



## DEPARTMENT OF COMMERCE

### National Oceanic and Atmospheric Administration

[RTID 0648-XB327]

#### **Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the Fuel Pier Inboard Pile Removal Project in San Diego, California**

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

**ACTION:** Notice; issuance of an Incidental Harassment Authorization.

**SUMMARY:** In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that NMFS has issued an IHA to the United States Navy to incidentally harass, by Level B harassment only, marine mammals during pile driving/removal activities associated with the Fuel Pier Inboard Pile Removal Project in San Diego Bay, California.

**DATES:** This Authorization is effective from January 15, 2022 through January 14, 2023.

**FOR FURTHER INFORMATION CONTACT:** Kelsey Potlock, Office of Protected Resources, NMFS, (301) 427-8401. Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: <https://www.fisheries.noaa.gov/action/incidental-take-authorization-us-navy-fuel-pier-removal-naval-base-san-diego-california>. In case of problems accessing these documents, please call the contact listed above.

#### **SUPPLEMENTARY INFORMATION:**

##### **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 February 3, 2021, NMFS received a request from United States Navy (Navy) for an IHA to take marine mammals incidental to pile driving/removal activities at Naval Base Point Loma in San Diego Bay, California. The application was deemed adequate and complete on May 17, 2021. The Navy’s request is for take of a small number of six species of marine mammals by Level B harassment only. Neither the Navy nor NMFS

expects serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

Naval Base Point Loma provides berthing and support services for Navy submarines and other fleet assets. The existing fuel pier previously served as a fuel depot for loading and unloading fuel. Naval Base Point Loma is the only active Navy fueling facility in southern California. The current project is to remove piles that were part of the old pier that was replaced over the past few years. This IHA includes up to 84 days of in-water pile driving/removal activities.

NMFS has previously issued incidental take authorizations to the Navy for similar activities over the past 8 years at Naval Base Point Loma in San Diego Bay, including IHAs issued effective from September 1, 2013, through August 31, 2014 (78 FR 44539, July 24, 2013; Year 1 Project), October 8, 2014 through October 7, 2015 (79 FR 65378, November 4, 2014; Year 2 Project), October 8, 2015 through October 7, 2016 (80 FR 62032, October 15, 2015; Year 3 Project), October 8, 2016 through October 7, 2017 (81 FR 66628, September 28, 2016; Year 4 Project), October 8, 2017 through October 7, 2018 (82 FR 45811, October 2, 2017; Year 5 Project), September 15, 2020 through September 14, 2021 (85 FR 33129, June 1, 2020; Floating Dry Dock Project), and October 1, 2021 through September 30, 2022 (86 FR 7993, February 3, 2021; Pier 6 Replacement Project). The Navy has complied with all the requirements (*e.g.*, mitigation, monitoring, and reporting) of past IHAs. Monitoring reports from these activities are available on NMFS website (<https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities>).

## **Description of the Specified Activity**

### *Overview*

The purpose of this project is to remove old piles from the Fuel Pier at Naval Base Point Loma to allow for continued Naval Fleet readiness activities. More specifically, the

in-water construction work includes the removal of 409 piles by a variety of techniques (*i.e.*, one to two pile clippers, an underwater chainsaw, a diamond wire saw, or a vibratory hammer, possibly with assistance from a diver). Concurrent pile removal may occur for some piles by using only two pile clippers. The piles include an estimated 12 13-inch diameter polycarbonate fender piles, 56 14-inch diameter concrete fender piles, and 341 16-inch diameter concrete structural piles.

A detailed description of the planned project is provided in the **Federal Register** notice for the proposed IHA (86 FR 38274; July 20, 2021). Since that time, no changes have been made to the planned pile removal activities. Therefore, a detailed description is not provided here. Please refer to that **Federal Register** notice for the description of the specific activity.

Mitigation, monitoring, and reporting measures are described in detail later in this document (please see **Mitigation** and the **Monitoring and Reporting** sections).

### **Comments and Responses**

A notice of NMFS' proposal to issue an IHA to the Navy was published in the **Federal Register** on July 20, 2021 (86 FR 38274). That notice described, in detail, the Navy's activity, the marine mammal species that may be affected by the activity, and the anticipated effects on marine mammals. During the 30-day public comment period, NMFS received public comments from one commenter. The United States Geological Survey noted that they have "no comment at this time".

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

Sections 3 and 4 of the application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history, of the potentially affected species. Additional information regarding population trends and threats may be found in NMFS's Stock Assessment Reports (SARs;

*<https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal->*

*stock-assessments*) and more general information about these species (*e.g.*, physical and behavioral descriptions) may be found on NMFS's website (<https://www.fisheries.noaa.gov/find-species>).

Table 1 lists all marine mammal species with expected potential for occurrence in the vicinity of Naval Base Point Loma during the project timeframe and summarizes key information, including regulatory status under the MMPA and Endangered Species Act (ESA) and potential biological removal (PBR), where known. PBR is 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 (as described in NMFS's SARs; <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments>). While no mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats. For taxonomy, we followed the Society for Marine Mammalogy's Committee on Taxonomy (2020).

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 comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS's 2019 Pacific SARs (Carretta *et al.*, 2020a) and recently finalized 2020 U.S. Pacific SARs (Carretta *et al.*, 2020b). Upon the finalizing of the 2020 SARs, none of the stock information for the species that are expected to occur in the project area for this project has changed. All values presented in Table 1 are the most recent available at the time of publication and are available in the 2019 Pacific SARs and 2020 Pacific SARs (available online at:

<https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports>).

**Table 1-- Species Expected to Occur in the Project Area**

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 Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae						
Bottlenose dolphin	<u>Tursiops truncatus</u>	California coastal	-, -, N	453 (0.06, 3436, 2011)	2.7	≥2.0
Short-beaked common dolphin	<u>Delphinus delphis</u>	California/Oregon/Washington	-, -, N	969,861 (0.17, 839,325, 2014)	8393	≥40
Long-beaked common dolphin	<u>Delphinus capensis</u>	California	-, -, N	101,305 (0.49, 68,432, 2014)	657	≥35.4
Pacific white-sided dolphin	<u>Lagenorhynchus obliquidens</u>	California/Oregon/Washington	-, -, N	26,814 (0.28, 21,195, 2014)	191	7.5
Order Carnivora – Superfamily Pinnipedia						
Family Otariidae (eared seals and sea lions)						
California sea lion	<u>Zalophus californianus</u>	United States	-, -, N	257,606 (N/A, 233,515, 2014)	14011	>320
Family Phocidae (earless seals)						
Harbor seal	<u>Phoca vitulina</u>	California	-, -, N	30,968 (N/A, 27,348, 2012)	1641	43
Northern elephant seal	<u>Mirounga angustirostris</u>	California breeding	-, -, N	179,000 (N/A, 81,368, 2010)	4882	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 online at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments>. CV is coefficient of variation; Nmin is the minimum estimate of stock abundance.

