; Hoelzel *et al.*, 2001). Animals occurring in ARA are likely to belong to South Georgia population, which includes subpopulations at South Georgia Island (>99% of population) and at the South Orkney and South Shetland Islands; South Georgia population abundance estimate from 2001 (McMahon *et al.*, 2005).

<sup>12</sup>Range-wide abundance estimates (Thomas and Terhune, 2009; Bengtson, 2009; Rogers, 2009).

### *Marine Mammal Hearing*

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Current data indicate that not all marine mammal species have equal hearing capabilities (*e.g.*, Richardson *et al.*, 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007) recommended that marine mammals be divided into functional hearing groups based on directly measured or estimated hearing ranges on the basis of available behavioral response data, audiograms derived using auditory evoked potential techniques, anatomical modeling, and other data. Note that no direct measurements of hearing ability have been successfully completed for mysticetes (*i.e.*, low-frequency cetaceans).

Subsequently, NMFS (2018) described generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the approximately 65 dB threshold from the normalized composite audiograms, with an exception for lower limits for low-frequency cetaceans where the result was deemed to be biologically implausible and the lower bound from Southall *et al.* (2007) retained. Marine mammal hearing groups and their associated hearing ranges are provided in Table 3.

### **Table 3. Marine Mammal Hearing Groups (NMFS, 2018).**

Hearing Group	Generalized Hearing Range*
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 35 kHz
Mid-frequency (MF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz
High-frequency (HF) cetaceans (true porpoises, <i>Kogia</i> , river dolphins, cephalorhynchid, <i>Lagenorhynchus cruciger</i> & <i>L. australis</i> )	275 Hz to 160 kHz
Phocid pinnipeds (PW) (underwater) (true seals)	50 Hz to 86 kHz
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 39 kHz

\* Represents the generalized hearing range for the entire group as a composite (*i.e.*, all species within the group), where individual species' hearing ranges are typically not as broad. Generalized hearing range chosen based on ~65 dB threshold from normalized composite audiogram, with the exception for lower limits for LF cetaceans (Southall *et al.*, 2007) and PW pinniped (approximation).

For more detail concerning these groups and associated frequency ranges, please see NMFS (2018) for a review of available information. Within the CCE, 33 marine mammal species (27 cetacean and six pinniped [four otariid and two phocid] species) have the potential to co-occur with SWFSC research activities. Please refer to Table 1. Of the 27 cetacean species that may be present, six are classified as low-frequency cetaceans (*i.e.*, all mysticete species), seventeen are classified as mid-frequency cetaceans (*i.e.*, all delphinid and ziphiid species and the sperm whale), and four are classified as high-frequency cetaceans (*i.e.*, porpoises and *Kogia* spp.). Within the AMLR, seventeen marine mammal species (twelve cetacean and five pinniped [one otariid and four phocid] species) have the potential to co-occur with SWFSC research activities. Please refer to Table 2. Of the twelve cetacean species that may be present, five are classified as low-frequency cetaceans (*i.e.*, all mysticete species), five are classified as mid-frequency cetaceans (*i.e.*, all delphinid and ziphiid species [excluding the hourglass dolphin] and the sperm whale), and two are classified as high-frequency cetaceans (*i.e.*, the hourglass dolphin and spectacled porpoise).

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

Detailed descriptions of the potential effects of the various elements of the SWFSC's specified activity on marine mammals and their habitat were provided in association with the

2015 SWFSC rulemaking (80 FR 8166; February 15, 2015). Additionally, detailed descriptions of the potential effects of similar specified activities have also been provided in other **Federal Register** notices (*e.g.*, 81 FR 38516; 83 FR 37638; 84 FR 6576), and section 7 of SWFSC's application provides a discussion of the potential effects of their specified activity, which we have reviewed for accuracy and completeness. No significant new information is available, and these discussions provide the necessary adequate and relevant information regarding the potential effects of SWFSC's specified activity on marine mammals and their habitat. Therefore, we refer the reader to these documents rather than repeating the information here. The referenced information includes a summary and discussion of the ways that components of the specified activity (*e.g.*, gear deployment, use of active acoustic sources, visual disturbance) may impact marine mammals and their habitat.

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

With specific reference to Level B harassment that may occur as a result of acoustic exposure, we note that the analytical methods from the original 2015 analysis are retained here. However, the state of science with regard to our understanding of the likely potential effects of

the use of systems like those used by SWFSC has advanced in the preceding five years, as have readily available approaches to estimating the acoustic footprints of such sources, with the result that we view this analysis as highly conservative. Although more recent literature provides documentation of marine mammal responses to the use of these and similar acoustic systems (e.g., Cholewiak *et al.*, 2017; Quick *et al.*, 2017; Varghese *et al.*, 2020), the described responses do not generally comport with the degree of severity that should be associated with Level B harassment, as defined by the MMPA. We retain the 2015 analytical approach for consistency with existing analyses and for purposes of efficiency here, and consider this acceptable because the approach provides a conservative estimate of potential incidents of Level B harassment. In summary, while we authorize the amount of take by Level B harassment indicated in the **Estimated Take** section, and consider these potential takings at face value in our negligible impact analysis, it is uncertain whether use of these acoustic systems are likely to cause take at all, much less at the estimated levels.

The **Estimated Take** section later in this document includes a quantitative analysis of the number of individuals that are expected to be taken by this activity. The **Negligible Impact Analysis and Determinations** section considers the potential effects of the specified activity, the **Estimated Take** section, and the **Mitigation** section, to draw conclusions regarding the likely impacts of these activities on the reproductive success or survivorship of individuals and how those impacts on individuals are likely to impact marine mammal species or stocks.

### **Estimated Take**

This section provides an estimate of the number of incidental takes that may be authorized under the rule, which will inform both NMFS's consideration of whether the number of takes is "small" and the negligible impact determination.

Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines "harassment" as: any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has

the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

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

#### *Estimated Take Due to Gear Interaction*

In order to determine the number of incidental takes requested for authorization, SWFSC retained the approach to estimating their requested take numbers that was developed in support of the 2015 rule. That approach was based on historical incidents of gear interaction and on an assessment of which species of marine mammal that have not historically been taken might have similar risk of interaction to those species that have been taken. In particular, records from the year 2008—which remains the year with the highest number of gear interaction incidents—were used as the basis for generating a precautionary, worst-case assessment of potential takes. Reporting from 2015-19 under the current regulations demonstrates that this approach was indeed a precautionary one, as annual numbers of takes have remained well below those recorded in 2008, and only one additional species that had not historically been taken in SWFSC research gear in 2015 has subsequently been taken (common dolphin; see Table 4). SWFSC has elected to carry forward this precautionary approach to their take authorization request in support of this rulemaking, and we incorporate it into our rulemaking, as described in further detail below.

The approach to estimating the number of potential incidents of take that could occur through gear interaction first requires consideration of SWFSC's record of past such incidents.

We then consider in addition other species that may have similar vulnerabilities to SWFSC trawl and longline gear as those species for which we have historical interaction records. Historical interactions with research gear are described in Tables 4 and 5, and we anticipate that all species that interacted with SWFSC fisheries research gear historically could potentially be taken in the future. Available records are for the years 2006 through present. All historical SWFSC interactions have taken place in the CCE. The locations of incidental take events from 2015-2019 are shown in Figure 6-1 of SWFSC's application.

**Table 4. Historical Interactions with Trawl Gear.**

Gear <sup>1</sup>	Survey	Date	Species	# killed	# released alive	Total
Midwater trawl	Coastal Pelagic Species (CPS)	4/24/2006	Northern fur seal (CA stock)	1	-	1
Midwater trawl	CPS	4/29/2007	Northern fur seal (CA stock)	1	-	1
Midwater trawl <sup>2</sup>	Juvenile Rockfish	5/30/2007	Northern fur seal (eastern Pacific stock)	1	-	1
Midwater trawl	CPS	4/18/2008	California sea lion	1	-	1
Midwater trawl	CPS	4/21/2008	Pacific white-sided dolphin	1	-	1
Midwater trawl	CPS	4/26/2008	Pacific white-sided dolphin	2	-	2
Midwater trawl	CPS	4/27/2008	California sea lion	1	-	1
Midwater trawl	CPS	4/27/2008	Northern fur seal (eastern Pacific stock)	1	-	1
Midwater trawl <sup>2</sup>	Juvenile Rockfish	6/15/2008	California sea lion	1	2	3
Midwater trawl	CPS	7/19/2008	Pacific white-sided dolphin	1	-	1
Midwater trawl	CPS	7/28/2008	California sea lion	1	-	1
Midwater trawl	CPS	7/31/2008	Northern fur seal (CA stock)	1	-	1
Midwater trawl	CPS	8/3/2008	Northern fur seal (CA stock)	1	-	1
Midwater trawl	CPS	8/9/2008	Pacific white-sided dolphin	11	-	11
Midwater trawl	CPS	8/9/2008	Northern right whale dolphin	6	-	6
Midwater trawl	CPS	8/14/2008	California sea lion	9	-	9
Midwater trawl	CPS	5/1/2009	Pacific white-sided dolphin	-	3	3
Midwater trawl <sup>2</sup>	Juvenile Rockfish	5/25/2009	California sea lion	-	1	1
Midwater trawl	CPS	4/18/2010	Pacific white-sided dolphin	-	1	1
Midwater trawl	CPS	4/25/2010	Pacific white-sided dolphin	1	-	1
Midwater trawl <sup>2</sup>	Juvenile Rockfish	9/10/2010	Pacific white-sided dolphin	1	-	1
Midwater trawl	CPS	4/3/2011	Pacific white-sided dolphin	1	-	1
Midwater trawl	Juvenile Salmon	9/9/2011	California sea lion	1	-	1
Midwater trawl	Juvenile Salmon	9/10/2011	Pacific white-sided dolphin	6	-	6
Midwater trawl	CPS	6/29/2012	Pacific white-sided dolphin	-	1	1
Midwater trawl	CPS	8/18/2012	Pacific white-sided dolphin	1	-	1
Midwater trawl	CPS	8/24/2012	Pacific white-sided dolphin	2	-	2
Midwater trawl	CPS	8/1/2013	Pacific white-sided dolphin	1	2	3
Midwater trawl	Juvenile Salmon	9/14/2013	Pacific white-sided dolphin	3	-	3
Midwater trawl <sup>2</sup>	Juvenile Rockfish	6/1/2014	Pacific white-sided dolphin	1	-	1
Surface trawl	Sardine-Hake Acoustic Trawl	8/26/2015	Pacific white-sided dolphin	1	-	1
Surface trawl	Juvenile Salmon	9/14/2015	California sea lion	-	1	1
Midwater trawl <sup>2</sup>	Juvenile Rockfish	5/15/2016	Pacific white-sided dolphin	1	-	1
Surface trawl	CPS	7/17/2016	Pacific white-sided dolphin	7	1	8
Midwater trawl <sup>2</sup>	Juvenile Rockfish	6/14/2018	Pacific white-sided dolphin	1	-	1
Midwater trawl <sup>2</sup>	Juvenile Rockfish	6/21/2018	California sea lion	1	-	1
Midwater trawl	CPS	7/24/2018	Pacific white-sided dolphin	1	-	1
Midwater trawl	CPS	8/27/2018	Pacific white-sided dolphin	1	-	1
Surface trawl	CCE Survey (CCES)	6/22/2019	Pacific white-sided dolphin	2	-	2

Midwater trawl	CCES	8/8/2019	Pacific white-sided dolphin	2	-	2
Midwater trawl	CCES	8/8/2019	Pacific white-sided dolphin	1	-	1
Midwater trawl	CCES	8/26/2019	Common dolphin (long-beaked)	1	-	1
Total individuals captured (total number of interactions given in parentheses)			Northern fur seal (6)	6	-	6
			California sea lion (9)	15	4	19
			Pacific white-sided dolphin (25)	49	8	57
			Northern right whale dolphin (1)	6	-	6
			Common dolphin (1)	1	-	1

<sup>1</sup>All incidents involved use of the NETS Nordic 264 midwater trawl, except as noted below.

