DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XF801]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the U.S. Army Corps of Engineers Bonneville Lock 1 Bridge Replacement Project on the Columbia River in Oregon.

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

ACTION: Notice; proposed incidental harassment authorizations; request for comments on proposed authorizations and possible renewals.

SUMMARY: NMFS has received a request from U.S. Army Corps of Engineers (USACE) for authorization to take marine mammals incidental to 2 years of construction activities associated with the Bonneville Lock 1 Bridge Replacement (BLBR) Project on the Columbia River in Oregon. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue two consecutive incidental harassment authorizations (IHAs) to incidentally take marine mammals during the specified activities. NMFS is also requesting comments on possible one-time, 1-year renewals that could be issued under certain circumstances and if all requirements are met, as described in Request for Public Comments at the end of this notice. NMFS will consider public comments prior to making any final decision on the issuance of the requested MMPA authorizations.

DATES: Comments and information must be received no later than July 27, 2026.

ADDRESSES: Comments should be addressed to the Permits and Conservation Division, Office of Protected Resources, NMFS and should be submitted via email to *ITP.demarest@noaa.gov.* 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/permit/incidental-take-authorizations-under-marine-mammal-protection-act/incidental-take-authorizations-construction-activities.* In case of problems accessing these documents, please call the contact listed below.

Instructions: NMFS is not responsible for comments sent by any other method, to any other address or individual, or received after the end of the comment period. Comments, including all attachments, must not exceed a 25-megabyte file size. All comments received are a part of the public record and will generally be posted online at *https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act* without change. All personal identifying information (*e.g.,* name, address) voluntarily submitted by the commenter may be publicly accessible. Do not submit confidential business information or otherwise sensitive or protected information.

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

SUPPLEMENTARY INFORMATION:

Background

The MMPA prohibits the ''take'' of marine mammals, with certain exceptions. Section 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) directs 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 proposed or, if the taking is limited to harassment, a notice of a proposed IHA is 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). If such findings are made, NMFS must prescribe the permissible methods of taking; 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 as ''mitigation''); and requirements pertaining to the monitoring and reporting of the takings. The definitions of all applicable MMPA statutory terms used above are included in the relevant sections below (see also 16 U.S.C. 1362; 50 CFR 216.3, 216.103).

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 review our proposed 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 NAO 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 would preclude this categorical exclusion. Accordingly, NMFS has preliminarily determined that the issuance of the proposed IHAs qualifies to be categorically excluded from further NEPA review.

We will review all comments submitted in response to this notice prior to concluding our NEPA process or making a final decision on the IHA requests.

Summary of Request

On May 12, 2025, NMFS received a request from USACE for two consecutive IHAs to take marine mammals incidental to pile driving (installation and removal) associated with construction to replace the Bonneville Lock 1 Bridge on the Columbia River in Oregon. Following NMFS' review of the application, USACE submitted multiple revised versions on February 20, March 11, April 30, and May 27, 2026, with the final version submitted on May 29, 2026. The application was deemed adequate and complete on June 2, 2026. For the first year of construction activities (Year 1), USACE's request is for take of California sea lions, Steller sea lions, and harbor seals by Level A and Level B harassment. For the second year of construction activities (Year 2), USACE's request is for take of California sea lions, Steller sea lions, and harbor seals by Level B harassment only. Neither USACE nor NMFS expect serious injury or mortality to result from this either year of activities and, therefore, IHAs are appropriate.

Description of Proposed Activity

Overview

The USACE proposes replacing the Bonneville Lock 1 Bridge at the Eastern boundary of the Lower Columbia River (LCR) at river mile (RM) 145. The USACE identified that the existing bridge has structural, geotechnical, and operational concerns in a recent Major Maintenance Report. Replacement of the bridge would resolve current structural

issues and provide greater clearance for vessels that routinely transit through the area in the Federal Navigation Channel (FNC). The BLBR project will be completed over 2 years from December 1, 2027, and continue through November 30, 2029. Year 1 construction is currently scheduled to begin December 1, 2027, and continue through November 30, 2028. Year 1 activities would require anchoring two barges below the current structure with steel piles, constructing a cofferdam with steel sheet piles and pipe piles, installing bored ground anchors, and pouring a concrete foundation within the cofferdam to construct a shoring tower. Demolition of the existing bridge is anticipated to occur during Year 1 and would not involve pile driving or removal activities. Year 2 construction would begin after year 1 construction and demolition of the existing bridge is complete. Construction activities for Year 2 would involve removing the steel sheet and pipe piles for the cofferdam and then removing the piles anchoring the barge. Activities for the BLBR Project that have the potential to result in Level A harassment and Level B harassment or marine mammals from underwater sound production include impact and vibratory pile installation and vibratory pile removal.