<sup>3</sup> - These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury (M/SI) from all sources combined (e.g., commercial fisheries, ship strike). Annual M/SI often cannot be determined precisely

and is in some cases presented as a minimum value or range. A CV associated with estimated mortality due to commercial fisheries is presented in some cases.

For Risso's dolphins (*Grampus griseus*) and gray whales (*Eschrichtius robustus*), occurrence is such that take is unlikely and we have not authorized take of these species.

A detailed description of the of the species likely to be affected by the project, including brief introductions to the species and relevant stocks as well as available information regarding population trends and threats, and information regarding local occurrence, were provided in the **Federal Register** notice for the proposed IHA (86 FR 38274; July 20, 2021); since that time, we are not aware of any changes in the status of these species and stocks; therefore, detailed descriptions are not provided here. Please refer to that **Federal Register** notice for these descriptions. Please also refer to NMFS' website (<https://www.fisheries.noaa.gov/find-species>) for generalized species accounts.

#### **Potential Effects of Specified Activities on Marine Mammals and their Habitat**

The effects of underwater noise from the Navy's construction activities have the potential to result in behavioral harassment of marine mammals in the vicinity of the project area. The notice of proposed IHA that was published in the **Federal Register** (86 FR 38274; July 20, 2021) included a discussion of the effects of anthropogenic noise on marine mammals and the potential effects of underwater noise from the Navy's construction on marine mammals and their habitat. That information and analysis is incorporated by reference into this final IHA determination and is not repeated here; please refer to the notice of proposed IHA (86 FR 38274; July 20, 2021).

#### **Estimated Take**

This section provides an estimate of the number of incidental takes authorized through this IHA, which will inform both NMFS' consideration of "small numbers" and the negligible impact determination.

Harassment is the only type of take expected to result from these activities. 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).

Authorized takes are for Level B harassment only, in the form of disruption of behavioral patterns and TTS for individual marine mammals resulting from exposure to the sounds produced from the underwater acoustic sources (*i.e.*, vibratory hammer, single use or concurrent use of pile clippers, underwater chainsaw, diamond wire saw). Based on the nature of the activity and the anticipated effectiveness of the mitigation measures (*i.e.*, PSO monitoring and shutdown zone) discussed in detail below in the **Mitigation** and the **Monitoring and Reporting** sections, Level A harassment is neither anticipated nor will be authorized.

As described previously, no mortality is anticipated or authorized for this activity. Below we describe how the take is estimated.

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

results or average group size). Below, we describe the factors considered here in more detail and present the take estimate.

### *Acoustic Thresholds*

NMFS recommends the use of acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals will be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur PTS of some degree (equated to Level A harassment).

Level B Harassment for non-explosive sources – Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source (*e.g.*, frequency, predictability, duty cycle), the environment (*e.g.*, bathymetry), and the receiving animals (hearing, motivation, experience, demography, behavioral context) and can be difficult to predict (Southall *et al.*, 2007, Ellison *et al.*, 2012). Based on what the available science indicates and the practical need to use a threshold based on a factor that is both predictable and measurable for most activities, NMFS uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS predicts that marine mammals are likely to be behaviorally harassed in a manner we consider Level B harassment when exposed to underwater anthropogenic noise above received levels of 120 dB re 1  $\mu$ Pa (root mean square (rms)) for continuous (*e.g.*, vibratory hammer) and above 160 dB re 1  $\mu$ Pa (rms) for non-explosive impulsive (*e.g.*, impact hammers (pile-driving)) or intermittent (*e.g.*, scientific sonar) sources.

The Navy's pile driving/removal activities includes the use of stationary, non-impulsive, and continuous noise sources (vibratory hammer, diamond wire saw, underwater chainsaw, single use or concurrent use of pile clippers), and therefore the 120 dB re 1  $\mu$ Pa (rms) is applicable. However, as discussed above, the Navy measurements support an ambient noise estimate of 129.6 dB re 1  $\mu$ Pa (rms) in the project area.

Accordingly, we have adjusted the standard Level B harassment threshold of 120 dB to 129.6 dB, as it likely provides a more realistic and accurate basis for predicting Level B harassment in the San Diego Bay area.

Level A harassment for non-explosive sources - NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0) (NMFS, 2018a) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). The Navy's pile driving/removal activities includes the use of non-impulsive (vibratory pile removal and other cutting and removal methods) sources.

These thresholds are provided in Table 2 below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS 2018a Technical Guidance, which may be accessed at <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance>.

**Table 2-- Thresholds Identifying the Onset of Permanent Threshold Shift (PTS)**

Hearing Group	PTS Onset Acoustic Thresholds <sup>1</sup> (Received Level)	
	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	<i>Cell 1</i> $L_{pk,flat}$ : 219 dB $L_{E,LF,24h}$ : 183 dB	<i>Cell 2</i> $L_{E,LF,24h}$ : 199 dB
Mid-Frequency (MF) Cetaceans	<i>Cell 3</i> $L_{pk,flat}$ : 230 dB $L_{E,MF,24h}$ : 185 dB	<i>Cell 4</i> $L_{E,MF,24h}$ : 198 dB
High-Frequency (HF) Cetaceans	<i>Cell 5</i> $L_{pk,flat}$ : 202 dB $L_{E,HF,24h}$ : 155 dB	<i>Cell 6</i> $L_{E,HF,24h}$ : 173 dB
Phocid Pinnipeds (PW) (Underwater)	<i>Cell 7</i> $L_{pk,flat}$ : 218 dB $L_{E,PW,24h}$ : 185 dB	<i>Cell 8</i> $L_{E,PW,24h}$ : 201 dB
Otariid Pinnipeds (OW) (Underwater)	<i>Cell 9</i> $L_{pk,flat}$ : 232 dB $L_{E,OW,24h}$ : 203 dB	<i>Cell 10</i> $L_{E,OW,24h}$ : 219 dB

<sup>1</sup> - Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered.

*Note:* Peak sound pressure (L<sub>pk</sub>) has a reference value of 1 μPa, and cumulative sound exposure level (LE) has a reference value of 1μPa<sup>2</sup>s. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript “flat” is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds could be exceeded in a multitude of ways (*i.e.*, varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds would be exceeded.

### *Ensonified Area*

Here, we describe operational and environmental parameters of the activity that will feed into identifying the area ensonified above the acoustic thresholds, which include source levels, durations, and transmission loss coefficient.