<sup>2</sup>These incidents involved use of the modified-Cobb midwater trawl.

**Table 5. Historical Interactions with Longline Gear.**

Gear	Survey	Date	Species	# killed	# released alive	Total
Pelagic longline	Highly Migratory Species (HMS)	9/6/2008	California sea lion	-	1	1
Pelagic longline	HMS	9/15/2008	California sea lion	-	1	1
Pelagic longline	Thresher Shark	9/18/2009	California sea lion	-	1	1
Pelagic longline	HMS	7/27/2010	California sea lion	-	1	1
Pelagic longline	HMS	6/23/2012	California sea lion	-	1	1
Pelagic longline	HMS	7/10/2013	California sea lion	-	1	1
Pelagic longline	HMS	7/2/2014	California sea lion	-	1	1
Pelagic longline	HMS	7/8/2015	California sea lion	1	-	1
Pelagic longline	Thresher Shark	9/20/2015	California sea lion	-	1	1
Total				1	8	9

In order to use these historical interaction records 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 for these fishing gear interactions. The SWFSC has no recorded interactions with any gear other than midwater trawl and pelagic longline gear, and we do not anticipate any future interactions in any other gears historically used by SWFSC, including the bottom trawl gear periodically employed by the SWFSC in the AMLR. However, SWFSC has not historically used purse seine gear, and we do anticipate that the planned future use of purse seine gear in the CCE could present some risk of marine mammal interaction.

During trawl surveys, SWFSC has recorded interactions with northern fur seals (California and eastern Pacific stocks); California sea lions; Pacific white-sided dolphins; northern right whale dolphins; and common dolphins (long-beaked stock). No northern fur seal has been captured since 2008, and northern right whale dolphins have been involved in only one incident, also in 2008. Common dolphins have been involved in only one incident. Therefore,

California sea lions and Pacific white-sided dolphins are the species most likely to interact with SWFSC trawl gear. For longline gear, only California sea lions have been captured.

Take records from 2008 were used as the basis for estimation of potential incidental take in support of the 2015 rule, as this year was the worst on record and therefore was assumed to provide a worst-case basis for predicting potential future take. Take interactions from 2008 remain the historical maximum. Therefore, as noted above, the 2015 analysis is retained here as a potential worst-case scenario for marine mammal take in SWFSC gear over the 5 years considered in this rulemaking. In the 2015 analysis, the annual average over the most recent 5-year period that included 2008 (rounded up to the next whole number) was used to estimate the potential annual take level over the next five years. A five-year time frame provides enough data to adequately capture year-to-year variation in take levels, reflecting environmental conditions that may change over time. In order to incorporate records from the year 2008, we retain 2008-12 as the 5-year period over which we consider interaction records. Those annual averages are 7 Pacific white-sided dolphins, 4 California sea lions, 2 northern right whale dolphins, and 1 northern fur seal, and the prior assumption was that this number could be taken in each of the 5 years (*i.e.*, 35 Pacific white-sided dolphins, 20 California sea lions, 10 northern right whale dolphins, 5 northern fur seals). These take numbers are retained, with the exception of the Pacific white-sided dolphin. Historically, the CPS survey has only surveyed in water depths >50 m and consequently does not sample the nearshore area, potentially under-sampling any nearshore CPS aggregations. The aim of planned collaborative research over the next five years is to quantify this potential sampling bias by using an industry fishing vessel to extend the sampling closer to shore. In order to account for the potential for increased interactions with Pacific white-sided dolphins in nearshore waters, SWFSC added one additional take per year. For the species most commonly taken, the maximum number of individuals taken through any one interaction was 11 Pacific white-sided dolphins and 9 California sea lions. Similarly, the annual average of

California sea lions taken in longline gear from 2008-12 was 1. Therefore, the assumption is that five California sea lions may be taken in hook and line gear over the next five-year period.

In order to evaluate the potential vulnerability of additional species to midwater trawl and pelagic longline gear as part of the take estimation process for the 2015 rule, 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: Category I, frequent incidental M/SI; Category II, occasional incidental M/SI; and Category III, remote likelihood of or no known incidental M/SI.

Information related to incidental M/SI in relevant commercial fisheries is not, however, the sole determinant of whether it may be appropriate to authorize take 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 by the SWFSC 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.

This review led to our inference that common dolphin, Risso's dolphin, Dall's porpoise, Steller sea lion, harbor seal, and northern elephant seal could have risk of capture in midwater trawl gear given the demonstrated risk of capture in commercial fishing gear that is similar to the gear used by SWFSC. In addition, as a result of presumed similarities to Pacific white-sided dolphin or California sea lion or to other species for which there are recorded interactions in similar commercial fishing gear, SWFSC determined that there was risk of capture for striped dolphin, bottlenose dolphin, and harbor porpoise despite a lack of relevant LOF records.

The LOF review similarly led to our inference that *Kogia* spp., bottlenose dolphin, common dolphin, striped dolphin, Risso's dolphin, and short-finned pilot whale could have risk of capture in pelagic longline gear given the demonstrated risk of capture in commercial fishing gear that is similar to the gear used by SWFSC. We note that, due to the expected distribution of longline sampling effort in offshore waters, no take of coastal bottlenose dolphins in longline gear is expected. In addition, as a result of presumed similarities to California sea lion or to other species for which there are recorded interactions in similar commercial fishing gear, SWFSC determined that there was risk of capture for Steller sea lion despite a lack of relevant LOF records.

As noted above, the worst-case single interactions with trawl gear for the two most commonly taken species (Pacific white-sided dolphin and California sea lion) involved 11 and 9 individuals, respectively. For species deemed by SWFSC to have a similar risk profile as these two species, these numbers were taken to represent the potential total take over the five-year period. Use of these numbers is sufficient to appropriately analyze either of two scenarios: (1) more frequent interactions with a lesser number of individuals; or (2) a single, worst-case interaction. For trawl gear, species deemed to have a similar risk profile as the Pacific white-sided dolphin include the Risso's dolphin, bottlenose dolphin, striped dolphin, and common dolphins. (Note that the 11 takes for bottlenose dolphin in trawl gear are split across stocks based on the spatial distribution of SWFSC trawl survey effort; 8 takes are assumed for the offshore stock and 3 takes for the coastal stock.) Species deemed to have a similar risk profile as the California sea lion include the Steller sea lion and harbor seal. The remainder of species determined to be at risk of potential interaction with trawl gear are expected to have a relatively lower risk profile and, therefore, the expected potential take is one per year, or five over the five-year period. Note that a common dolphin has subsequently been captured in SWFSC trawl gear. However, we retain the original approach, which yields a five-year take estimate of 11 animals,

versus the approach for historically captured species, which would produce a rounded annual average of 1 and, therefore, a 5-year estimate of 5.

For hook and line gear, no species is expected to have a similar risk profile as the California sea lion and, therefore, the expected potential take for all other cetacean species is two over the five-year period, with the exception of bottlenose dolphin, for which only one take over five years was requested. Although take due to use of deep-set buoy gear is generally considered unlikely, SWFSC increased their take request for most cetacean species over the 2015 request (from 1 to 2 over five years) due to the potential that their use of this gear in cetacean habitat could lead to an increased risk of interaction compared with only their use of typical pelagic longline gear.

Regarding potential interactions with purse seine gear, we adopt the analysis that was developed in support of a similar incidental take rulemaking requested by NMFS' Northwest Fisheries Science Center (NWFSC) (83 FR 36370; July 27, 2018). Unlike SWFSC, NWFSC has historically used purse seine gear and similarly operates in the CCE. NWFSC has not had any historical interactions with purse seine gear. Therefore, we followed a similar approach as described above, in which the LOF was consulted and assumptions regarding species that may be vulnerable to interactions with the gear developed. Species with presumed risk of interaction with purse seine gear, based on LOF records, include common dolphins, harbor seal, and California sea lion. In addition, despite a lack of relevant LOF records, NWFSC deemed the following species as having risk of potential interaction with purse seine gear: Dall's porpoise, Pacific white-sided dolphin, Risso's dolphin, northern right whale dolphin, Steller sea lion, and harbor porpoise. SWFSC reviewed the assumptions made by NWFSC and has concurred and adopted the same assumptions in support of their requested take authorization. SWFSC additionally reviews records of marine mammal interactions with commercial purse seines in section 6.2.2 of their application. For most species, the risk of interaction is expected to be relatively low and, therefore, SWFSC requested authorization of one take per potentially affected

stock over the five-year period. However, based on the greater number of recorded interactions with purse seine gear for California sea lions and harbor seals, SWFSC requested 5 takes for each species over the five-year period.

We have reviewed subsequent LOFs and determined that there are no new records that would change the assumptions regarding potential vulnerability to gear interaction described above. For a summation of the LOF records discussed above for trawl and longline gear, please see Table 13 (80 FR 8166) and Table 6 (81 FR 38516). The final 2020 LOF was published on April 16, 2020 (85 FR 21079), and more information about the LOF is available online at: [www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-list-fisheries](http://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-list-fisheries).

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 take in trawl gear for one unidentified pinniped and one unidentified small cetacean, and additionally one take of unidentified pinnipeds in both purse seine and longline gear, over the course of the five-year period of the regulations.

Table 6 summarizes the total M/SI take authorization due to gear interaction in the CCE.

**Table 6. Total Estimated Take Due to Gear Interaction in the CCE, 2020-25.<sup>1</sup>**

Species	Estimated 5-year total, trawl	Estimated 5-year total, hook and line	Estimated 5-year total, purse seine	Total
<i>Kogia</i> spp. <sup>2</sup>	-	2	-	2
Bottlenose dolphin (CA/OR/WA offshore) <sup>3</sup>	8	1	-	9
Bottlenose dolphin (CA coastal) <sup>3</sup>	3	-	-	3
Striped dolphin	11	2	1	14
Common dolphin (short-beaked)	11	2	1	14
Common dolphin (long-beaked)	11	2	1	14
Pacific white-sided dolphin	40	-	1	41
Northern right whale dolphin	10	-	1	11
Risso's dolphin	11	2	1	14
Short-finned pilot whale	-	2	-	2
Harbor porpoise <sup>4</sup>	5	-	1	6
Dall's porpoise	5	-	1	6
Northern fur seal <sup>5</sup>	5	-	-	5
California sea lion	20	5	5	30

Steller sea lion	9	1	-	10
Harbor seal <sup>4</sup>	9	-	5	14
Northern elephant seal	5	-	-	5
Unidentified pinniped	1	1	1	3
Unidentified cetacean	1	-	-	1

<sup>1</sup>Please see preceding text for derivation of take estimates.

<sup>2</sup>We expect that *Kogia* spp. taken over the five-year timespan could be either a pygmy or dwarf sperm whale.

<sup>3</sup>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 the requested take of a bottlenose dolphin in longline gear would be from the offshore stock due to the typical location of SWFSC longline sampling.

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

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

*Whales* – For large whales (baleen whales and sperm whales), beaked whales, and killer whales, observed M/SI is extremely rare for trawl gear and, for most of these species, only slightly more common in longline gear. Although whale species could become captured or entangled in SWFSC gear, the probability of interaction is extremely low considering the lower level of effort relative to that of commercial fisheries. We believe it extremely unlikely that any large whale, beaked whale, or killer whale would be captured or entangled in SWFSC research gear.

#### *Estimated Take Due to Acoustic Harassment*

As described previously, we believe it unlikely that SWFSC use of active acoustic sources is realistically likely to cause Level B harassment of marine mammals. However, per SWFSC request, we conservatively assume that, at worst, Level B harassment may result from exposure to noise from these sources, and we carry forward the analytical approach developed in support of the 2015 rule. At that time, in order to quantify the potential for Level B harassment to occur, NMFS developed an analytical framework considering characteristics of the active acoustic systems, their expected patterns of use, and characteristics of the marine mammal species that may interact with them. The framework incorporated a number of deliberately precautionary, simplifying assumptions, and the resulting exposure estimates, which are presumed here to equate to take by Level B harassment (as defined by the MMPA), may be seen

as an overestimate of the potential for such effects to occur as a result of the operation of these systems.