Dates and Duration

The USACE anticipates that the BLBR Project will occur over 2 years. The Year 1 proposed IHA would be valid for the statutory maximum of 1 year and would be effective from December 1, 2027, through November 30, 2028. The Year 2 proposed IHA would be valid for the statutory maximum of 1 year from the date of effectiveness, but not beginning later than 1 year from the date of expiration of the Year 1 IHA. Year 1 activities are expected to occur over 8 non-consecutive days between December 2027 and February 2028. Year 2 activities would occur over 8 non-consecutive days and are expected to occur between December 2028 and February 2029, as long as Year 1 construction activities are not delayed. In-water work for each year would occur for up to 10 hours per day, during daylight hours.

Specific Geographic Region

The LCR flows 146 miles (mi) or 235 kilometers (km) from Bonneville Dam to the Pacific Ocean. This reach of the river features a deep-draft shipping channel supporting major ports and connects major cities and towns in Oregon to the Pacific Ocean. The LCR serves as an important migratory corridor for salmonids, sturgeon, and eulachon (*Thaleichthys pacificus*) as they transition freshwater and marine life stages, while providing foraging opportunities for pinnipeds and other wildlife.

The Bonneville Lock 1 Bridge spans the FNC, is located at RM 145 in the LCR, and is approximately 40 mi or 64 km east of Portland, Oregon (figure 1). The BLBR Project construction area is situated directly downstream from the Lower Bonneville Lock and Dam, and experiences frequent recreational and commercial vessel traffic, which all contribute to the in-air and underwater acoustic environment.