The sound field in the project area is the existing background noise plus additional construction noise from this project. Marine mammals are expected to be affected via sound generated by the primary components of the project (*i.e.*, vibratory pile removal, diamond wire saw, single use or concurrent use of pile clippers, and underwater chainsaws).

Vibratory hammers produce constant sound when operating, and produce vibrations that liquefy the sediment surrounding the pile, allowing it to penetrate to the required seating depth or be withdrawn more easily. The actual durations of each method vary depending on the type and size of the pile.

In order to calculate the distance to the Level B harassment sound threshold for piles of various sizes being used in this project, the Navy used acoustic monitoring data from other locations and projects to develop source levels for the various pile types, sizes, and methods of removal. Data for the removal methods (*i.e.*, a diamond wire saw, individual use or concurrent use of pile clippers, and an underwater chainsaw) comes from data gathered at other nearby or related Navy projects as reported in their San Diego

Noise Compendium (NAVFAC SW, 2020). The only exception to this is the sound source data for the vibratory hammer, which was sourced from the City of Seattle Pier 62 project (Greenbusch Group, 2018). The source levels for the pile clippers, single and simultaneous use, and underwater chainsaw for this project utilized the mean maximum RMS SPL rather than the median sound levels we typically use as this will provide a more conservative measure. The diamond wire saw utilized the noise profile measurements associated with the removal of 66-inch and 84-inch caissons in the Navy Compendium (NAVFAC SW, 2020).). The Navy has noted, and we agree, that these values are likely much lower in reality as this project would remove 16-inch concrete piles instead of the much larger variants modeled in the Compendium. However, no recorded data currently exists for the wire saws cutting concrete; therefore, we used the mean of the source level data from the Navy Compendium. The vibratory hammer used the highest average weighted RMS sound level per the Seattle Pier 62 project acoustic monitoring report (Greenbusch Group, 2018).

During pile driving/removal activities, there may be times when two pile extraction methods (*i.e.*, pile clippers) are used simultaneously. The likelihood of such an occurrence is anticipated to be infrequent, will depend on the specific methods chosen by the contractor, and will be for short durations on that day. In-water pile removal occurs intermittently, and it is common for removal to start and stop multiple times as each pile is adjusted and its progress is measured. Moreover, the Navy has multiple options for pile removal depending on the pile type and condition, sediment, and how stuck the pile is, etc. When two continuous noise sources, such as pile clippers, have overlapping sound fields, there is potential for higher sound levels than for non-overlapping sources. When two or more pile removal methods (pile clippers) are used simultaneously, and the sound field of one source encompasses the sound field of another source, the sources are considered additive and combined using the following rules (see Table 3). For addition of

two simultaneous methods, the difference between the two sound source levels (SSLs) is calculated, and if that difference is between 0 and 1 dB, 3 dB are added to the higher SSL; if difference is between 2 or 3 dB, 2 dB are added to the highest SSL; if the difference is between 4 to 9 dB, 1 dB is added to the highest SSL; and with differences of 10 or more dB, there is no addition (NMFS, 2018b; WSDOT, 2018).

**Table 3-- Rules for Combining Sound Levels Generated During Pile Removal**

Difference in SSL	Level A harassment isopleths	Level B harassment isopleths
0 or 1 dB	Add 3 dB to the higher source level	Add 3 dB to the higher source level.
2 or 3 dB	Add 2 dB to the higher source level	Add 2 dB to the higher source level.
4 to 9 dB	Add 1 dB to the higher source level	Add 1 dB to the higher source level.
10 dB or more	Add 0 dB to the higher source level	Add 0 dB to the higher source level.

Source: Modified from USDOT, 1995; WSDOT, 2018; and NMFS, 2018b.

Note: dB = decibel; SSL = sound source Level

#### *Level A Harassment Zones*

When the NMFS Technical Guidance (2016) was published, in recognition of the fact that ensonified area/volume could be more technically challenging to predict because of the duration component in the new thresholds, we developed a User Spreadsheet that includes tools to help predict a simple isopleth that can be used in conjunction with marine mammal density or occurrence to help predict takes. We note that because of some of the assumptions included in the methods used for these tools, we anticipate that isopleths produced are typically going to be overestimates of some degree, which may result in some degree of overestimate of Level A harassment take. However, these tools offer the best way to predict appropriate isopleths when more sophisticated 3D modeling methods are not available, and NMFS continues to develop ways to quantitatively refine these tools, and will qualitatively address the output where appropriate. For stationary sources, such as the localized pile removal activities discussed above, the NMFS User

Spreadsheet predicts the distance at which, if a marine mammal remained at that distance the whole duration of the activity, it will incur PTS.

The Navy provided estimates to NMFS for the duration of sound exposure for each pile removal activity. The durations used in this project for each pile removal method were noted as “conservative estimates that are greater than durations observed in the San Diego Noise Compendium” by the Navy. In discussions with NMFS, the Navy has explained that the average durations found in the IHA application and Compendium were based around data collected in the from the old Fuel Pier demolition projects (NAVFAC SW 2014, 2015a, 2016, 2017a, 2017b, 2018a, and 2018b). These values were adjusted to account for either the maximum amount of time the activity could occur (*i.e.*, pile clippers), a duration that is greater than the maximum (*i.e.*, underwater chainsaw and vibratory hammer), or an adjusted duration based on the removal of a smaller pile (*i.e.*, diamond wire saw) in order to provide somewhat more conservative measurements using real-world data. These values were likely considered more realistic for past projects and could safely be assumed as conservative for this project as the Navy will be cutting smaller sized piles. The Navy also performed an “ultra-conservative” hypothetical review by modeling a 1-hour duration for each pile being removed. Using a rate of five piles removed per day, the resulting Level A harassment isopleths were still smaller than the 20 m shutdown zone the Navy plans to implement. Further information on durations can be found in the Compendium (NAVFAC SW, 2020).

All inputs used in the User Spreadsheet are reported below in Table 4.

**Table 4-- Project Sound Source Levels and User Spreadsheet Inputs**

Activity <sup>3</sup>	Type of Source	Source Level (dB RMS) <sup>1</sup>	Duration of sound production (Hours) <sup>2</sup>	Transmission loss coefficient
Vibratory pile driving	Stationary source, non-impulsive, continuous	152	0.1667	15

13-inch polycarbonate pile removal	Stationary source, non-impulsive, continuous	154	0.42	11.7
16-inch concrete pile removal	Stationary source, non-impulsive, continuous	147	0.42	15
16-inch concrete pile clipping with +3dB adjustment for two simultaneous pile clippers	Stationary source, non-impulsive, continuous	150	0.42	15
16-inch concrete pile removal using hydraulic chainsaw (underwater chainsaw)	Stationary source, non-impulsive, continuous	150	0.83	15
Wire saw for caisson cutting	Stationary source, non-impulsive, continuous	156	1.7	15

<sup>1</sup> - All of these sound source data for use in the Level A and B harassment threshold modeling were calculated from acoustic data found in the 2020 San Diego Noise Compendium (NAVFAC SW, 2020); the only exception is the vibratory hammer source level which was sourced from the City of Seattle Pier 62 Project (Greenbusch Group, 2018).