Regarding the potential for Level A harassment in the form of permanent threshold shift to occur, the very short duration sounds emitted by these sources reduces the likely level of accumulated energy an animal is exposed to. An individual would have to remain exceptionally close to a sound source for unrealistic lengths of time, suggesting the likelihood of injury occurring is exceedingly small. Potential Level A harassment is therefore not considered further in this analysis.

The assessment paradigm for active acoustic sources used in SWFSC fisheries research is relatively straightforward and has a number of key simplifying assumptions. Sound produced by these sources is intermittent and, therefore, evaluated against the 160 dB rms criterion for Level B harassment by behavioral disturbance. Estimating the number of exposures at the specified received level requires several determinations:

- (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.

We provide a summary of the analytical approach here, but invite the reader interested in additional detail to review the detailed description provided in support of the 2015 rule (80 FR 8166) as well as the detailed description provided in section 6.4.2 of SWFSC's application.

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 events in which sound levels exceed the relevant threshold. The number of potentially harassing exposures is ultimately estimated as the product of the volume of water ensonified at 160 dB rms or higher (to a maximum depth of 500 m) 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. Because depths range dramatically along the margin of the continental slope that define the outer edge of the survey areas, but deeper surveyed depths rarely range over 500 m in practice, the depth range for determining volumes was set at 500 m for deep diving species.

An initial characterization of the general source parameters for the primary active acoustic sources operated by the SWFSC was conducted, enabling a full assessment of all sound sources used by the SWFSC (see Table 2 of the notice of proposed rulemaking). This auditing of the active acoustic sources also enabled a determination of the predominant sources that, when operated, would have sound footprints exceeding those from any other simultaneously used sources. These sources were effectively those used directly in acoustic propagation modeling to estimate the zones within which the 160 dB rms received level would occur.

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

sources were used in the calculation of effective line-kilometers and area of exposure for each source in each survey.

Three predominant sources were identified as having the largest potential impact zones during operations, based on their relatively lower output frequency, higher output power, and their operational pattern of use. These sources are the SX90, EK60/EK80, and ME70. Estimated effective cross-sectional areas of exposure were estimated for each of these sources. In determining the effective line-kilometers for each of these predominant sources, the operational patterns of use relative to one another were further applied to determine which source was the predominant one operating at any point in time for each survey. When multiple sound sources are used simultaneously, the one with the largest potential impact zone in each relevant depth strata is considered for use in estimating exposures.

The cross-sectional area of water ensonified at or above the 160 dB rms threshold was calculated using a simple model of sound propagation loss, which accounts for the loss of sound energy over increasing range. We used a spherical spreading model (where propagation loss =  $20 * \log [\text{range}]$ ; such that there would be a 6-dB reduction in sound level for each doubling of distance from the source), a reasonable approximation over the relatively short ranges involved. Spherical spreading is a reasonable assumption even in relatively shallow waters since, taking into account the beam angle, the reflected energy from the seafloor will be much weaker than the direct source and the volume influenced by the reflected acoustic energy would be much smaller over the relatively short ranges involved. We also accounted for the frequency-dependent absorption coefficient and beam pattern of these sound sources, which is generally highly directional. The lowest frequency was used for systems that are operated over a range of frequencies. The vertical extent of this area is calculated for two depth strata. These results were applied differentially based on the typical vertical stratification of marine mammals.

Following the determination of effective sound exposure area for transmissions considered in two dimensions, the next step was to determine the effective volume of water

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

The best available information regarding marine mammal occurrence in the CCE was used to develop volumetric density values for use in calculating estimated exposures. This information was determined through review of available information, as indicated through NOAA's CetMap catalogue, available online at: [cetsound.noaa.gov/cda-index](https://cetsound.noaa.gov/cda-index). More detail, and the density values used, are provided in section 3 and Appendix A of the SWFSC application. For marine mammals occurring in the AMLR, no new information is available, and the density values used in the 2015 rule are carried forward.

Estimates of potential incidents of Level B harassment (*i.e.*, potential exposure to levels of sound at or exceeding the 160 dB rms threshold) are then calculated by using (1) the combined results from output characteristics of each source and identification of the predominant sources in terms of acoustic output; (2) their relative annual usage patterns for each operational area; (3) a source-specific determination made of the area of water associated with received sounds at the extent of a depth boundary; and (4) determination of a biologically-relevant volumetric density of marine mammal species in each area. Estimates of Level B harassment by

acoustic sources are the product of the volume of water ensonified at 160 dB rms or higher for the predominant sound source for each relevant survey and the volumetric density of animals for each species. Please see Tables 6-12 and 6-13 in SWFSC’s application for relevant information. Take estimates are summarized in Table 9 below.

*Estimated Take Due to Physical Disturbance*

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 and based on the method developed by Mortenson (1996). We consider responses corresponding to Levels 2-3 to constitute Level B harassment.

**Table 7. Pinniped Response to Disturbance.**

Level	Type of response	Definition
1	Alert	Seal head orientation or brief movement in response to disturbance, which may include turning head towards the disturbance, craning head and neck while holding the body rigid in a u-shaped position, changing from a lying to a sitting position, or brief movement of less than twice the animal’s body length.
2	Movement	Movements in response to the source of disturbance, ranging from short withdrawals at least twice the animal’s body length to longer retreats over the beach, or if already moving a change of direction of greater than 90 degrees.
3	Flush	All retreats (flushes) to the water.

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 (see Table 6-2 of SWFSC’s application). 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 Level B Harassment of Pinnipeds Associated with AMLR Vessel Transects.**

Species	Estimated Annual Level B harassment	5-Year Total
Antarctic fur seal	417	2,085
Southern elephant seal	1 <sup>1</sup>	5
Weddell seal	225	1,125
Crabeater seal	2,704	13,520
Leopard seal	68	340

<sup>1</sup>Based on the recommendation of the Marine Mammal Commission (see **Comments and Responses**), this has been increased to 5.

## Mitigation

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 taking for certain subsistence uses (“least practicable adverse impact”). NMFS does not have a regulatory definition for “least practicable adverse impact.” However, NMFS’ implementing regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting such activity or other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

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

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

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

The following suite of mitigation measures and procedures, *i.e.*, measures taken to monitor, avoid, or minimize the encounter and potential take of marine mammals, will be employed by the SWFSC during research cruises and activities. For a summary of measures proposed by SWFSC, please see Table 11-1 of the application. These procedures are the same whether the survey is conducted by SWFSC or is a SWFSC-supported survey, which may be conducted onboard a variety of vessels, *e.g.*, on board a NOAA vessel or charter vessel. The procedures described are based on protocols used during previous research surveys and/or best practices developed for commercial fisheries using similar gear. The SWFSC conducts a large variety of research operations, but only activities using trawl, hook and line, and purse seine gears are expected to present a reasonable likelihood of resulting in incidental take of marine mammals. SWFSC's past survey operations have resulted in marine mammal interactions. These protocols are designed to minimize to the extent practicable the interactions that do happen while providing credible, documented, and safe encounters with observed or captured animals. Mitigation procedures will be focused on those situations where mammals, in the best professional judgement of the vessel operator and Chief Scientist (CS), pose a risk of incidental

take. In many instances, the SWFSC will use streamlined protocols and training for protected species developed in support of the 2015 rule and refined during implementation of the rule.

The SWFSC has invested significant time and effort in identifying technologies, practices, and equipment to minimize the impact of the proposed activities on marine mammal species and stocks and their habitat. These efforts have resulted in the consideration of many potential mitigation measures, including those the SWFSC has determined to be feasible and has implemented for years as a standard part of sampling protocols. These measures include the move-on rule mitigation protocol (also referred to in the preamble as the move-on rule), protected species visual watches, and use of acoustic pingers and a marine mammal exclusion device (MMED) on surface trawls using the Nordic 264 trawl net.

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

may be limited to those animals that directly interact with or are near to the vessel or gear. NOAA vessels, chartered vessels, and affiliated vessels or studies are required to monitor interactions with marine mammals but are limited to reporting direct interactions, dead animals, or entangled whales.

### *General Measures*

*Coordination and Communication* – When SWFSC survey effort is conducted aboard NOAA-owned vessels, there are both vessel officers and crew and a scientific party. Vessel officers and crew are not composed of SWFSC staff but are employees of NOAA’s Office of Marine and Aviation Operations (OMAO), which is responsible for the management and operation of NOAA fleet ships and aircraft and is composed of uniformed officers of the NOAA Commissioned Corps as well as civilians. The ship’s officers and crew provide mission support and assistance to embarked scientists, and the vessel’s Commanding Officer (CO) has ultimate responsibility for vessel and passenger safety and, therefore, decision authority. When SWFSC survey effort is conducted aboard cooperative platforms (*i.e.*, non-NOAA vessels), ultimate responsibility and decision authority again rests with non-SWFSC personnel (*i.e.*, vessel’s master or captain). Decision authority includes the implementation of mitigation measures (*e.g.*, whether to stop deployment of trawl gear upon observation of marine mammals). The scientific party involved in any SWFSC survey effort is composed, in part or whole, of SWFSC staff and is led by a CS. Therefore, because the SWFSC—not OMAO or any other entity that may have authority over survey platforms used by SWFSC—is the applicant to whom any incidental take authorization issued under the authority of these regulations will be issued, we require that the SWFSC take all necessary measures to coordinate and communicate in advance of each specific survey with OMAO, or other relevant parties, to ensure that all mitigation measures and monitoring requirements described herein, as well as the specific manner of implementation and relevant event-contingent decision-making processes, are clearly understood and agreed-upon. This may involve description of all required measures when submitting cruise instructions to

OMAO or when completing contracts with external entities. SWFSC will coordinate and conduct briefings at the outset of each survey and as necessary between ship's crew (CO/master or designee(s), as appropriate) and scientific party in order to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures. The CS will be responsible for coordination with the Officer on Deck (OOD; or equivalent on non-NOAA platforms) to ensure that requirements, procedures, and decision-making processes are understood and properly implemented.

*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 or designated marine mammal observer standing watch sights marine mammals that may intersect with the vessel course that individual will immediately communicate the presence of marine mammals to the bridge for appropriate course alteration or speed reduction, as possible, to avoid incidental collisions.

*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. 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* – Handling procedures are those taken to return a live animal to the sea or process a dead animal. The SWFSC will continue to implement handling protocols developed in support of the 2015 rule and refined during implementation of the rule, to minimize potential harm to marine mammals that are incidentally taken during the course of fisheries research activities. These procedures are expected to increase post-release survival and, in

general, following a “common sense” approach to handling captured or entangled marine mammals will present the best chance of minimizing injury to the animal and of decreasing risks to scientists and vessel crew. Handling or disentangling marine mammals carries inherent safety risks, and using best professional judgment and ensuring human safety is paramount.

Captured live or injured marine mammals are released from research gear and returned to the water as soon as possible with no gear or as little gear remaining on the animal as possible. Animals are released without removing them from the water if possible and data collection is conducted in such a manner as not to delay release of the animal(s) or endanger the crew. SWFSC staff are instructed on how to identify different species; handle and bring marine mammals aboard a vessel; assess the level of consciousness; remove fishing gear; and return marine mammals to water. For further information regarding proposed handling procedures, please see section 11.5 of SWFSC’s application.

#### *Trawl Survey Visual Monitoring and Operational Protocols*

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

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

Marine mammal watches will be initiated 15 minutes prior to arrival on station (or for the amount of time to travel between stations if less than 15 minutes) to determine if marine

mammals are near the planned trawl set location. Either dedicated observers, the OOD, CS, and/or crew standing watch will visually scan for marine mammals during all daytime operations. Marine mammal watches will be conducted using any binocular or monocular sighting instrument, with a means to estimate distance to infringing protected species during daytime, and the best available means of observation during nighttime observations. This typically occurs during transit leading up to arrival at the sampling station because of standard protocol of immediate deployment of trawl gear upon arriving at station (intended to reduce the risk of attracting curious marine mammals). However, in some cases it may be necessary to conduct a plankton tow prior to deploying trawl gear. In these cases, the visual watch will continue until trawl gear is ready to be deployed.