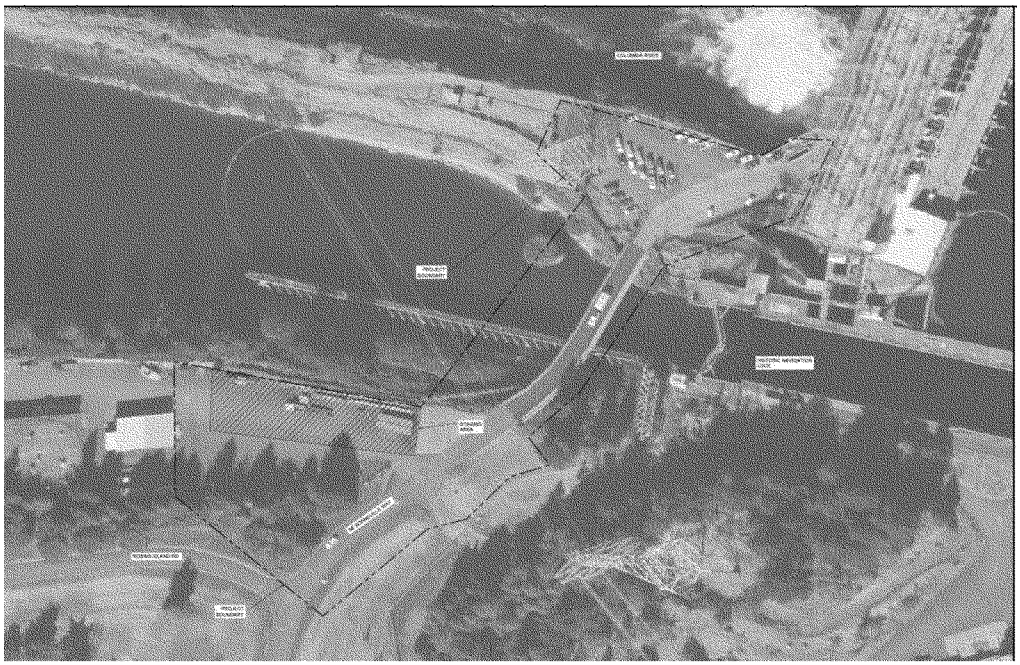

Figure 1 -- USACE Bonneville Lock 1 Bridge Project Site Map

Figure 1—USACE Bonneville Lock 1 Bridge Project Site Map

Detailed Description of the Specified Activity

The BLBR Project is required to increase clearance for larger commercial vessels transiting the lock system and to address structural and geotechnical concerns. The existing swing bridge was constructed in 1932 and last modified in 1950; it will be replaced by a single-span steel girder bridge with a concrete deck.

Year 1 of BLBR Project would involve:

1. *Barge Anchoring:* Anchoring two barges with eight steel pipe piles as a staging area for crane and steel girder deployment;

2. *Cofferdam Construction:* Constructing a cofferdam with 50 steel sheet piles and 8 steel pipe piles;

3. *Shoring Tower Foundation:* Dewatering of the cofferdam and pouring of a concrete pad as a foundation constructing a temporary steel shoring tower;

4. *Ground Anchors:* Boring two land-based shafts for two ground anchors; and

5. *Demolition:* Demolishing the existing bridge.

For Year 1 construction for the BLBR Project, barge anchoring would involve the installation of eight 24-inch steel pipe piles. Construction of the cofferdam would involve the installation of 50 24-inch sheet piles and 8 14-inch steel pipe piles. All piles for barge anchoring and cofferdam construction would initially be driven with a vibratory hammer to the point of refusal, then seated into the substrate with an impact hammer. All pile installation activities are expected to occur over eight non-consecutive days (table 2). Activities 3, 4, and 5 do not produce sound characteristics likely to result in marine mammal harassment and are not discussed further. Activities 1 and 2 involve pile installation with vibratory and impact hammers, and sound produced from these activities has the potential to result in incidental take of marine mammals by Level A and Level B harassment.

Year 2 of the BLBR Project would involve:

1. Removing the 50 steel sheet and 8 steel pipe cofferdam piles after bridge demolition is complete; and

2. Removing the eight steel pipe piles used for barge anchoring.

Year 2 construction activities for the BLBR Project will involve the removal of 50 24-inch steel sheet piles, 8 14-inch steel pipe piles, and the 8 24-inch steel pipe piles installed during Year 1 construction activities. All piles for Year 2 construction will be removed with a vibratory hammer after Year 1 construction and bridge demolition is complete. The underwater sound produced from pile extraction has the potential to result in incidental take of marine mammals by Level B harassment only.

Both Year 1 and Year 2 in-water pile driving and removal activities will be restricted to the months of December through February due to USACE's consultation requirements related to Endangered Species Act (ESA)-listed fish species. Marine mammal abundance is also lower in the project area during this seasonal in-water work window.

TABLE 1—YEAR 1 PILE INSTALLATION SUMMARY FOR THE BLBR PROJECT

Component	Pile size, material, and method	Number of piles	Time/pile (minutes) or strikes/pile [a]	Max piles/day	Construction days
Barge Anchoring	24-inch steel pipe piles, vibratory	8	6	8	2
	24-inch steel pipe piles, impact		125	8	
Cofferdam	14-inch steel pipe piles, vibratory	8	6	8	2
	14-inch steel pipe piles, impact		125	8	
	24-inch sheet piles, Vibratory	50	6	25	4
	24-inch sheet piles, Impact		125	25	

[a] Time applies to vibratory pile driving and strikes/pile applies to impact pile driving.

TABLE 2—YEAR 2 PILE REMOVAL SUMMARY FOR THE BLBR PROJECT

Component	Pile size, material, and method	Number of piles	Time/pile (minutes)	Max piles/day	Construction days
Barge Anchoring	24-inch steel pipe piles, vibratory	8	6	8	2
Cofferdam	14-inch steel pipe piles, vibratory	8	6	8	2
	24-inch sheet piles, Vibratory	50	6	25	4

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

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. NMFS fully considered all of this information, and we refer the reader to these descriptions, instead of reprinting the information. Additional information regarding population trends and threats may be found in NMFS' 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' website (*https://www.fisheries.noaa.gov/find-species*).