<sup>2</sup> - The User Spreadsheet inputs assumed 5 piles will be removed within a single 24-hour period using data from the Navy's Compendium (NAVFAC SW, 2020).

<sup>3</sup> - All activities utilized a weighting factor adjustment (kHz) of 2.5.

For this project, we modeled sound propagation using the practical spreading value of 15 for transmission loss for all pile removal methods, except for the removal of the 13-inch polycarbonate piles. For this, 11.7 was used as the transmission loss coefficient as this value was a calculated measure from recorded data that was fit with a logarithmic trendline during the clipping of a 13-inch round concrete pile using small pile clippers in February 2017 at the old Fuel Pier (NAVFAC SW, 2020). The above input scenarios lead to PTS isopleth distances (Level A harassment thresholds) of less than 1 meter for all methods and piles (Table 5).

**Table 5-- Modeled and Expected Level A and B Harassment Isopleths (Using Two Methods) For the Pile Type and Removal Method (Meters)**

Pile Information	Removal Method	(A)	(B)
		Projected Distances to Level A Harassment Isopleth <sup>3</sup>	Projected Distances to Level B Harassment Isopleth <sup>5</sup>

		MF	PW	OW	Practical Spreading Loss model	Real-time data
13-inch polycarbonate pile	One pile clipper	0.0	0.0	0.0	423 <sup>5</sup>	350
14-inch, 16-inch concrete piles	One pile clipper	0.0	0.0	0.0	145	250 <sup>5</sup>
14-inch, 16-inch concrete pile <sup>1</sup>	Two pile clippers	0.0	0.0	0.0	229	250 <sup>5</sup>
14-inch, 16-inch concrete pile	Underwater chainsaw	0.0	0.1	0.0	229 <sup>5</sup>	45
14-inch, 16-inch concrete pile	Diamond wire saw	0.1	0.7	0.0	575 <sup>5</sup>	350
14-inch, 16-inch concrete pile	Vibratory hammer	0.1	0.9	0.1	311 <sup>5</sup>	— <sup>4</sup>

MF = mid-frequency cetaceans, PW = phocid pinnipeds, OW = otariid pinnipeds

<sup>1</sup> - The Navy added an adjustment of +3 dB to the noise of a single pile clipper (147 dB RMS re 1 $\mu$ Pa) and increased to 150 dB RMS re 1 $\mu$ Pa where two clippers are used simultaneously (Kinsler et al., 2000). This adjustment is consistent with NMFS guidance for simultaneous sound sources.

<sup>2</sup> - All sound sources were taken from the Compendium of Underwater and Airborne Sound Data during Pile Installation and In-Water Demolition Activities in San Diego Bay, California (San Diego Noise Compendium; NAVFAC SW, 2020), with exception of the vibratory hammer which was sourced from the City of Seattle Pier 62 Project (Greenbusch Group, 2018).

<sup>3</sup> - Because of the small sizes of the Level A harassment isopleths (as determined by NMFS's User Spreadsheet Tool) and the mitigation methods implemented during this project, neither NMFS nor the Navy expects Level A harassment (and, therefore, take) to occur.

<sup>4</sup> - No information available.

<sup>5</sup> - Designate the most conservative isopleths NMFS will use for the subsequent Level B take analyses and Level B harassment impact zones.

### *Level B Harassment Zones*

Transmission loss (TL) is the decrease in acoustic intensity as an acoustic pressure wave propagates out from a source. TL parameters vary with frequency, temperature, sea conditions, current, source and receiver depth, water depth, water chemistry, and bottom composition and topography. The general formula for underwater TL is:

$$TL = B * \text{Log}_{10} (R1/R2),$$

where

TL = transmission loss in dB

B = transmission loss coefficient; for practical spreading equals 15

R1 = the distance of the modeled SPL from the driven pile, and

R2 = the distance from the driven pile of the initial measurement

The recommended TL coefficient for most nearshore environments is the practical spreading value of 15. This value results in an expected propagation environment that would lie between spherical and cylindrical spreading loss conditions, which is the most appropriate assumption for the Navy's activity in the absence of specific modeling. We used the Navy's realistic, site-specific averaged median ambient noise measurement of 129.6 dB RMS re 1  $\mu$ Pa for the Level B harassment threshold in San Diego Bay (NAVFAC SW, 2020). It should be noted that based on the bathymetry and geography of San Diego Bay, sound will not reach the full distance of the Level B harassment isopleths in all directions.

To determine the most appropriate and conservative Level B harassment isopleths, we compared two methods and selected the isopleth between each method that was largest, thus providing the greatest coverage for the Level B harassment zone. Level B harassment isopleths were considered appropriate based on the distance where the source level reached the 129.6 dB ambient value. The two methods compared the empirical data provided in the Navy's Compendium for work at Naval Base Point Loma (NAVFAC SW, 2020) with the Practical Spreading Loss model using a transmission loss coefficient of 15, as described above. Results of each method are shown in Table 5 and described below.

For the Compendium method, the average and maximum sound levels (in dB re 1  $\mu$ Pa) measured at the source (10 m) and then at various far-field distances typically showed a monotonic decline in average and maximum sound pressure levels distance increased. The Navy chose to use the average values for two main reasons: 1) consistency

with using the average median (L50) ambient values; and 2) average source values were used for the same activities in the Pier 6 project nearby (86 FR 7993, February 3, 2021). However, some level of variability in the recorded sound pressure levels was present where noise levels will drop to ambient levels and then increase to higher levels at greater distances. An example of this will be measurements for the 84-inch caisson removal by a single wire saw. At source (10 m), the average and maximum source levels exceeded the ambient noise levels for both measurements at the source (136.1 and 141.4 dB re 1  $\mu$ Pa; 140.9 and 146.5 dB re 1  $\mu$ Pa, respectively). At far-field distances (>20 m), the averages show variability with a gradual decline and then a subsequent increase, *i.e.*, 140.8 dB re 1  $\mu$ Pa at 20 m and 134.8 at 40 m, then 137.1 dB re 1  $\mu$ Pa at 60 m. The distance where sound was measured ends at 283 m from the source with an average level of 130.3 dB re 1  $\mu$ Pa and a maximum level of 137.0 dB re 1  $\mu$ Pa, both in exceedance of the ambient level. These instances could be attributed to the presence of vessel traffic at distance from the acoustic recorder, causing some interference or competing background noise to the pure sound measurements of the wire saw or to random variation from other acoustic effects related to the specific location of the hydrophone. In any event, the distance at which the sound declined below ambient was not always entirely clear and the Navy was unable to develop a consistent criterion to determine the likely distance at which sound decreased below ambient or to account for factors like the topography or hydrophone location. Therefore we describe the analysis of the Navy Compendium's field data for each pile removal method individually below.