Lookouts immediately alert the OOD and CS as to their best estimate of the species and number of animals observed and any observed animal's distance, bearing, and direction of travel relative to the ship's position. If any marine mammals are sighted around the vessel before setting gear, the vessel may be moved away from the animals to a different section of the sampling area if the animals appear to be at risk of interaction with the gear. This is what is referred to as the "move-on" rule.

If marine mammals are sighted within 1 nmi of the planned set location in the 15 minutes before setting the gear, the vessel will transit to a different section of the sampling area to maintain a minimum set distance of 1 nmi. An exception to this protocol is for baleen whales; baleen whales are commonly observed within the 1 nmi distance from SWFSC trawl sampling locations but have never been observed to be attracted to SWFSC research activity and have never interacted with SWFSC research gear. Decision regarding the potential need to move-on in response to baleen whale presence will be made on the basis of professional judgment based on the specific circumstances. If after moving on, protected species remain within the 1 nmi exclusion zone, the CS or watch leader may decide to move again or to skip the station. However, SWFSC acknowledges that 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 nmi. The CS or watch leader will determine the best strategy to avoid potential takes of marine mammals based on the species encountered, their numbers and behavior, position and vector relative to the vessel, and other factors. For instance, a marine mammal transiting through the area off in the distance might only require a short move from the designated station while a pod of dolphins gathered around the vessel may require a longer move from the station or possibly cancellation if they follow the vessel. In any case, no gear will be deployed if marine mammals other than baleen whales have been sighted within 1 nmi of the planned set location during the 15-minute watch period.

In many cases, trawl operations will be the first activity undertaken upon arrival at a new station, in order to reduce the opportunity to attract marine mammals to the vessel. However, in some cases it will be necessary to conduct plankton tows prior to deploying trawl gear in order to avoid trawling through extremely high densities of jellies and similar taxa that are numerous enough to severely damage trawl gear.

Once the trawl net is in the water, the OOD, CS, and/or crew standing watch will continue to monitor the waters around the vessel and 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 incidental take 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 their past experience operating gears around marine mammals and SWFSC training sessions that 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 these events). These judgments take into consideration the species, numbers, and behavior of the animals, the status of the trawl net operation (net opening, depth, and distance from the stern), the time it would take to retrieve the net, and safety considerations for changing speed or course.

The appropriate course of action to minimize the risk of incidental take is determined by the professional judgment of the OOD, vessel operator, and the CS based on all situation variables, even if the choices compromise the value of the data collected at the station. We recognize that it is not possible to dictate in advance the exact course of action that the OOD or CS should take in any given event involving the presence of marine mammals in proximity to an ongoing trawl tow, given the sheer number of potential variables, combinations of variables that may determine the appropriate course of action, and the need to prioritize human safety in the operation of fishing gear at sea. Nevertheless, 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 mammals have not been sighted within 1 nmi of the planned set location. This decision is at the discretion of the officer on watch and is dependent on the situation.

Care will be taken when emptying the trawl to avoid damage to any 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, or any other protected species, are present.

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 45 minutes at the target depth have been implemented, excluding deployment and retrieval time (which may require an additional 30 minutes depending on depth), to reduce the likelihood of attracting and incidentally taking marine mammals and other protected species. These short tow durations decrease the opportunity for curious marine mammals to find the

vessel and investigate. Trawl tow distances are less than 3 nmi, which should reduce the likelihood of attracting and incidentally taking marine mammals. Typical tow distances are 1-2 nmi, depending on the survey and trawl speed. In addition, 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* – The NETS Nordic 264 trawl gear will be fitted with MMEDs to allow marine mammals caught during trawling operations an opportunity to escape. These devices enable target species to pass through a grid or mesh barrier and into the codend while preventing the passage of marine mammals, which are ejected out through an escape opening or swim back out of the mouth of the net. Potential for interactions with protected species, such as marine mammals, is often greatest during the deployment and retrieval of the trawl, when the net is at or near the surface of the water. During retrieval of the net, protected species may become entangled in the net while attempting to feed from the codend as it floats near the surface of the water. Considerable effort has been given to developing MMEDs that allow marine mammals to escape from the net while allowing retention of the target species (*e.g.*, Dotson *et al.*, 2010). MMEDs generally consist of a large aluminum grate positioned in the intermediate portion of the net forward of the codend and below an “escape panel” constructed into the upper net panel above the grate (Figure A-1 of SWFSC’s application). The angled aluminum grate is intended to guide marine mammals through the escape panel and prevent them from being caught in the codend (Dotson *et al.*, 2010). MMEDs are currently deployed on all surveys using Nordic 264 nets.

*Acoustic Deterrent Devices* – Pingers will be deployed during all trawl operations and on all types of trawl nets. Two to four pingers will be placed along the footrope and/or headrope to discourage marine mammal interactions.

Acoustic pingers are underwater sound emitting devices that are designed to decrease the probability of entanglement or unintended capture of marine mammals (see Appendix B of the

SWFSC application). Acoustic pingers have been shown to effectively deter several species of small cetaceans from becoming entangled in gillnets and driftnets (for detailed discussion, please see 80 FR 8166).

The CPS Survey uses the Netguard 70 kHz dolphin pinger manufactured by Future Oceans and the Rockfish Recruitment and Ecosystem Assessment Surveys use the DDD-03H pinger manufactured by STM Products. Pingers remain operational at depths between 10 m and 200 m. Tones range from 100 microseconds to seconds in duration, with variable frequency of 5-500 kHz and maximum sound pressure level of 176 dB rms re 1  $\mu$ Pa at 1 m at 30-80 kHz.

If one assumes that use of a pinger is effective in deterring marine mammals from interacting with fishing gear, one must therefore assume that receipt of the acoustic signal has a disturbance effect on those marine mammals (*i.e.*, potential Level B harassment). However, Level B harassment that may be incurred as a result of SWFSC use of pingers does not constitute take that must be authorized under the MMPA. The MMPA prohibits the taking of marine mammals by U.S. citizens or within the U.S. EEZ unless such taking is appropriately permitted or authorized. However, the MMPA provides several narrowly defined exemptions from this requirement (*e.g.*, for Alaskan natives; for defense of self or others; for Good Samaritans (16 U.S.C. 1371(b)-(d))). Section 109(h) of the MMPA (16 U.S.C. 1379(h)) allows for the taking of marine mammals in a humane manner by Federal, state, or local government officials or employees in the course of their official duties if the taking is necessary for the protection or welfare of the mammal, the protection of the public health and welfare, or the non-lethal removal of nuisance animals. SWFSC use of pingers as a deterrent device, which may cause Level B harassment of marine mammals, is intended solely for the avoidance of potential marine mammal interactions with SWFSC research gear (*i.e.*, avoidance of Level A harassment, serious injury, or mortality). Therefore, use of such deterrent devices, and the taking that may result, is for the protection and welfare of the mammal and is covered explicitly under MMPA section

109(h)(1)(A). Potential taking of marine mammals resulting from SWFSC use of pingers is not discussed further in this document.

*Longline Survey Visual Monitoring and Operational Protocols*

Visual monitoring requirements for all longline surveys are similar to the general protocols described above for trawl surveys. Please see that section for full details of the visual monitoring protocol and the move-on rule mitigation protocol. In summary, requirements for longline surveys are to: (1) conduct visual monitoring prior to arrival on station; (2) implement the move-on rule if marine mammals are observed within the area around the vessel and may be at risk of interacting with the vessel or gear; (3) deploy gear as soon as possible upon arrival on station (depending on presence of marine mammals); and (4) maintain visual monitoring effort throughout deployment and retrieval of the longline gear. As was described for trawl gear, the OOD, CS, or 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 area. 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.

An exception is when California sea lions are sighted during the watch period prior to setting longline gear. For this species only, longline gear may be set if a group of 5 or fewer animals is sighted within 1 nmi of the planned set location; when groups of more than 5 sea lions are sighted within 1 nmi of the sampling station, deployment of gear would be suspended. This exception has been defined considering the rarity of past interactions between this gear and California sea lions and in order to make this mitigation measure practicable to implement. Without it, given the density of California sea lions in the areas where longline surveys are

conducted, the SWFSC believes implementing the move-on rule for a single animal would preclude sampling in some areas and introduce significant bias into survey results. Groups of five California sea lions or greater is believed to represent a trigger for the move-on rule that would allow sampling in areas where target species can be caught without increasing the number of interactions between marine mammals and research longline gear. This measure was implemented under the 2015 rule, and no increase in sea lion take was observed, nor were multiple sea lions captured during any set. SWFSC is required to report occasions when the move-on rule is waived based on this exception.

As for trawl surveys, some standard survey protocols are expected to minimize the potential for marine mammal interactions. SWFSC longline sets are conducted with drifting pelagic or anchored gear marked at both ends with buoys. Typical soak times are 2-4 hours, but may be as long as 8 hours when targeting swordfish (measured from the time the last hook is in the water to when the first hook is brought out of the water).

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. In the experience of SWFSC, this practice increases survey efficiency and has not resulted in interactions with marine mammals. Scientist observations indicate pinnipeds do not gather immediately aft of the survey vessel as a result of discarding spent bait. However, if protected species interactions with longline gear increase, or if SWFSC staff observe that this practice is contributing to protected species interactions, the SWFSC will revisit this practice and consider the need to retain spent bait until no gear remains in the water.

#### *Purse Seine Survey Visual Monitoring and Operational Protocols*

Visual monitoring and operational protocols for purse seine surveys are similar to those described previously for trawl surveys, with a focus on visual observation in the survey area and avoidance of marine mammals that may be at risk of interaction with survey vessels or gear. The crew will keep watch for marine mammals before and during a set. If a bird or marine mammal

observer is on board, the observer(s) inform the CS and captain of any marine mammals detected at or near a sampling station. Observations focus on avoidance of cetaceans (*e.g.*, dolphins, and porpoises) and aggregations of pinnipeds.

If any killer whales, dolphins, or porpoises are observed within approximately 500 m of the purse seine survey location, the set will be delayed. If any dolphins or porpoises are observed in the net, the net will be immediately opened to let the animals go. Pinnipeds may be attracted to fish caught in purse seine gear but are known to jump in and out of the net without entanglement. If pinnipeds are in the immediate area where the net is to be set, the set is delayed until the animals move out of the area or the station is abandoned. However, if fewer than five pinnipeds are seen in the vicinity but do not appear to be in the direct way of the setting operation, the net may be set. SWFSC is required to report occasions when the move-on rule is waived based on this exception.

SWFSC also uses unmanned aerial systems (UAS) to conduct research. For pinnipeds, UAS flights will be at 100–200 ft depending on species (*i.e.*, 100 ft for elephant seals and 200 ft for other species); in mixed aggregations, the most conservative altitude is used. UASs will not be flown directly over pinniped haulouts.

We have carefully evaluated the SWFSC's planned mitigation measures and considered a range of other measures in the context of ensuring that we prescribed the means of effecting the least practicable adverse impact on the affected marine mammal species and stocks and their habitat. Based on our evaluation of these measures, 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, and on the availability of such species or stock for subsistence uses.

### **Monitoring and Reporting**

In order to issue an LOA 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 the authorized

taking. NMFS's MMPA implementing regulations further describe the information that an applicant should provide when requesting an authorization (50 CFR 216.104(a)(13)), including the means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and the level of taking or impacts on populations of marine mammals.