Table 3 lists all species or stocks for which take is likely and proposed to be authorized for this activity and summarizes information related to the population or stock, including regulatory status under the MMPA and ESA and potential biological removal (PBR), where known. PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, which may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS' SARs). While no serious injury or mortality is anticipated or proposed to be authorized here, PBR and annual mortality and serious injury (M/SI) from anthropogenic sources are included here as gross indicators of the status of the species or stocks and other threats.

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' 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' U.S. Alaska and Pacific SARs. All values presented in table 3 are the most recent available at the time of publication and are available online at: *https://www.fisheries.noaa.gov/*

national/marine-mammal-protection/marine-mammal-stock-assessments.

TABLE 3—SPECIES, STOCKS, AND THE STATUS OF MARINE MAMMALS [1] WITH ESTIMATED TAKE FROM THE SPECIFIED ACTIVITIES

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N) [2]	Stock abundance (CV, Nmin, most recent abundance survey) [3]	PBR	Annual M/SI [4]
Order Carnivora—Pinnipedia						
Family Otariidae (eared seals and sea lions):						
CA Sea Lion	*Zalophus californianus*	U.S.	-, -, N	257,606 (N/A, 233,515, 2014).	14,011	>321
Steller Sea Lion	*Eumetopias jubatus*	Eastern	-, -, N	36,308 (N/A, 36,308, 2022) [5].	2,178	93.2
Family Phocidae (earless seals):						
Harbor Seal	*Phoca vitulina*	OR/WA Coastal	-, -, N	22,549 (UNK, 19,561, 2022) [6].	UND [7]	10.6

[1] Information on the classification of marine mammal species can be found on the web page for The Society for Marine Mammalogy's Committee on Taxonomy (*https://marinemammalscience.org/science-and-publications/list-marine-mammal-species-subspecies*).

[2] 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.

[3] NMFS marine mammal stock assessment reports online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region.* CV is coefficient of variation; Nmin is the minimum estimate of stock abundance.

[4] 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, 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.

[5] Nest is best estimate of counts, which have not been corrected for animals at sea during abundance surveys. Estimates provided are for the U.S. only.

[6] Most recent SAR does not include an abundance estimate for this stock. These data are for the Washington coast and thus underestimate the size of the OR/WA Coastal stock; estimates are from Pearson *et al.,* 2024.

[7] UND means undetermined.

As indicated above, all three species (with three managed stocks) in table 3 temporally and spatially co-occur with the specified activity to the degree that take is likely to occur. All species that could potentially occur in the proposed project area are included in table 6 of the IHA application. In addition to what was included in sections 3 and 4 of USACE's application, the SARs (*https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*), and NMFS' website, we provide further detail below informing the baseline for species likely to be found in the project area (*e.g.,* information regarding current Unusual Mortality Events and known important habitat areas, such as biologically important areas (BIAs; *https://oceannoise.noaa.gov/biologically-important-areas*) (Calambokidis *et al.,* 2024)).

California Sea Lion

Since the mid-1980s, increasing numbers of California sea lions have been documented feeding on fish along the Washington coast and—more recently—in the LCR as far upstream as Bonneville Dam, at RM 146. However, the total number of California sea lions observed at Bonneville Dam has been in decline, ranging from 195 individuals in 2015 to 24 individuals in 2021, and 50 individuals in 2023 (Braun *et al.,* 2024).

In recent years, California sea lions have been reported below Bonneville Dam (RM 146) feeding on returning white sturgeon (*Acipenser transmontanus*) and adult salmonids (Braun *et. al.,* 2024). While California sea lions are common in the project area during peak fish migrations, only one animal was documented below Bonneville Dam between the months of December and February from 2020 through 2025 (Tidwell, Personal communication, 2026). Considering the spatial and temporal distribution, California sea lions are expected to occur in BLBR Project area during both years of construction.