For the 13-inch polycarbonate piles with pile clippers the Navy believes that at between 300 and 400 m (984 to 1,312 ft), a majority of the background noise measured is directly related to traffic transiting to/from the Everingham Brothers Bait Company (EBBCO) bait barges which are to the southwest of the project area. Boat traffic for that specific route ranges from small boats to large recreational/commercial fishing vessels

and traffic is nearly constant throughout the day. Because of that, the Navy believes values between those distances will likely be artificially high relative to the transmission loss associated with the project-related activities. Furthermore, in the turning basin the slope rises up from a max depth of 20.12 m (66 ft) to 11.58 m (38 ft) between 200 to 400 m (656.17 to 1,312.34 ft). As is evidenced by the Navy's acoustical model for south-central San Diego Bay (see the Naval Base Point Loma Pier 6 project at <https://www.fisheries.noaa.gov/action/incidental-take-authorization-naval-base-san-diego-pier-6-replacement-project-san-diego>), changes in bathymetry (*i.e.*, channel walls) act as noise attenuators. Therefore, the Navy estimated the Level B harassment isopleth for this source at 350 m, smaller than the Practical Spreading Loss model prediction of 423 m. Given the uncertainty discussed above, we used the 423 m distance for the Level B harassment isopleth.

For the one pile clipper on concrete pile source, the Navy again believes the Compendium data were influenced by boat activity and topography of the channel. In this particular case, Table 39 of the Compendium shows that the average dB level at 215 m was 129.0 dB RMS. However, the two measurements at 309 m were split, one higher and one lower than the value at 215 m. The Navy decided that "Understanding that acoustics is not an "exact science," we evaluated the data and chose a distance (250 m) that fit the data (average noise levels dropped below 129.6 dB at between 215 and 309 m)." As this 250 m distance exceeded the practical spreading loss model distance of 145 m, we chose the 250 m distance for the Level B harassment isopleth.

For the two pile clipper on concrete pile source the Navy decided that "Because the project footprint is parallel to the shoreline, we created a monitoring zone that used a source level of 150 dB, but at two points at the extreme north and south of the project footprint (see Fig 6-3 in the IHA application) because we felt that this would generate a more conservative" zone that led to an estimate of the Level B harassment isopleth of 250

m. As this 250 m distance exceeded the practical spreading loss model distance of 229 m, we chose the 250 m distance for the Level B harassment isopleth.

For the underwater chainsaw the Navy noted the “transmission loss ( $27\log R$ ) was steep when compared to other equipment, but the source value was in line with the pile clippers. Because of the very steep TL value, we looked at the perceived far-field data points for the clipper activities and chose a distance that was in-between the drop off to ambient for the chainsaw (from 26 to 45 m) and the clippers (250 m).” The Navy estimated the Level B harassment isopleth for this source at 45 m, smaller than the Practical Spreading Loss model prediction of 229 m. Given the uncertainty discussed above, we used the 229 m distance for the Level B harassment isopleth.

For the diamond wire saw the Navy again believes the Compendium data were influenced by boat activity and topography of the channel. The available data are from caissons which consist of 1.5 inch thick hardened steel shells filled with concrete, and with wooden piles in the center of the concrete. For lack of information on wire saws, the Navy evaluated the likely far-field values for the potential zones based on the 84-inch caissons (Table 34 in the Compendium), which had more data at multiple distances. The Navy “felt that this was a valid approach based on the similarity of the average noise data at 40 m (132.5 dB for 66-inch caisson, 134.8 for the 84-inch caisson). Per Table 34, using the average dB values at distance, the data shows a drop below 129.6 dB RMS at 200 m, but a rise again at 283 m. If you plot the regression curve based on the average 84-inch data, we cross the ambient threshold at approximately 350 m... Because the data at far-field distances was variable, we chose a monitoring zone (350 m) that was based on the available real-time data... Our assumption is that, if a wire saw were to be used on the concrete piles, the noise levels would be lower than either the 66- or 84-inch caisson.” The Navy estimated the Level B harassment isopleth for this source at 350 m, smaller

than the Practical Spreading Loss model prediction of 575 m. Given the uncertainty discussed above, we used the 575 m distance for the Level B harassment isopleth.

#### *Marine Mammal Occurrence, Take Calculation, and Take Estimation*

In this section, we provide the information about the presence, density, or group dynamics of marine mammals that will inform the take calculations. Here we describe how the information provided above is brought together to produce a quantitative take estimate.

We examined two approaches towards estimating the Level B take for the requested six marine mammal species within the project area at Naval Base Point Loma. The first approach was using our standard approach of using species density multiplied by isopleth size. The second approach utilized daily sightings from monitoring reports produced from past Navy projects at Naval Base Point Loma (NAVFAC SW, 2015a; NACFAC SW, 2017; NAVFAC SW, 2018).

Density estimates for any specific area assumes that the species' in question are evenly distributed across the entire site, which is rarely the case. Using the first approach for this project, we examined the use of densities, using an overall density for San Diego Bay, within a much smaller and definitive area (specifically Naval Base Point Loma). This approach, in combination with the predicted Level B harassment isopleths, yielded take estimates that were determined to not be conservative enough in nature for these activities and activity source levels as compared to the results of the in situ measurements included in the Navy's Compendium (NAVFAC SW, 2020) and as discussed above. Furthermore, the take estimates produced from this method did not appropriately account for group size of all marine mammal species as the density estimate was for a much larger area (consisting of a primarily offshore environment) and assumed a much larger distribution of marine mammals. Therefore, this approach was not utilized and will not be discussed further.

The second approach utilized average daily sightings from the Year 1-5 monitoring reports from IHAs that were previously issued (NAVFAC SW, 2015a; NACFAC SW, 2017; NAVFAC SW, 2018). This information was provided by the Navy in Table 6.