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

- Occurrence of significant interactions with marine mammal species in action area (*e.g.*, animals that came close to the vessel, contacted the gear, or are otherwise rare or displaying unusual behavior);
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) action or environment (*e.g.*, source characterization, propagation, ambient noise); (2) affected species (*e.g.*, life history, dive patterns); (3) co-occurrence of marine mammal species with the action; or (4) biological or behavioral context of exposure (*e.g.*, age, calving or feeding areas);
- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors;
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks;
- Effects on marine mammal habitat (*e.g.*, marine mammal prey species, acoustic habitat, or important physical components of marine mammal habitat); and
- Mitigation and monitoring effectiveness.

SWFSC plans to continue its systematic training, operations, data collection, animal handling and sampling protocols, etc., as refined through implementation of the 2015 rule, 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 we plan to continue the monitoring requirements described below.

### *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 some period prior to deployment of most research gear; (2) throughout deployment and active fishing of all research gears; (3) for some period prior to retrieval of longline gear; and (4) throughout retrieval of all research gear. This visual monitoring is performed by trained SWFSC personnel or other trained crew 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.

SWFSC will also monitor disturbance of hauled-out pinnipeds resulting from the presence of researchers in the Antarctic, 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.

### *Training*

SWFSC anticipates that additional information on practices to avoid marine mammal interactions can be gleaned from training sessions and the continuation of systematic data

collection standards. The SWFSC will conduct annual trainings for all chief scientists and other personnel who may be responsible for conducting marine mammal visual observations or handling incidentally captured marine mammals 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. 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. Training typically includes three primary elements: (1) an overview of the purpose and need for the authorization, including mandatory mitigation measures by gear and the purpose for each, and species that SWFSC is authorized to incidentally take; (2) detailed descriptions of reporting, data collection, and sampling protocols; and (3) discussion of best professional judgment (which is recognized as an integral component of mitigation implementation; see **Mitigation**).

The second topic includes instruction on how to complete 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 identification and biological sampling.

The third topic includes use of professional judgment 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.

To reduce marine mammal takes over time, the SWFSC maximizes efficient use of charter and NOAA ship time, and engages in operational planning with the NMFS Northwest and Pacific Islands Fisheries Science Centers to delineate respective research responsibilities and to reduce duplication of effort among the Centers.

#### *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 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 are 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 their own standardized forms. To aid in serious injury determinations and comply with the current NMFS Serious Injury Guidelines (NMFS, 2012a, 2012b), researchers will also answer a series of supplemental questions on the details of marine mammal interactions. Finally, for any marine mammals that are killed during fisheries research activities, scientists will collect data and samples as appropriate.

#### *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. 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 predominant acoustic systems were used (see “Estimated Take by Acoustic Harassment” for further discussion), specific to each region; (2) summary information regarding use of all hook and line, purse seine, and trawl gear, including number of sets, tows, etc., specific to each research area 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) information related to occasions when the move-on rule was waived based on occurrence of groups of California sea lions; (5) summary information related to any on-ice disturbance of pinnipeds, including raw sightings data and the event-specific total counts of animals present, counts of reactions according to a three-point scale of response severity and numbers of takes (differentiated by species and age class), the distance at which a pinniped is disturbed and the closest point of approach for each disturbance event; and (6) 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. The period of reporting will be annually, 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 not only provide 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 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.

### **Negligible Impact Analysis and Determinations**

*Introduction* – NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be “taken” by mortality,

serious injury, and Level A or Level B harassment, we consider other factors, such as the likely nature of any behavioral responses (*e.g.*, intensity, duration), the context of any such responses (*e.g.*, critical reproductive time or location, migration), as well as effects on habitat, and the likely effectiveness of mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS's implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the baseline (*e.g.*, as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, and specific consideration of take by M/SI previously authorized for other NMFS research activities).

We note here that the takes from potential gear interactions enumerated below could result in non-serious injury, but their worst potential outcome (mortality) is analyzed for the purposes of the negligible impact determination. We discuss here the connection, and differences, between the legal mechanisms for authorizing incidental take under section 101(a)(5) for activities such as SWFSC's research activities, and for authorizing incidental take from commercial fisheries. In 1988, Congress amended the MMPA's provisions for addressing incidental take of marine mammals in commercial fishing operations. Congress directed NMFS to develop and recommend a new long-term regime to govern such incidental taking (see MMC, 1994). The need to develop a system suited to the unique circumstances of commercial fishing operations led NMFS to suggest a new conceptual means and associated regulatory framework. That concept, PBR, and a system for developing plans containing regulatory and voluntary measures to reduce incidental take for fisheries that exceed PBR were incorporated as sections 117 and 118 in the 1994 amendments to the MMPA.

PBR is defined in section 3 of 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 (OSP) and,

although not controlling, can be one measure considered among other factors when evaluating the effects of M/SI on a marine mammal species or stock during the section 101(a)(5)(A) process. OSP is defined in section 3 of the MMPA (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. Through section 2, an overarching goal of the statute is to ensure that each species or stock of marine mammal is maintained at or returned to its OSP.

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

Congress called for PBR to be applied within the management framework for commercial fishing incidental take under section 118 of the MMPA. As a result, PBR cannot be applied appropriately outside of the section 118 regulatory framework without consideration of how it applies within the section 118 framework, as well as how the other statutory management frameworks in the MMPA differ from the framework in section 118. PBR was not designed and is not used as an absolute threshold limiting commercial fisheries. Rather, it serves as a means to evaluate the relative impacts of those activities on marine mammal stocks. Even where

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

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

118. In fact, in 1994 Congress also amended section 101(a)(5)(E) (a separate provision governing commercial fishing incidental take for species listed under the Endangered Species Act) to add compliance with the new section 118 but retained the standard of the negligible impact finding under section 101(a)(5)(A) (and section 101(a)(5)(D)), showing that Congress understood that the determination of negligible impact and application of PBR may share certain features but are, in fact, different.

Since the introduction of PBR in 1994, NMFS had used the concept almost entirely within the context of implementing sections 117 and 118 and other commercial fisheries management-related provisions of the MMPA. Prior to the Court's ruling in *Conservation Council for Hawaii v. National Marine Fisheries Service*, 97 F. Supp. 3d 1210 (D. Haw. 2015) and consideration of PBR in a series of section 101(a)(5) rulemakings, there were a few examples where PBR had informed agency deliberations under other MMPA sections and programs, such as playing a role in the issuance of a few scientific research permits and subsistence takings. But as the Court found when reviewing examples of past PBR consideration in *Georgia Aquarium v. Pritzker*, 135 F. Supp. 3d 1280 (N.D. Ga. 2015), where NMFS had considered PBR outside the commercial fisheries context, "it has treated PBR as only one 'quantitative tool' and [has not used it] as the sole basis for its impact analyses." Further, the agency's thoughts regarding the appropriate role of PBR in relation to MMPA programs outside the commercial fishing context have evolved since the agency's early application of PBR to section 101(a)(5) decisions. Specifically, NMFS' denial of a request for incidental take authorization for the U.S. Coast Guard in 1996 seemingly was based on the potential for lethal take in relation to PBR and did not appear to consider other factors that might also have informed the potential for ship strike in relation to negligible impact (61 FR 54157; October 17, 1996).

The MMPA requires that PBR be estimated in SARs and that it be used in applications related to the management of take incidental to commercial fisheries (*i.e.*, the take reduction

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

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

from other sources already exceeds PBR, then residual PBR is a negative number and we consider the M/SI from the activities being evaluated as described further below.

When ongoing total anthropogenic mortality from the applicant's specified activities does not exceed PBR and residual PBR is a positive number, as a simplifying analytical tool we first consider whether the specified activities could cause incidental M/SI that is less than 10 percent of residual PBR (the "insignificance threshold," see below). If so, we consider M/SI from the specified activities to represent an insignificant incremental increase in ongoing anthropogenic M/SI for the marine mammal stock in question that alone (*i.e.*, in the absence of any other take) will not adversely affect annual rates of recruitment and survival. As such, this amount of M/SI would not be expected to affect rates of recruitment or survival in a manner resulting in more than a negligible impact on the affected stock unless there are other factors that could affect reproduction or survival, such as Level A and/or Level B harassment, or other considerations such as information that illustrates uncertainty involved in the calculation of PBR for some stocks. In a few prior incidental take rulemakings, this threshold was identified as the "significance threshold," but it is more accurately labeled an insignificance threshold, and so we use that terminology here. Assuming that any additional incidental take by Level A or Level B harassment from the activities in question would not combine with the effects of the authorized M/SI to exceed the negligible impact level, the anticipated M/SI caused by the activities being evaluated would have a negligible impact on the species or stock. However, M/SI above the 10 percent insignificance threshold does not indicate that the M/SI associated with the specified activities is approaching a level that would necessarily exceed negligible impact. Rather, the 10 percent insignificance threshold is meant only to identify instances where additional analysis of the anticipated M/SI is not required because the negligible impact standard clearly will not be exceeded on that basis alone.

Where the anticipated M/SI is near, at, or above residual PBR, consideration of other factors (positive or negative), including those outlined above, as well as mitigation is especially

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

PBR was designed as a tool for evaluating mortality and is defined as the number of animals that can be removed while allowing that stock to reach or maintain its OSP. OSP is defined as a population that falls within a range from the population level that is the largest supportable within the ecosystem to the population level that results in maximum net productivity, and thus is an aspirational management goal of the overall statute with no specific timeframe by which it should be met. PBR is designed to ensure minimal deviation from this overarching goal, with the formula for PBR typically ensuring that growth towards OSP is not reduced by more than 10 percent (or equilibrates to OSP 95 percent of the time). As PBR is applied by NMFS, it provides that growth toward OSP is not reduced by more than 10 percent, which certainly allows a stock to reach or maintain its OSP in a conservative and precautionary manner—and we can therefore clearly conclude that if PBR were not exceeded, there would not be adverse effects on the affected species or stocks. Nonetheless, it is equally clear that in some cases the time to reach this aspirational OSP level could be slowed by more than 10 percent (*i.e.*,

total human-caused mortality in excess of PBR could be allowed) without adversely affecting a species or stock through effects on its rates of recruitment or survival. Thus even in situations where the inputs to calculate PBR are thought to accurately represent factors such as the species' or stock's abundance or productivity rate, it is still possible for incidental take to have a negligible impact on the species or stock even where M/SI exceeds residual PBR or PBR.

PBR is helpful in informing the analysis of the effects of mortality on a species or stock because it is important from a biological perspective to be able to consider how the total mortality in a given year may affect the population. However, section 101(a)(5)(A) of the MMPA indicates that NMFS shall authorize the requested incidental take from a specified activity if we find that the total of such taking [*i.e.*, from the specified activity] will have a negligible impact on such species or stock. In other words, the task under the statute is to evaluate the applicant's anticipated take in relation to their take's impact on the species or stock, not other entities' impacts on the species or stock. Neither the MMPA nor NMFS' implementing regulations call for consideration of other unrelated activities and their impacts on the species or stock. In fact, in response to public comments on the implementing regulations NMFS explained that such effects are not considered in making negligible impact findings under section 101(a)(5), although the extent to which a species or stock is being impacted by other anthropogenic activities is not ignored. Such effects are reflected in the baseline of existing impacts as reflected in the species' or stock's abundance, distribution, reproductive rate, and other biological indicators.

Our evaluation of the M/SI for each of the species and stocks for which M/SI could occur follows. In addition, all mortality authorized for some of the same species or stocks over the next several years pursuant to our final rulemakings for the NMFS Alaska Fisheries Science Center (AFSC) and the NMFS Northwest Fisheries Science Center (NWFSC) has been incorporated into the residual PBR. By considering the maximum potential incidental M/SI in relation to PBR and ongoing sources of anthropogenic mortality, we begin our evaluation of whether the

potential incremental addition of M/SI through SWFSC research activities may affect the species' or stocks' annual rates of recruitment or survival. We also consider the interaction of those mortalities with incidental taking of that species or stock by harassment pursuant to the specified activity.