Steller Sea Lion

Steller sea lions that occur in the LCR, including the project vicinity, are members of the eastern Distinct Population Segment (DPS), ranging from Southeast Alaska to central California, including both Oregon and Washington (Jeffries *et al.,* 2000; Scordino, 2006; NMFS, 2013). Steller sea lions have been observed at the base of Bonneville Dam (RM 146) in recent years, feeding on white sturgeon (*Acipenser transmontanus*) and salmonids (Braun *et al.,* 2024). Steller sea lions are the most abundant pinniped species observed in the project area from the months of December through February, with mean daily abundance of 7.9 individuals observed per day from 2020 through 2025 (Tidwell, Personal communication, 2026). Considering recent observations of their spatial and temporal distribution, Steller sea lions are expected to occur in the project area during each year of in-water construction.

Harbor Seals

Harbor seals in the LCR exhibit some seasonal movement upriver, including into USACE's proposed project area, to follow winter and spring runs of Pacific eulachon and outmigrating juvenile salmon (*Oncorhynchus spp.*). Harbor seal abundance in the project area is relatively low between the months of December and February, with only one individual observed from 2020 through 2025 (Tidwell, Personal communication, 2026). Considering the spatial and temporal distribution, harbor seals could enter USACE's proposed project area each day of in-water construction.

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Not all marine mammal species have equal hearing capabilities

(*e.g.,* Richardson *et al.,* 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007; 2019) recommended that marine mammals be divided into hearing groups based on directly measured (behavioral or auditory evoked potential techniques) or estimated hearing ranges (behavioral response data, anatomical modeling, *etc.*). Generalized hearing ranges were chosen based on the approximately 65 decibel (dB) threshold from composite audiograms, previous analyses in NMFS (2018), and/or data from Southall *et al.* (2007, 2019). We note that the names of two hearing groups and the generalized hearing ranges of all marine mammal hearing groups have been updated (NMFS, 2024) as reflected below in table 4.

TABLE 4—MARINE MAMMAL HEARING GROUPS

[NMFS, 2024]

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

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

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

Potential Effects of Specified Activities on Marine Mammals and Their Habitat

This section discusses how components of the specified activity may impact marine mammals and their habitat. The Estimated Take of Marine Mammals section later in this document includes a quantitative analysis of the number of individuals that are expected to be taken by this activity. The Negligible Impact Analysis and Determination section considers the content of this section, the Estimated Take of Marine Mammals section, and the Proposed Mitigation section, to draw conclusions regarding the likely impacts of these activities on the reproductive success or survivorship of individuals and whether those impacts are reasonably expected to, or reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.

Acoustic effects on marine mammal during the specified activities for the BLBR Project could occur from impact pile driving and vibratory pile driving and removal. The effects of underwater noise from USACE's proposed activities have the potential to result in Level A and Level B harassment of marine mammals in the proposed action area during Year 1, and in Level B harassment only during Year 2.

Description of Sound Sources

The marine soundscape is comprised of both ambient and anthropogenic sounds. Ambient sound is defined as the all-encompassing sound in a given place and is usually a composite of sound from many sources both near and far (American National Standards Institute (ANSI), 1995). The sound level of an area is defined by the total acoustical energy being generated by known and unknown sources. These sources may include physical (*e.g.,* waves, wind, precipitation, earthquakes, ice, atmospheric sound), biological (*e.g.,* sounds produced by marine mammals, fish, and invertebrates), and anthropogenic sound (*e.g.,* vessels, dredging, aircraft, construction).

The sum of the various natural and anthropogenic sound sources at any given location and time—which comprise ''ambient'' or ''background'' sound—depends not only on the source levels (as determined by current weather conditions and levels of biological and shipping activity) but also on the ability of sound to propagate through the environment. In turn, sound propagation is dependent on the spatially and temporally varying properties of the water column and sea floor and is frequency-dependent. As a result of the dependence on a large number of varying factors, ambient sound levels can be expected to vary widely over both coarse and fine spatial and temporal scales. Sound levels at a given frequency and location can vary by 10–20 dB from day to day (Richardson *et al.,* 1995). The result is that, depending on the source type and its intensity, sound from the specified activities may be a negligible addition to the local environment or could form a distinctive signal that may affect marine mammals.