**Table 6-- Monitoring Results from the Navy's Years 1-5 Projects at Naval Base Point Loma in San Diego, California**

Species	Year 1 Project (10 days; potential El Niño year)			Year 2 Project (100 days; El Niño year)			Year 3 Project (59 days)			Year 4 Project (152 days)			Year 5 Project (49 days)		
	<i>Total</i>	<i>Average/Day</i>	<i>Average Group Size</i>	<i>Total</i>	<i>Average/Day</i>	<i>Average Group Size</i>	<i>Total</i>	<i>Average/Day</i>	<i>Average Group Size</i>	<i>Total</i>	<i>Average/Day</i>	<i>Average Group Size</i>	<i>Total</i>	<i>Average/Day</i>	<i>Average Group Size</i>
California sea lions	2,229	229.9	2.2	7,507	75.1	1.4	483	8.2	1.3	2,263	14.9*	1.7	618	12.6	1.3
Harbor seal	25	2.5	1.1	248	2.5	1.0	25	0.4	1.0	88	0.6*	1.1	28	0.6	1.0
Bottlenose dolphins	83	8.3	2.4	695	7.0	2.8	25	0.4	1.9	67	0.4*	2.7	13	0.3	2.2
Common dolphins	19	19	6.3	850	8.5*	42.5 <sup>2</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pacific white-sided dolphins	n/a	n/a	n/a	27	0.3*	3.9	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Northern elephant seals	n/a	n/a	n/a	-1	-1	-1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

\* – These estimates were chosen for the second method in which to estimate take of marine mammals for this action.

1 – Same individuals was observed hauled out on a beach twice.

2 – This includes four sightings of groups of 100+ animals outside of San Diego Bay. When these observations are eliminated, the average group size is 6.75 animals observed inside of San Diego Bay.

The Year 1 and 2 monitoring reports demonstrated marine mammal estimates during a potential and known El Niño year, respectively. Because of this, these values were likely not representative of the typical conditions around Naval Base Point Loma and were not preferred.

California sea lions, harbor seals, and bottlenose dolphins were recorded during all other years. Within these, Year 4 was considered the most conservative as these activities consisted of the longest duration (152 days) with the highest number of sightings for these species. Therefore, for these species we used the Year 4 average daily values.

Pacific white-sided dolphins were only recorded during Year 2. While these estimates are likely not fully representative of the typical distributions of Pacific white-sided dolphins around San Diego Bay, they will serve as the basis for our conservative take estimates for this species. Common dolphins were observed in Years 1 and 2; however, the length of the project period in Year 2 (100 days) was considered more representative than the Year 1 project (10 days). Therefore, the values from the Year 2 estimates were used for common dolphins. A single Northern elephant seal was only recorded to have hauled out on a beach twice during all Year 1-5 work. Due to this, no average daily estimates were present for analysis; however, some discretionary take is authorized in the event Northern elephant seals are present during this action.

For all species (excluding Northern elephant seals), these daily sightings were extrapolated over the number of days of pile removal activities (84).

This second approach yielded larger and more conservative Level B take estimates, but more realistic for particular species occurrence and group size given the data was previously collected at the location of this project for similar or the same species during past projects. Here we describe how the information provided above is brought together to produce a quantitative take estimate.

By following this daily occurrence-based approach using past sightings at Naval Base Point Loma, we will expect that 15 California sea lions, 1 harbor seal, 9 common dolphins, 1 Pacific white-sided dolphin, and 1 bottlenose dolphin will be sighted per day. Multiplication of the above daily occurrences times the number of pile removal days planned (84) results in the Level B harassment take of 1,260 California sea lions, 84 harbor seals, 756 common dolphins, 84 Pacific white-sided dolphins, and 84 bottlenose dolphins (see Table 7 for final estimates).

The Navy has noted that northern elephant seals are very rarely seen in this area, with the only true record being of a hauled out and distressed juvenile during the Year 2 IHA (NAVFAC SW, 2015a). As a precaution that a greater number of northern elephant seal may occur around Naval Base Point Loma, we authorize seven Level B takes.

**Table 7-- Estimated Take Using the Past Sighting Approach For Each Species and Stock During the Project**

Common name	Scientific name	Stock	Estimated sightings per day	Total Level B take requested <sup>2</sup>	Data source	Percent of stock
California sea lion	<i>Zalophus californianus</i>	U.S. Stock	15	1,260	NAVFAC SW (2017, 2018)	0.49
Harbor seal	<i>Phoca vitulina</i>	California Stock	1	84	NAVFAC SW (2017, 2018)	0.27
Northern elephant seal	<i>Mirounga angustirostris</i>	California Breeding Stock	-	7 <sup>1</sup>	NAVFAC SW (2015a)	0.00
Common dolphins (Short-beaked, long-beaked)	<i>Delphinus sp.</i> <sup>3</sup>	California/Oregon/Washington Stock; California Stock	9	756 (between both species)	NAVFAC SW (2015a)	0.08 per SBCD stock; 0.31 per

						LBCD stock
Pacific white-sided dolphin	<i>Lagenorhynchus obliquidens</i>	California/Oregon/Washington – Northern and Southern Stocks	1	84	NAVFAC SW (2015a)	0.31
Bottlenose dolphin	<i>Tursiops truncatus</i>	California Coastal Stock	1	84	NAVFAC SW (2017, 2018)	18.54

<sup>1</sup> - Only recently documented near the project occurrence with one distressed individual hauled out on a beach inshore to the south during the second year of the previous Fuel Pier IHA (NAVFAC SW, 2015a). A conservative estimate of 2 was assumed with a +5 take buffer added.

<sup>2</sup> - These numbers were derived by multiplying the rounded average daily sightings by 84 days and then summed for the total requested Level B harassment take.

<sup>3</sup> – See discussion in the section on Common Dolphins (Short-beaked and Long-beaked) regarding the Society for Marine Mammalogy's Committee on Taxonomy decision (Committee on Taxonomy, 2020).

By using the sighting-based approach, take values are not affected by the chosen isopleth sizes from Table 5.

Given the very small Level A harassment isopleths for all species, no take by Level A harassment is anticipated or authorized.