We first consider maximum potential incidental M/SI for each stock (Table 6) in consideration of NMFS's threshold for identifying insignificant M/SI take (10 percent of residual PBR (69 FR 43338; July 20, 2004)). By considering the maximum potential incidental M/SI in relation to PBR and ongoing sources of anthropogenic mortality, we begin our evaluation of whether the potential incremental addition of M/SI through SWFSC research activities may affect the species' or stock's annual rates of recruitment or survival. We also consider the interaction of those mortalities with incidental taking of that species or stock by harassment pursuant to the specified activity.

#### *Summary of Estimated Incidental Take*

Here we provide a summary of the total incidental take authorization on an annual basis, as well as other information relevant to the negligible impact analysis. Table 9 shows information relevant to our negligible impact analysis concerning the total annual taking that could occur for each stock from NMFS' scientific research activities when considering incidental take that may be authorized for SWFSC, as well as take previously authorized for AFSC (84 FR 46788; September 5, 2019) and NWFSC (83 FR 36370; July 27, 2018). We authorize take by M/SI over the five-year period of validity for these regulations as indicated in Table 9 below. As noted previously, although some gear interactions may result in Level A harassment or the release of an uninjured animal, for the purposes of the negligible impact analysis, we assume that all of these takes could potentially be in the form of M/SI. Table 9 also summarizes annual amounts of take by Level B harassment that may be authorized.

We previously authorized take of marine mammals incidental to fisheries research operations conducted by the AFSC (see 83 FR 37638 and 84 FR 46788), and NWFSC (see 81

FR 38516 and 83 FR 36370). This take would occur to some of the same stocks for which we may authorize take incidental to SWFSC fisheries research operations. Therefore, in order to evaluate the likely impact of the take by M/SI in this rule, we consider not only other ongoing sources of human-caused mortality but the potential mortality authorized for AFSC/NWFSC. As used in this document, other ongoing sources of human-caused (anthropogenic) mortality refers to estimates of realized or actual annual mortality reported in the SARs and does not include authorized or unknown mortality. Below, we consider the total taking by M/SI for SWFSC and previously authorized for AFSC/NWFSC together to produce a maximum annual M/SI take level (including take of unidentified marine mammals that could accrue to any relevant stock) and compare that value to the stock's PBR value, considering ongoing sources of anthropogenic mortality. PBR and annual M/SI values considered in Table 9 reflect the most recent information available (*i.e.*, 2019 SARs).

**Table 9. Summary Information Related to SWFSC Annual Take Authorization, 2020-25 (CCE).**

Species <sup>1</sup>	Stock	Annual Level B harassment authorization	Percent of estimated population abundance <sup>2</sup>	SWFSC total M/SI authorization, 2020-25 <sup>3</sup>	AFSC/NWFSC total M/SI authorization	Estimated maximum annual M/SI <sup>4</sup>	PBR minus annual M/SI (%) <sup>5</sup>
Gray whale	ENP	533	2.0	0	0	0	n/a
Humpback whale	CA/OR/WA	23	0.8	0	0	0	n/a
Minke whale	Alaska	19	3.0	0	0	0	n/a
Sei whale	CA/OR/WA	10	1.9	0	0	0	n/a
Fin whale	CA/OR/WA	124	1.4	0	0	0	n/a
Blue whale	ENP	18	1.2	0	0	0	n/a
Sperm whale	CA/OR/WA	96	4.8	0	0	0	n/a
<i>Kogia</i> spp.	CA/OR/WA	213	5.2	2	1	0.6	19.2 (3.1)
Cuvier's beaked whale	CA/OR/WA	160	4.9	0	0	0	n/a
Baird's beaked whale	CA/OR/WA	72	2.7	0	0	0	n/a
Mesoplodont beaked whales	CA/OR/WA	84	2.8	0	0	0	n/a
Bottlenose dolphin	CA/OR/WA Offshore	62	3.2	9	3	2.8	9.4 (29.8)
	CA Coastal		13.7	3	0	0.8	0.7 (114.3)
Striped dolphin	CA/OR/WA	883	3.0	14	7	4.6	237.2 (1.9)
Common dolphin (short-beaked)	CA/OR/WA	14,430	1.4	14	4	4	621.6 (0.6)

Common dolphin (long-beaked)	California	1,425	1.5	14	2	3.6	8,353 (0.0)
Pacific white-sided dolphin	CA/OR/WA	412	1.5	41	31	14.8	183.5 (8.1) <sup>9</sup>
Northern right whale dolphin	CA/OR/WA	614	2.3	11	7	4	175.2 (2.3)
Risso's dolphin	CA/OR/WA	209	3.3	14	9	5	42.3 (11.8)
Killer whale	ENP Offshore	13	4.3	0	0	n/a	n/a
	West Coast Transient		5.3	0	0	n/a	n/a
	ENP Southern Resident		17.3	0	0	n/a	n/a
Short-finned pilot whale	CA/OR/WA	30	3.6	2	2	0.8	3.3 (24.2)
Harbor porpoise	Morro Bay	675	15.9	6	2 <sup>6</sup>	2	65.6 (3.0)
	Monterey Bay		19.5			2	22.8 (8.8)
	San Francisco-Russian River		9.0			2	47.4 (4.2)
	Northern CA/Southern OR		2.8			2	348.8 (0.6)
	Northern OR/WA Coast		3.1			4 <sup>6</sup>	2.4
Dall's porpoise	CA/OR/WA	916	3.6	6	4	2.4	171.7 (1.4)
Guadalupe fur seal	Mexico-CA	313	0.9	0	0	0	n/a
Northern fur seal	Pribilof Islands/ Eastern Pacific	12,595	2.0 <sup>8</sup>	5	18-23 <sup>7</sup>	6.2	10,896 (0.1)
	California		2.0 <sup>8</sup>			5-13 <sup>7</sup>	4.2
California sea lion	United States	5,095	2.0	30	11	9.2	13,690 (0.1) <sup>9</sup>
Steller sea lion	Eastern U.S.	914	2.1	10	16-21 <sup>7</sup>	7	2,480 (0.3)
Harbor seal	California	1,114	3.6	14	6 <sup>6</sup>	4.8	1,598 (0.3)
	OR/WA Coast		4.5			8 <sup>6</sup>	5.2
Northern elephant seal	California Breeding	4,916	2.7	5	1	1.6	4,873.2 (0.0)

<sup>1</sup>For some species with multiple stocks, indicated level of take could occur to individuals from any stock (as indicated in table). For some stocks, a range is presented.

<sup>2</sup>For species with multiple potentially affected stocks, value is conservatively calculated as though all estimated annual takes accrue to each potentially affected stock.

<sup>3</sup>As explained earlier in this document, gear interaction could result in mortality, serious injury, or Level A harassment. Because we do not have sufficient information to enable us to parse out these outcomes, we present such take as a pool. For purposes of this negligible impact analysis we assume the worst case scenario (that all such takes incidental to research activities result in mortality).

<sup>4</sup>This column represents the total number of incidents of M/SI that could potentially accrue to the specified species or stock as a result of NMFS' fisheries research activities 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 and cetacean that may be captured in trawl gear and one to the total for each pinniped that may be captured in hook and line gear. This represents the potential that the take of an unidentified pinniped or cetacean could accrue to any given stock captured in that gear in that area. The take authorization

number 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.

<sup>5</sup>This value represents the calculated PBR less the average annual estimate of ongoing anthropogenic mortalities (*i.e.*, total annual human-caused M/SI, which is presented in the SARs) (see Table 1). In parentheses, we provide the estimated maximum annual M/SI expressed as a percentage of this value.

<sup>6</sup>A total of 4 takes of harbor porpoise by M/SI were authorized incidental to NWFSC research occurring offshore CA/OR/WA. However, two of these were expected to occur in the lower Columbia River. Therefore, a maximum of 4 takes could accrue to the Northern OR/WA Coast stock, while a maximum of only 2 of those takes could potentially accrue to the remaining stocks of harbor porpoise. A total of 7 takes of harbor seal by M/SI were authorized incidental to NWFSC research occurring offshore CA/OR/WA. However, two of these were expected to occur in the lower Columbia River. Therefore, a maximum of 7 takes could accrue to the OR/WA Coast stock, while a maximum of only 5 of those takes could potentially accrue to the California stock of harbor seal. One take of each stock by M/SI was authorized incidental to AFSC research.

<sup>7</sup>These ranges reflect that, as part of the overall take authorization for AFSC, a total of five takes of northern fur seals and Steller sea lions are expected to occur as a result specifically of International Pacific Halibut Commission longline operations. These five takes are considered as potentially accruing to either stock of northern fur seal or to either the eastern or western stocks of Steller sea lion; therefore, we assess the consequences of the take authorization for these stocks as though the maximum could occur for that stock.

<sup>8</sup>Calculated on the basis of assumed relative abundance; *i.e.*, we would expect on the basis of relative abundance in the study area that approximately 98 percent of Level B harassment would accrue to the Pribilof Islands/Eastern Pacific stock and approximately two percent would accrue to the California stock.

<sup>9</sup>Calculation of residual PBR for these stocks includes M/SI that occurred incidental to SWFSC research activities. Assumed annual M/SI due to SWFSC is accounted for in this calculation through the take authorization number. Therefore, the assumed effects of SWFSC research on these stocks is overestimated as the take numbers are incorporated to the calculation through both the reduction of “available” PBR due to past interactions as well as through the take number that is then evaluated against the residual PBR.

**Table 10. Annual Take Authorization in the AMLR, 2020-25.**

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
Southern right whale	0	0	0	n/a
Humpback whale	25	0	25	0.3
Antarctic minke whale	5	0	5	0.0
Fin whale	57	0	57	1.2
Blue whale	0	0	0	n/a
Sperm whale	5	0	5	0.0
Arnoux' beaked whale <sup>1</sup>	2	0	2	?
Southern bottlenose whale	10	0	10	0.0
Hourglass dolphin	10	0	10	0.0
Killer whale	10	0	10	0.0
Long-finned pilot whale	21	0	21	0.0
Spectacled porpoise <sup>1</sup>	10	0	10	?
Antarctic fur seal	136	417	553	0.0
Southern elephant seal	2	5	7	0.0
Weddell seal	74	225	224	0.1 <sup>2</sup>
Crabeater seal	884	2,704	3,588	0.1 <sup>2</sup>
Leopard seal	22	68	90	0.0 <sup>2</sup>

<sup>1</sup>There is no available abundance information for these species. See **Small Numbers** below for further discussion.

<sup>2</sup>A range is provided for these species' abundance. We have used the lower bound of the given range for calculation of these values.

*Analysis* – To avoid repetition, the majority of our analysis applies to all the species listed in Tables 9-10, 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.

The majority of stocks that may potentially be taken by M/SI (18 of 22) fall below the insignificance threshold (*i.e.*, 10 percent of residual PBR), while an additional two stocks do not have current PBR values and therefore are evaluated using other factors. We first consider stocks expected to be affected only by Level B harassment and those stocks that fall below the insignificance threshold. Next, we consider those stocks above the insignificance threshold (*i.e.*, two stocks of bottlenose dolphin, Risso's dolphin, and short-finned pilot whale) and those without PBR values (the dwarf sperm whale, for which no information is available, and the Oregon and Washington coastal stock of harbor seal).

As stated previously and described in detail in support of the 2015 rule (80 FR 8166), 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. We have produced what we believe to be precautionary estimates of potential incidents of Level B harassment. There is a general lack of information related to the specific way that these acoustic signals, which are generally highly directional and transient, interact with the physical environment. Additionally, there is a lack of meaningful understanding of marine mammal perception of these signals. The procedure for producing these estimates, described in detail in "Estimated Take Due to Acoustic Harassment," represents a reasonable and precautionary effort towards quantifying the potential for exposure to noise from these sources, which we equate herein with Level B harassment. The sources considered here have moderate to high output frequencies, 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 take authorization. We also produced estimates of incidents of potential Level B harassment due to disturbance of hauled-out pinnipeds that may result from the physical presence of researchers in the Antarctic; these estimates are combined with the estimates of Level B harassment that may result from use of active acoustic devices.