In-water construction associated with the proposed project would include impact and vibratory pile driving and removal. The sounds produced by these activities fall into one of two general sound types: impulsive and non-impulsive. Impulsive sounds (*e.g.,* explosions, gunshots, sonic booms, impact pile driving) are typically transient, brief (less than 1 second), broadband, and consist of high peak sound pressure with rapid rise time and rapid decay (ANSI, 1986; National Institute for Occupational Safety and Health (NIOSH), 1998; ANSI, 2005; NMFS, 2018). Non-impulsive sounds (*e.g.,* aircraft, machinery operations such as drilling or dredging, vibratory pile driving, and active sonar systems) can be broadband, narrowband or tonal, brief or prolonged (continuous or intermittent), and typically do not have the high peak sound pressure with rapid rise/decay time that impulsive sounds do (ANSI, 1995; NIOSH, 1998; NMFS, 2018). The distinction between these two sound types is important because they have differing potential to cause physical effects, particularly with regard to hearing (*e.g.,* Ward 1997 in Southall *et al.,* 2007).

Both impact and vibratory pile hammers would be used on the BLBR Project. Impact hammers operate by repeatedly dropping a heavy piston onto a pile to drive the pile into the substrate. Sound generated by impact hammers is characterized by rapid rise times and high peak levels, a potentially injurious combination (Hastings and Popper, 2005). Vibratory hammers install piles by vibrating them and allowing the weight of the hammer to push them into the sediment. Vibratory hammers

produce significantly less sound than impact hammers. Peak sound pressure levels (SPLs) may be 180 dB or greater but are generally 10 to 20 dB lower than SPLs generated during impact pile driving of the same-sized pile (Oestman *et al.,* 2009). Rise time is slower, reducing the probability and severity of injury, and sound energy is distributed over a greater amount of time (Nedwell and Edwards, 2002; Carlson *et al.,* 2005).

The likely or possible impacts of the USACE's proposed activities on marine mammals could involve both non-acoustic and acoustic stressors. Potential non-acoustic stressors could result from the physical presence of the equipment, vessel, and personnel; however, we expect that any animals that approach the project sites close enough to be harassed due to the presence of equipment or personnel would be within the Level B harassment zones from pile driving would already be subject to harassment from the in-water activities. Therefore, any impacts to marine mammals are expected to primarily be acoustic in nature. Acoustic stressors would be generated by heavy equipment operation during pile installation and removal (*i.e.,* impact and vibratory pile driving and removal).

Potential Effects of Underwater Sound on Marine Mammals

The introduction of anthropogenic noise into the aquatic environment from impact and vibratory pile driving and removal is the primary means by which marine mammals may be harassed from the USACE's specified activities. Anthropogenic sounds cover a broad range of frequencies and sound levels and can have a range of highly variable impacts on marine life from none or minor to potentially severe responses depending on received levels, duration of exposure, behavioral context, and various other factors. Broadly, underwater sound from active acoustic sources, such as those in the Project, can potentially result in one or more of the following: temporary or permanent hearing impairment, non-auditory physical or physiological effects, behavioral disturbance, stress, and masking (Richardson *et al.,* 1995; Gordon *et al.,* 2003; Nowacek *et al.,* 2007; Southall *et al.,* 2007; Götz *et al.,* 2009).

We describe the more severe effects of certain non-auditory physical or physiological effects only briefly as we do not expect that use of pile driving hammers (impact and vibratory) is reasonably likely to result in such effects (see below for further discussion). Potential effects from impulsive sound sources can range in severity from effects such as behavioral disturbance or tactile perception to physical discomfort, slight injury of the internal organs and the auditory system, or mortality (Yelverton *et al.,* 1973). Non-auditory physiological effects or injuries that theoretically might occur in marine mammals exposed to high level underwater sound or as a secondary effect of extreme behavioral reactions (*e.g.,* change in dive profile as a result of an avoidance reaction) caused by exposure to sound include neurological effects, bubble formation, resonance effects, and other types of organ or tissue damage (Cox *et al.,* 2006; Southall *et al.,* 2007; Zimmer and Tyack, 2007; Tal *et al.,* 2015). The project activities considered here do not involve the use of devices such as explosives or mid-frequency tactical sonar that are associated with these types of effects.