### **Mitigation**

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for certain subsistence uses (latter not applicable for this action). NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

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

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

(2) The practicability of the measures for applicant implementation, which may consider such things as cost, impact on operations, and, in the case of a military readiness activity, personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

The following mitigation measures are included in the IHA:

- All pile removal activities will occur individually, with the exception for the removal of the 14-inch and 16-inch concrete piles, which may be removed simultaneously by use of the pile clippers;
- A 20 m (66-ft) shutdown zone will be implemented around all pile removal activities (Table 8). If a marine mammal enters the shutdown zones, pile removal activities must be delayed or halted;
- Two Protected Species Observers (PSOs) will be employed and establish monitoring locations. The Holder must establish monitoring locations as described in the Monitoring Plan. For all pile removal activities, a minimum of one PSO must be assigned to each active pile removal location to monitor the shutdown zones. PSO(s) must be able to monitor the entire shutdown zone and the entire Level B harassment zone, or out to at

least 400 m of the radial distance of the larger Level B harassment zones towards the Navigation Channel. In the event of concurrent pile removal (*i.e.*, via two pile clippers) at two different locations that cannot be appropriately monitored by one PSO, the pier or location where the lead PSO is stationed being blocked by a refueling vessel or other obstruction, multiple PSOs may be necessary to monitor the necessary shutdown and Level B harassment zones;

- If pile removal activities have been halted or delayed due to the presence of a species in the shutdown zone, activities may commence only after the animal has been visually sighted to have voluntarily exited the shutdown zone, or after 15 minutes have passed without a re-detection of the animal;

- If the take reaches the authorized limit for an authorized species, or if a marine mammal species that is not authorized for this project enters the Level B harassment zone, pile removal will cease until consultation with NMFS can occur. If in-water pile removal activities are occurring when a non-authorized species enters the Level B harassment zone, activities must shutdown;

- The placement of the PSOs during all pile removal activities will ensure that the entire shutdown zone is visible. Should environmental conditions deteriorate such that marine mammals within the entire shutdown zone will not be visible (*e.g.*, fog, heavy rain), pile removal must be delayed until the lead PSO is confident that marine mammals within the shutdown could be detected;

- PSOs must record all observations of marine mammals as described in the Monitoring Plan, regardless of distance from the pile being driven. PSOs shall document any behavioral reactions in concert with distance from piles being driven or removed;

- The marine mammal monitoring reports must contain the informational elements described in the Monitoring Plan;

- A draft marine mammal monitoring report, and PSO datasheets and/or raw sighting data, must be submitted to NMFS within 90 calendar days after the completion of pile driving activities. If no comments are received from NMFS within 30 calendar days, the draft report will constitute the final report. If comments are received, a final report addressing NMFS comments must be submitted within 30 calendar days after receipt of comments; and

- In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the IHA-holder must immediately cease the specified activities and report the incident to the Office of Protected Resources (OPR) (*PR.ITP.MonitoringReports@noaa.gov* and *ITP.Potlock@noaa.gov*), NMFS and to the West Coast Regional Stranding Coordinator as soon as feasible.

**Table 8-- Shutdown and Harassment Zones (Meters)**

Pile Information	Removal Method	Harassment Zone	Shutdown Zone <sup>1</sup>
13-inch polycarbonate pile	One pile clipper	423	20
14-inch, 16-inch concrete piles	One pile clipper	250	
14-inch, 16-inch concrete pile	Two pile clippers	250	
14-inch, 16-inch concrete pile	Underwater chainsaw	229	
14-inch, 16-inch concrete pile	Diamond wire saw	575	
14-inch, 16-inch concrete pile	Vibratory hammer	311	

<sup>1</sup> – The shutdown zone is the same for all mid-frequency cetaceans, phocid pinnipeds, and otariid pinnipeds.

### **Monitoring and Reporting**

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

to be present in the action area. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

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

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

### *Visual Monitoring*

Marine mammal monitoring must be conducted in accordance with the submitted Monitoring Plan and the **Mitigation** and the **Monitoring and Reporting** sections of the IHA. Marine mammal monitoring during pile driving and removal must be conducted by NMFS-approved PSOs in a manner consistent with the following:

- Independent PSOs (*i.e.*, not construction personnel) who have no other assigned tasks during monitoring periods must be used;
- At least one PSO must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization.
- Other PSOs may substitute education (degree in biological science or related field) or training for experience;
- Where a team of two or more PSOs are required, one PSO will be designated as the “Command”, or lead PSO, and will coordinate all monitoring efforts. The lead PSO must have prior experience performing the duties of an observer;
- In the event of concurrent pile removal activities, two lead PSOs may be designated and will coordinate and communicate all monitoring efforts if a single observer cannot observe the two concurrent activities. Each position will act independently and both will maintain the ability to call for a shutdown. Each lead PSOs will communicate to the other of a potential sighting of a marine protected species traveling from one location to the other within the appropriate shutdown and Level B zones during concurrent pile removal activities.
- The Navy must submit PSO Curriculum Vitae (CV) for approval by NMFS prior to the onset of pile driving.

PSOs must have the following additional qualifications:

- Ability to conduct field observations and collect data according to assigned protocols;
- Experience or training in the field identification of marine mammals, including the identification of behaviors;
- Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;

- Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates, times, and reason for implementation of mitigation (or why mitigation was not implemented when required); and marine mammal behavior; and
- Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

Up to two PSOs will be employed. PSO locations will provide an unobstructed view of all water within the shutdown zone, and as much of the Level A and Level B harassment zones as possible. PSO locations have been discussed above. An additional monitoring location is described as follows:

(1) An additional monitoring location on the Fuel Pier trestle or on a captained vessel may be utilized for pre-activity monitoring if the monitoring zone is beyond the visual range of the lead PSO's position. This vessel will start south of the Project area (where potential marine mammal occurrence is lowest) before the pile removal activity has begun and move north.

Monitoring will be conducted 30 minutes before, during, and 30 minutes after pile removal activities. In addition, observers shall record all incidents of marine mammal occurrence, regardless of distance from activity and distance from the buffered shutdown zone and Level B harassment isopleth, and shall document any behavioral reactions in concert with distance from piles being removed.

#### *Hydroacoustic Monitoring and Reporting*

The Navy has indicated in their application that they may perform hydroacoustic monitoring on any removal method and sound source that was not previously recorded and included in the *Compendium of Underwater and Airborne Sound Data during Pile*

*Installation and In-Water Demolition Activities in San Diego Bay, California* (NAVFAC SW, 2020). However, as data from the Compendium (for pile clippers, wire saw, and underwater chainsaw) and the City of Seattle Pier 62 project (for the vibratory hammer; Greenbusch Group, 2018) are recent, it is unlikely that hydroacoustic monitoring will occur during this project.