Here, we consider authorized Level B harassment take less than five percent of population abundance to be “de minimis,” and authorized Level B harassment taking between 5-15 percent as “low.” A “moderate” amount of authorized taking by Level B harassment would be from 15-25 percent, and “high” above 25 percent. Of the 53 stocks that may be subject to Level B harassment, the level of taking that may be authorized would represent a de minimis impact for 43 stocks and a low impact for an additional four stocks. We do not consider these impacts further for these 47 stocks.

The level of taking by Level B harassment would represent a moderate impact on three additional stocks: the southern resident stock of killer whales and Morro Bay and Monterey Bay stocks of harbor porpoise. However, the values calculated for proportion of population potentially affected assume that all estimated takes species-wide would accrue to each of the potentially affected stocks. In the absence of information to better refine stock-specific values, this worst-case proportion is an appropriate way to evaluate whether an amount of taking is greater than small numbers. For purposes of determining whether the total impacts to a stock represent no greater than a negligible impact, however, these values are overly conservative. We know that a majority of SWFSC use of active acoustic systems will not be concentrated in either of Morro Bay or Monterey Bay and, therefore, we conclude that the actual significance of taking by Level B harassment for these stocks of harbor porpoise will likely be significantly less than “moderate.” Similarly, the only potential avenue for effects to southern resident killer whales would be during the time when whales are foraging in coastal waters. Considering that whales are present in coastal waters for relatively brief portions of the year and that SWFSC research

has limited overlap with the whales' relatively shallow foraging grounds in coastal waters, we again conclude that actual significance of any potential acoustic exposure for the stock would be less than moderate. Therefore, we do not consider these stocks further. For an additional three stocks (Arnoux' beaked whale and spectacled porpoise in Antarctica and dwarf sperm whales in the CCE whale), there is no abundance estimate upon which to base a comparison. However, we note that the anticipated number of incidents of take by Level B harassment are very low (2 and 10 for the Antarctic species, respectively, and 213 combined for both stocks of *Kogia* spp.) and likely represent a de minimis impact on these stocks.

As described previously, there is some minimal potential for temporary effects to hearing for certain marine mammals, but most effects would likely be limited to temporary behavioral disturbance. Effects on individuals that are taken by Level B harassment will likely be limited to reactions such as increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring), which are all reactions that are considered to be of low severity (e.g., Ellison *et al.*, 2012). Individuals may move away from the source if disturbed; but, because the source is itself moving and because of the directional nature of the sources considered here, there is unlikely to be even temporary displacement from areas of significance and any disturbance would be of short duration. 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. For these reasons, we do not consider the level of take by acoustic disturbance to represent a significant additional population stressor when considered in context with the level of take by M/SI for any species, including those for which no abundance estimate is available.

Similarly, disturbance of pinnipeds on haul-outs by researchers (expected for Antarctic pinnipeds) is expected to be infrequent and cause only a temporary disturbance on the order of minutes. Monitoring results from other activities involving the disturbance of pinnipeds and

relevant studies of pinniped populations that experience more regular vessel disturbance indicate that individually significant or population level impacts are unlikely to occur. When considering the individual animals likely affected by this disturbance, only a small fraction of the estimated population abundance of the affected stocks would be expected to experience the disturbance.

For Risso's dolphin, short-finned pilot whale, and the offshore stock of bottlenose dolphin, maximum total potential M/SI due to NMFS' fisheries research activity (SWFSC, NWFSC, and AFSC combined) is approximately 12, 24, and 30 percent of residual PBR, respectively. For example, PBR for Risso's dolphin is currently set at 46 and the annual average of known ongoing anthropogenic M/SI is 3.7, yielding a residual PBR value of 42.3. The maximum combined annual average M/SI incidental to NMFS fisheries research activity is 5, or 11.8 percent of residual PBR. The only known source of other anthropogenic mortality for these species is in commercial fisheries. For the Risso's dolphin and offshore stock of bottlenose dolphin, such take is considered to be insignificant and approaching zero mortality and serious injury. This is not the case for the short-finned pilot whale; however, the annual take from fisheries (1.2) and from NMFS's fisheries research (0.8) are both very low. There are no other factors that would lead us to believe that take by M/SI of 24 percent of residual PBR would be problematic for this species.

For the California coastal stock of bottlenose dolphin, maximum total potential M/SI due to NMFS' fisheries research activity (SWFSC, NWFSC, and AFSC combined) is approximately 114 percent of residual PBR. Although the maximum annual take by M/SI is low (0.8), the residual PBR is also low (0.7). (Note that there is no take by M/SI authorized for this stock other than for SWFSC activities.) Here we provide additional detail regarding the available information for the coastal stock of bottlenose dolphin and explain our conclusion that the calculated proportion of residual PBR presents an unrealistically conservative assessment of the potential impacts to the stock due to SWFSC fisheries research activity. First, the available information indicates that the PBR value is biased low. PBR is calculated in consideration of the

minimum population size which, for coastal bottlenose dolphins, represents the minimum number of individually identifiable animals documented during mark-recapture surveys in 2009-11 (Carretta *et al.*, 2017). This number (346 animals) represents the minimum abundance, but estimates of population abundance resulting from the 2009-11 study range from 411-564 animals (Carretta *et al.*, 2017). Even these higher abundance estimates represent marked animals only, and exclude the approximately 40 percent of animals that are not individually recognizable (Weller *et al.*, 2016). In addition, the estimates based on the 2009-11 study were the highest ever for the population and included a high proportion (~75 percent) of previously uncatalogued dolphins (Weller *et al.*, 2016). The number of individually identifiable animals from 2009-11 exceeded previous estimates for the abundance of the entire marked population. These facts suggest that the stock may have grown in the ten years since conclusion of the last abundance study. Finally, although the stock is confined to U.S. waters for management purposes, the biological stock is transboundary and an unknown additional number of dolphins are likely found in Mexico. Regarding anthropogenic M/SI that is assumed to be ongoing, current estimates are based on scant data. With 9 percent observer coverage in the coastal halibut/yellowtail gillnet fishery during 2010-14, no entanglements were observed, and none have been observed since 2003 (Carretta *et al.*, 2017). The basis for the assumption that a minimum of 1.6 dolphins are killed annually in fisheries was the discovery of two carcasses with evidence of entanglement from 2010-14. In addition, during this same period, one dolphin was found floating under a U.S. Navy marine mammal program dolphin pen enclosure dock and was assumed to have become entangled in the net curtain, and another dolphin became entrapped and drowned in a sea otter research net. Both of these incidents could rightly be considered as unpredictable occurrences with little likelihood of recurring. However, they add 0.4 animals to the assumed amount of ongoing annual anthropogenic M/SI. None of NMFS' fisheries research activities on the west coast have ever resulted in an interaction with bottlenose dolphins. In summary, the available information leads us to conclude that the PBR value for the stock is

likely unrealistically low and that the assumed annual anthropogenic M/SI value may be higher than is actually occurring. Therefore, we find that the potential total take of coastal bottlenose dolphin considered here represents a negligible impact on the stock.

PBR is unknown for harbor seals on the Oregon and Washington coasts. The Oregon/Washington coast stock of harbor seal was considered to be stable following the most recent abundance estimates (in 1999, stock abundance estimated at 24,732). However, a Washington Department of Fish and Wildlife expert (S. Jeffries) stated an unofficial abundance of 32,000 harbor seals in Washington (Mapes, 2013). Therefore, it is reasonable to assume that at worst, the stocks have not declined since the last abundance estimates. Ongoing anthropogenic mortality is estimated at 10.6 harbor seals per year. Therefore, we reasonably assume that the maximum potential annual M/SI incidental to NMFS' fisheries research activities (5.2) is a small fraction of any sustainable take level that might be calculated for the stock.

PBR is also undetermined for the dwarf sperm whale. However, a PBR of 19.2 is calculated for the pygmy sperm whale, and there are no additional known sources of anthropogenic M/SI for *Kogia* spp. Although it is possible that there are fewer dwarf sperm whales than pygmy sperm whales in the CCE, we reasonably assume that the maximum potential annual M/SI incidental to NMFS' fisheries research activities (0.6) is a small fraction of any sustainable take level that might be calculated for the stock.

In summary, our negligible impact analysis 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 and physical disturbance of pinnipeds consist of, at worst, temporary and relatively minor modifications in behavior; (3) the predicted number of incidents of potential mortality are at insignificant levels for a majority of affected stocks; (4) consideration of additional factors for Risso's dolphin, short-finned pilot whale, and the offshore stock of bottlenose dolphin do not reveal cause for concern; (5) total maximum potential M/SI

incidental to NMFS fisheries research activity for coastal bottlenose dolphin, considered in conjunction with other sources of ongoing mortality and in context of the available information regarding stock abundance, presents only a minimal incremental addition to total M/SI; (6) available information regarding stocks for which no current PBR estimate is available indicates that total maximum potential M/SI is sustainable; and (7) 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 (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.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the required monitoring and mitigation measures, we find that the total marine mammal take from the proposed activities will have a negligible impact on the affected marine mammal species or stocks.

### **Small Numbers**

As noted above, only small numbers of incidental take may be authorized under Section 101(a)(5)(A) of the MMPA for specified activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

Please see Tables 9 and 10 for information relating to this small numbers analysis. The total amount of taking is less than five percent for a majority of stocks, and the total amount of taking is less than one-third of the stock abundance for all stocks.

Based on the analysis contained herein of the activity (including the required mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS finds that small numbers of marine mammals will be taken relative to the population size of the affected species or stocks.

### **Impact on Availability of Affected Species for Taking for Subsistence Uses**

There are no relevant subsistence uses of marine mammals implicated by these actions. 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.

### **Adaptive Management**

The regulations governing the take of marine mammals incidental to SWFSC fisheries research survey operations contain an adaptive management component. The inclusion of an adaptive management component will be both 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 this rule are designed to provide OPR with monitoring data from the previous year to allow consideration of whether any changes are appropriate. OPR and the 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.

### **National Environmental Policy Act**

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

In 2015, NMFS prepared a Programmatic Environmental Assessment (PEA; *Programmatic Environmental Assessment for Fisheries Research Conducted and Funded by the Southwest Fisheries Science Center*) to consider the direct, indirect and cumulative effects to the human environment resulting from SWFSC's activities as well as the NMFS Office of Protected Resources (OPR) issuance of the regulations and subsequent incidental take authorization. NMFS made the PEA available to the public for review and comment, in relation specifically to its suitability for assessment of the impacts of our action under the MMPA. OPR signed a Finding of No Significant Impact (FONSI) related to our action under the MMPA on August 31, 2015. The PEA and the 2015 FONSI are available online at:

[www.fisheries.noaa.gov/action/incidental-take-authorization-noaa-fisheries-swfsc-fisheries-and-ecosystem-research](http://www.fisheries.noaa.gov/action/incidental-take-authorization-noaa-fisheries-swfsc-fisheries-and-ecosystem-research).

On May 11, 2020, NMFS announced the availability of a “*Draft Supplemental Programmatic Environmental Assessment (SPEA) for Fisheries Research Conducted and Funded by the Southwest Fisheries Science Center*” for review and comment (85 FR 27719). The purpose of the Draft SPEA is to evaluate potential direct, indirect, and cumulative effects of unforeseen changes in research that were not analyzed in the 2015 PEA, or new research activities along the U.S. West Coast, throughout the Eastern Tropical Pacific Ocean, and in the Scotia Sea area off Antarctica. Where necessary, updates to certain information on species, stock

status or other components of the affected environment that may result in different conclusions from the 2015 PEA are presented in this analysis.

NMFS evaluated information in the PEA, SPEA, and SWFSC's application, as well as the 2015 FONSI, and determined that the initial FONSI is sufficient to support issuance of these regulations and subsequent Letters of Authorization. NMFS has documented this determination in a memorandum for the record.

### **Endangered Species Act (ESA)**

There are multiple marine mammal species listed under the ESA with confirmed or possible occurrence in the proposed specified geographical regions (see Tables 1 and 2). 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.