In general, animals exposed to natural or anthropogenic sound may experience physical and psychological effects, ranging in magnitude from none to severe (Southall *et al.,* 2007, 2019). Exposure to anthropogenic noise has the potential to result in auditory threshold shifts and behavioral reactions (*e.g.,* avoidance, temporary cessation of foraging and vocalizing, changes in dive behavior). It can also lead to non-observable physiological responses, such an increase in stress hormones. Additional noise in a marine mammal's habitat can mask acoustic cues used by marine mammals to carry out daily functions, such as communication and predator and prey detection.

The degree of effect of an acoustic exposure on marine mammals is dependent on several factors, including, but not limited to, sound type (*e.g.,* impulsive vs. non-impulsive), signal characteristics, the species, age and sex class (*e.g.,* adult male vs. mom with calf), duration of exposure, the distance between the noise source and the animal, received levels, behavioral state at time of exposure, and previous history with exposure (Wartzok *et al.,* 2004; Southall *et al.,* 2007). In general, sudden, high-intensity sounds can cause hearing loss as can longer exposures to lower-intensity sounds. Moreover, any temporary or permanent loss of hearing, if it occurs at all, will occur almost exclusively for noise within an animal's hearing range. We describe below the specific manifestations of acoustic effects that may occur based on each of the activities proposed by the USACE.

Richardson *et al.* (1995) described zones of increasing intensity of effect that might be expected to occur in relation to distance from a source and assuming that the signal is within an animal's hearing range. First (at the greatest distance) is the area within which the acoustic signal would be audible (potentially perceived) to the animal but not strong enough to elicit any overt behavioral or physiological response. The next zone (closer to the receiving animal) corresponds with the area where the signal is audible to the animal and of sufficient intensity to elicit behavioral or physiological responsiveness. The third is a zone within which, for signals of high intensity, the received level is sufficient to potentially cause discomfort or tissue damage to auditory or other systems. Overlaying these zones to a certain extent is the area within which masking (*i.e.,* when a sound interferes with or masks the ability of an animal to detect a signal of interest that is above the absolute hearing threshold) may occur; the masking zone may be highly variable in size.

Below, we provide additional details regarding potential impacts on marine mammals and their habitat from noise in general, starting with hearing impairment, as well as from the specific activities the USACE plans to conduct, to the degree it is available.

Auditory Injury (AUD INJ)—NMFS defines auditory injury as ''damage to the inner ear that can result in destruction of tissue . . . which may or may not result in permanent threshold shifts (PTS)'' (NMFS, 2024). NMFS defines PTS as a permanent, irreversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2024). PTS does not generally affect more than a limited frequency range, and an animal that has incurred PTS has incurred some level of hearing loss at the relevant frequencies; typically, animals with PTS are not functionally deaf (Au and Hastings, 2008; Finneran, 2016). Available data from humans and other terrestrial mammals indicate that a 40-dB threshold shift approximates PTS onset (see Ward *et al.,* 1958, 1959, 1960; Kryter *et al.,* 1966; Miller, 1974; Ahroon *et al.,* 1996; Henderson *et al.,* 2008). PTS levels for marine mammals are estimates, as with the exception of a single study unintentionally inducing PTS in a harbor seal (Kastak *et al.,* 2008), there are no empirical data measuring PTS in marine mammals largely due to the fact that, for various ethical reasons, experiments involving anthropogenic noise exposure at levels inducing PTS are not typically pursued or authorized (NMFS, 2018).

Temporary Threshold Shift (TTS)—TTS is a temporary, reversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2018). Based on data from cetacean TTS measurements (Southall *et al.,* 2007, 2019), a TTS of 6 dB is considered the minimum Threshold Shift (TS) clearly larger than any day-to-day or session-to-session variation in a subject's normal hearing ability (Schlundt *et al.,* 2000; Finneran *et al.,* 2000, 2002). As described in Finneran (2015), marine mammal studies have shown the amount of TTS increases with cumulative sound exposure level (SELcum) in an accelerating fashion: At low exposures with lower SELcum, the amount of TTS is typically small, and the growth curves have shallow slopes. At exposures with higher SELcum, the growth curves become steeper and approach linear relationships with the noise SEL.