### *Reporting*

A draft marine mammal monitoring and acoustic measurement report will be submitted to NMFS within 90 calendar days after the completion of these activities, or 60 days prior to a requested date or issuance of any future IHAs for projects at the same location, whichever comes first. The report will include an overall description of work completed, a narrative regarding marine mammal sightings, and associated PSO data sheets. Specifically, the report must include:

- Dates and times (begin and end) of all marine mammal monitoring;
- Construction activities occurring during each daily observation period, including how many and what type of piles were removed and by what method (*i.e.*, vibratory and if other removal methods were used);
- Weather parameters and water conditions during each monitoring period (*e.g.*, wind speed, percent cover, visibility, sea state);
- The number of marine mammals observed, by species, relative to the pile location and if pile removal was occurring at time of sighting;
- Age and sex class, if possible, of all marine mammals observed;
- PSO locations during marine mammal monitoring;
- Distances and bearings of each marine mammal observed to the pile being driven or removed for each sighting (if pile removal was occurring at time of sighting);

- Description of any marine mammal behavior patterns during observation, including direction of travel and estimated time spent within the Level A and Level B harassment zones while the source was active;
- Number of individuals of each species (differentiated by month as appropriate) detected within the monitoring zone, and estimates of number of marine mammals taken, by species (a correction factor may be applied to total take numbers, as appropriate);
- Detailed information about any implementation of any mitigation triggered (*e.g.*, shutdowns and delays), a description of specific actions that ensued, and resulting behavior of the animal, if any;
- Description of attempts to distinguish between the number of individual animals taken and the number of incidences of take, such as ability to track groups or individuals; and
- Submit all PSO datasheets and/or raw sighting data (in a separate file from the Final Report referenced immediately above).

If no comments are received from NMFS within 30 days, the draft final report will constitute the final report. If comments are received, a final report addressing NMFS comments must be submitted within 30 days after receipt of comments.

#### *Reporting Injured or Dead Marine Mammals*

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is relatively recent (*i.e.*, in less than a moderate state of decomposition), the lead PSO will report to the Navy POC. The Navy POC shall then report the incident to the Office of Protected Resources (OPR), NMFS and to the regional stranding coordinator as soon as feasible. If the death or injury was clearly caused by the specified activity, the Navy must immediately cease the specified activities until NMFS

is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of the IHA. The IHA-holder must not resume their activities until notified by NMFS. The report must include the following information

- Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
- Species identification (if known) or description of the animal(s) involved;
- Condition of the animal(s) (including carcass condition if the animal is dead);
- Observed behaviors of the animal(s), if alive;
- Description of marine mammals observation in the 24-hours preceding the incident;
- If available, photographs or video footage of the animal(s); and
- General circumstances under which the animal was discovered.

### **Negligible Impact Analysis and Determination**

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be “taken” through harassment, NMFS considers other factors, such as the likely nature of any responses (*e.g.*, intensity, duration), the context of any responses (*e.g.*, critical reproductive time or location, migration), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and

context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS's implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the environmental baseline (*e.g.*, as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

Level A harassment is extremely unlikely given the small size of the Level A harassment isopleths and the required mitigation measures designed to minimize the possibility of injury to marine mammals. No mortality is anticipated given the nature of the activity.

Pile removal activities have the potential to disturb or displace marine mammals. Specifically, the project activities may result in take, in the form of Level B harassment only from underwater sounds generated from pile cutting and removal activities. Takes could occur if individuals are present in the ensonified zones when these activities are underway. The potential for harassment is minimized through the construction method and the implementation of the planned mitigation measures (see **Mitigation** and the **Monitoring and Reporting** sections).

Take would occur within a limited, confined area (mouth of San Diego Bay) of each stock's range. Level B harassment would be reduced to the level of least practicable adverse impact through use of mitigation measures described herein. Further, the amount of take authorized is extremely small, except for bottlenose dolphins, when compared to stock abundance.

Behavioral responses of marine mammals to pile removal at the project site, if any, are expected to be mild and temporary. Marine mammals within the Level B harassment zone may not show any visual cues they are disturbed by activities (as noted during modification to the Kodiak Ferry Dock (ABR, 2016; see 80 FR 60636, October 7,

2015)) or could become alert, avoid the area, leave the area, or display other mild responses that are not observable such as changes in vocalization patterns. Given the short duration of noise-generating activities per day and that pile removal would occur across six months, any harassment would be temporary. There are no areas or times of known biological importance for any of the affected species.

In combination, we believe that these factors, as well as the available body of evidence from other similar activities, demonstrate that the potential effects of the specified activities would have only minor, short-term effects on individuals. The specified activities are not expected to impact reproduction or survival of any individual marine mammals, much less affect rates of recruitment or survival and would therefore not result in population-level impacts.

In summary and as described above, the following factors primarily support our determination that the impacts resulting from this activity are not expected to adversely affect the species or stock through effects on annual rates of recruitment or survival:

- No mortality or Level A harassment is anticipated or authorized;
- No biologically important areas have been identified with the project area;
- The Navy is required to implement mitigation measures to minimize impacts, such as PSO observation and a shutdown zone of 20 m (66 ft);
- For all species, San Diego Bay is a very small and peripheral part of their range; and
- Monitoring reports from similar work in San Diego Bay have documented little to no effect on individuals of the same species impacted by the specified activities.

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 monitoring and mitigation measures, NMFS finds that the total

marine mammal take from the activity would have a negligible impact on all affected marine mammal species or stocks.

### **Small Numbers**

As noted above, only small numbers of incidental take may be authorized under sections 101(a)(5)(A) and (D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the 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. When the predicted number of individuals to be taken is fewer than one third of the species or stock abundance, the take is considered to be of small numbers. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

The amount of take NMFS proposes to authorize is below one third of the estimated stock abundances for all six species (Table 7). For most requested species, the take of individuals is less than 1 percent of the abundance of the affected stock (with exception for common bottlenose dolphins at 18.54 percent). This is likely a conservative estimate because it assumes all take are of different individual animals, which is likely not the case. Some individuals may return multiple times in a day, but PSOs would count them as separate takes if they cannot be individually identified.

Based on the analysis contained herein of the Navy's activity (including the **Mitigation** and the **Monitoring and Reporting** sections) and the anticipated take of marine mammals, NMFS finds that small numbers of marine mammals would be taken relative to the population size of the affected species or stocks.

### **Unmitigable Adverse Impact Analysis and Determination**

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

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

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

No incidental take of ESA-listed species is authorized or expected to result from this activity. Therefore, NMFS has determined that formal consultation under section 7 of the ESA is not required for this action.

### **National Environmental Policy Act (NEPA)**

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 review our action (*i.e.*, the issuance of an IHA) with respect to potential impacts on the human environment.

This action is consistent with categories of activities identified in Categorical Exclusion B4 (IHAs with no anticipated serious injury or mortality) of the Companion Manual for NOAA Administrative Order 216-6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that will preclude this categorical exclusion. Accordingly, NMFS has determined that the issuance of the IHA qualifies to be categorically excluded from further NEPA review.

## **Authorization**

NMFS has issued an IHA to the Navy for the potential harassment of small numbers of six marine mammal species incidental to the pile removal activities at Naval Base Point Loma in San Diego Bay, California from January 15, 2022 through January 14, 2023, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated.

Dated: August 27, 2021.

**Catherine Marzin,**

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*National Marine Fisheries Service.*

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