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 adversely affect any listed marine mammal species.

### **Classification**

Pursuant to the procedures established to implement Executive Order 12866, the Office of Management and Budget has determined that this proposed rule is not significant.

Pursuant to section 605(b) of the Regulatory Flexibility Act (RFA), the Chief Counsel for Regulation of the Department of Commerce certified to the Chief Counsel for Advocacy of the Small Business Administration at the proposed rule stage that this action will not have a significant economic impact on a substantial number of small entities. SWFSC is the sole entity that would be subject to the requirements of these regulations, and the SWFSC is not a small governmental jurisdiction, small organization, or small business, as defined by the RFA. No

comments were received regarding this certification or on the economic impacts of the rule more generally. As a result, a regulatory flexibility analysis is not required and none has been prepared.

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. However, this rule does not contain a collection-of-information requirement subject to the provisions of the PRA because the applicant is a Federal agency.

### **Waiver of Delay in Effective Date**

NMFS has determined that there is good cause under the Administrative Procedure Act (5 U.S.C 553(d)(3)) to waive the 30-day delay in the effective date of this final rule. No individual or entity other than the SWFSC is affected by the provisions of these regulations. The SWFSC has requested that this final rule take effect on October 30, 2020, to accommodate the SWFSC's LOA expiring on October 29, 2020, so as to not cause a disruption in research activities. The waiver of the 30-day delay of the effective date of the final rule will ensure that the MMPA final rule and LOA are in place by the time the previous authorizations expire. Any delay in finalizing the rule would result in either: (1) A suspension of planned research, which would disrupt the provision of vital data necessary for effective management of fisheries; or (2) the SWFSC's procedural non-compliance with the MMPA (should the SWFSC conduct research without an LOA), thereby resulting in the potential for unauthorized takes of marine mammals. Moreover, the SWFSC is ready to implement the regulations immediately and requested the waiver. For these reasons, NMFS finds good cause to waive the 30-day delay in the effective date. In addition, the rule authorizes incidental take of marine mammals that would otherwise be prohibited under the statute. Therefore, by granting an exception to the SWFSC, the rule will relieve restrictions under the MMPA, which provides a separate basis for waiving the 30-day

effective date for the rule.

**List of Subjects in 50 CFR Part 219**

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

Dated: December 14, 2020/

**Samuel D. Rauch III,**

*Deputy Assistant Administrator for Regulatory Programs,*

*National Marine Fisheries Service.*

For reasons set forth in the preamble NOAA adds 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**

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 – 219.10 [Reserved]

**Subpart B [Reserved]**

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

**Subpart A – Taking Marine Mammals Incidental to Southwest Fisheries Science Center  
Fisheries Research**

**§ 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 areas 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 (CCE) or Antarctic Marine Living Resources Ecosystem (AMLR).

**§ 219.2 Effective dates.**

Regulations in this subpart are effective from [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER] through January 15, 2026.

**§ 219.3 Permissible methods of taking.**

Under LOAs issued pursuant to §§ 216.106 of this chapter and 219.7, the Holder of the LOA (hereinafter “SWFSC”) may incidentally, but not intentionally, take marine mammals within the area described in § 219.1(b) by Level B harassment associated with use of active acoustic systems and physical or visual disturbance of hauled-out pinnipeds and by Level A harassment, serious injury, or mortality associated with use of fisheries research gear, provided the activity is in compliance with all terms, conditions, and requirements of the regulations in this subpart and the appropriate LOA.

**§ 219.4 Prohibitions.**

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

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

(2) Take any marine mammal not specified in such LOA;

(3) Take any marine mammal specified in such LOA in any manner other than as specified;

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

(5) Take a marine mammal specified in such LOA 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.

(b) [Reserved]

### **§ 219.5 Mitigation requirements.**

When conducting the activities identified in § 219.1(a), the mitigation measures contained in any LOA issued under §§ 216.106 of this chapter and 219.7 must be implemented.

(a) *General conditions.* (1) SWFSC must 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 must 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 must 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 must 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 must implement handling and/or disentanglement protocols as specified in guidance provided to SWFSC survey personnel.

(b) *Trawl survey protocols.* (1) SWFSC must conduct trawl operations as soon as is practicable upon arrival at the sampling station.

(2) SWFSC must initiate marine mammal watches (visual observation) at least 15 minutes prior to beginning of net deployment (or for the amount of time to travel between stations if less than 15 minutes) but must also conduct monitoring during any pre-set activities including CTD casts and plankton or bongo net hauls.

(3) In the CCE, SWFSC must implement the move-on rule mitigation protocol, as described in this paragraph. If one or more marine mammals, with the exception of baleen whales, are observed within 1 nautical mile (nmi) of the planned sampling location during the visual observation period, SWFSC must move on to another sampling location. If, after moving on, marine mammals remain within 1 nmi, the SWFSC must move again or skip the station. SWFSC may use best professional judgment in making these decisions but may not elect to conduct trawl survey activity when marine mammals other than baleen whales remain within the 1-nmi zone.

(4) SWFSC must maintain visual monitoring effort during the entire period of time that trawl gear is in the water (*i.e.*, throughout gear deployment, fishing, and retrieval). If marine mammals are sighted before the gear is fully removed from the water, SWFSC must 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 nmi area. SWFSC may use best professional judgment in making this determination.

(6) SWFSC must 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 any other net is used for which the device is appropriate.

(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 must deploy longline gear as soon as is practicable upon arrival at the sampling station.

(2) SWFSC must initiate marine mammal watches (visual observation) no less than 15 minutes (or for the duration of transit between locations, if shorter than 15 minutes) prior to both deployment and retrieval of longline gear.

(3) SWFSC must implement the move-on rule mitigation protocol, as described in this paragraph. If one or more marine mammals, with the exception of groups of five or fewer California sea lions, are observed within 1 nmi of the planned sampling location during the visual observation period, SWFSC must move on to another sampling location. If, after moving on, marine mammals remain within 1 nmi, the SWFSC must move again or skip the station. SWFSC may use best professional judgment in making these decisions but may not elect to conduct pelagic longline survey activity when animals remain within the 1-nmi zone.

(4) SWFSC must 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 must 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 nmi area. SWFSC may use best professional judgment in making this decision.

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

(d) *Purse seine survey protocols.* (1) SWFSC must conduct purse seine operations as soon as is practicable upon arrival at the sampling station.

(2) SWFSC must conduct marine mammal watches (visual observation) prior to beginning of net deployment.

(3) SWFSC must implement the move-on rule mitigation protocol, as described in this paragraph for use of purse seine gear. If one or more killer whales or small cetaceans (*i.e.*, dolphin or porpoise) or five or more pinnipeds are observed within 500 m of the planned sampling location before setting the purse seine gear, SWFSC must either remain onsite or move on to another sampling location. If remaining onsite, the set must be delayed. If the animals depart or appear to no longer be at risk of interacting with the vessel or gear, a further observation period must be conducted. If no further observations are made or the animals still do not appear to be at risk of interaction, then the set may be made. If the vessel is moved to a different area, the move-on rule mitigation protocol would begin anew. If, after moving on, marine mammals remain at risk of interaction, the SWFSC must move again or skip the station. Marine mammals that are sighted further than 500 m from the vessel must be monitored to determine their position and movement in relation to the vessel to determine whether the move-on rule mitigation protocol should be implemented. SWFSC may use best professional judgment in making these decisions.

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

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

determination.

(6) If any cetaceans are observed in a purse seine net, SWFSC must immediately open the net and free the animals.

#### **§ 219.6 Requirements for monitoring and reporting.**

(a) *Compliance coordinator.* SWFSC must designate a compliance coordinator who shall be responsible for ensuring compliance with all requirements of any LOA issued pursuant to § 216.106 of this chapter and § 219.7 and for preparing for any subsequent request(s) for incidental take authorization.

(b) *Visual monitoring program.* (1) Marine mammal visual monitoring must occur prior to deployment of trawl, hook and line, and purse seine gear, respectively; throughout deployment of gear and active fishing of research gears (not including longline soak time); prior to retrieval of longline gear; and throughout retrieval of all research gear.

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

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

(c) *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 must 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 must coordinate with NMFS' Northwest Fisheries Science Center (NWFSC)

regarding surveys conducted in the CCE, such that training and guidance related to handling procedures and data collection is consistent.

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

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

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

(e) *Reporting.* (1) SWFSC must report all incidents of marine mammal interaction to NMFS's Protected Species Incidental Take database within 48 hours of occurrence and must 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) SWFSC must submit annual reports including:

(i) An annual summary report to OPR not later than 90 days following the end of a given year. SWFSC must provide a final report within 30 days following resolution of comments on the draft report.

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

(A) Annual line-kilometers surveyed during which predominant active acoustic sources

were used;

(B) Summary information regarding use of all hook and line, purse seine, and trawl gear, including number of sets, hook hours, tows, etc., specific to each gear;

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

(D) Summary information related to any on-ice disturbance of pinnipeds, including raw sightings data and the event-specific total counts of animals present, counts of reactions according to a three-point scale of response severity and numbers of takes (differentiated by species and age class), the distance at which a pinniped is disturbed and the closest point of approach for each disturbance event;

(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 and any coordination with NWFSC or NMFS' West Coast Regional Office.

(f) *Reporting of injured or dead marine mammals.* (1) In the event that personnel involved in the survey activities covered by the authorization discover an injured or dead marine mammal, SWFSC must report the incident to OPR and to the appropriate West Coast Regional Stranding Coordinator as soon as feasible. The report must include the following information:

(i) Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);

(ii) Species identification (if known) or description of the animal(s) involved;

- (iii) Condition of the animal(s) (including carcass condition if the animal is dead);
- (iv) Observed behaviors of the animal(s), if alive;
- (v) If available, photographs or video footage of the animal(s); and
- (vi) General circumstances under which the animal was discovered.

(2) In the event of a ship strike of a marine mammal by any vessel involved in the activities covered by the authorization, SWFSC must report the incident to OPR and to the appropriate West Coast Regional Stranding Coordinator as soon as feasible. The report must include the following information:

- (i) Time, date, and location (latitude/longitude) of the incident;
- (ii) Species identification (if known) or description of the animal(s) involved;
- (iii) Vessel's speed during and leading up to the incident;
- (iv) Vessel's course/heading and what operations were being conducted (if applicable);
- (v) Status of all sound sources in use;
- (vi) Description of avoidance measures/requirements that were in place at the time of the strike and what additional measures were taken, if any, to avoid strike;
- (vii) Environmental conditions (*e.g.*, wind speed and direction, Beaufort sea state, cloud cover, visibility) immediately preceding the strike;
- (viii) Estimated size and length of animal that was struck;
- (ix) Description of the behavior of the marine mammal immediately preceding and following the strike;
- (x) If available, description of the presence and behavior of any other marine mammals immediately preceding the strike;
- (xi) Estimated fate of the animal (*e.g.*, dead, injured but alive, injured and moving, blood or tissue observed in the water, status unknown, disappeared); and
- (xii) To the extent practicable, photographs or video footage of the animal(s).

**§ 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.

(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 of this chapter and 219.7 for the activity identified in § 219.1(a) shall be renewed or modified upon request by the applicant, provided that:

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

(2) OPR determines that the mitigation, monitoring, and reporting measures required by

the previous LOA under these regulations were implemented.

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

(c) An LOA issued under §§ 216.106 of this chapter and 219.7 for the activity identified in § 219.1(a) may be modified by OPR under the following circumstances:

(1) 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; and extent or number not authorized by these regulations or subsequent LOAs.

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

(2) If OPR determines that an emergency exists that poses a significant risk to the well-being of the species or stocks of marine mammals specified in LOAs issued pursuant to §§ 216.106 of this chapter and 219.7, 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 – 219.10 [Reserved]**

[FR Doc. 2020-27817 Filed: 1/14/2021 8:45 am; Publication Date: 1/15/2021]