Depending on the degree (elevation of threshold in dB), duration (*i.e.,* recovery time), and frequency range of TTS, and the context in which it is experienced, TTS can have effects on marine mammals ranging from discountable to serious (similar to those discussed in Auditory Masking, below). For example, a marine mammal may be able to readily compensate for a brief, relatively small amount of TTS in a non-critical frequency range that takes place during a time when the animal is traveling through the open ocean, where ambient noise is lower and there are not as many competing sounds present. Alternatively, a larger amount and longer duration of TTS sustained during a time when communication is critical for successful mother/calf interactions could have more serious impacts. We note that reduced hearing sensitivity as a simple function of aging has been observed in marine mammals, as well as humans and other taxa (Southall *et al.,* 2007), so we can infer that strategies exist for coping with this condition to some degree, though likely not without cost.

Many studies have examined noise-induced hearing loss in marine mammals (see Finneran (2015) and Southall *et al.* (2019) for summaries). TTS is the mildest form of hearing impairment that can occur during exposure to sound (Kryter, 2013). While experiencing TTS, the hearing threshold rises, and a sound must be at a higher level in order to be heard. In terrestrial and marine mammals, TTS can last from minutes or hours to days (in cases of strong TTS). In many cases, hearing sensitivity recovers rapidly after exposure to the sound ends. For pinnipeds in water, measurements of TTS are limited to harbor seals, elephant seals (*Mirounga angustirostris*), bearded seals (*Erignathus barbatus*) and California sea lions (Kastak *et al.,* 1999, 2007; Kastelein *et al.,* 2019b, 2019c, 2021, 2022a, 2022b; Reichmuth *et al.,* 2019; Sills *et al.,* 2020). These studies examined hearing thresholds measured in marine mammals before and after exposure to intense or long-duration sound exposures. The difference between the pre-exposure and post-exposure thresholds can be used to determine the amount of TS at various post-exposure times.

The amount and onset of TTS depends on the exposure frequency. Sounds at low frequencies, well below the region of best sensitivity for a species or hearing group, are less hazardous than those at higher frequencies, near the region of best sensitivity (Finneran and Schlundt, 2013). At low frequencies, onset-TTS exposure levels are higher compared to those in the region of best sensitivity (*i.e.,* a low frequency noise would need to be louder to cause TTS onset when TTS exposure level is higher), as shown for harbor porpoises and harbor seals (Kastelein *et al.,* 2019a, 2019c). Note that in general, harbor seals have a lower TTS onset than other measured pinniped species (Finneran, 2015). In addition, TTS can accumulate across multiple exposures, but the resulting TTS will be less than the TTS from a single, continuous exposure with the same SEL (Mooney *et al.,* 2009; Finneran *et al.,* 2010; Kastelein *et al.,* 2014, 2015). This means that TTS predictions based on the total, SELcum will overestimate the amount of TTS from intermittent exposures, such as sonars and impulsive sources. Nachtigall *et al.* (2018) describes measurements of hearing sensitivity of multiple odontocete species (*i.e.,* bottlenose dolphin, harbor porpoise, beluga, and false killer whale (*Pseudorca crassidens*)) when a relatively loud sound was preceded by a warning sound. These captive animals were shown to reduce hearing sensitivity when warned of an impending intense sound. Based on these experimental observations of captive animals, the authors suggest that wild animals may dampen their hearing during prolonged exposures or if conditioned to anticipate intense sounds. Another study showed that echolocating animals (including odontocetes) might have anatomical specializations that might allow for conditioned hearing reduction and filtering of low-frequency ambient noise, including increased stiffness and control of middle ear structures and placement of inner ear structures (Ketten *et al.,* 2021). Additionally, the existing marine mammal TTS data come from a limited number of individuals within these species.

Relationships between TTS and PTS thresholds have not been studied in marine mammals, but such relationships are assumed to be similar to those in humans and other terrestrial mammals. PTS typically occurs at exposure levels at least several dBs above that inducing mild TTS (*e.g.,* a 40-dB TS approximates PTS onset (Kryter *et al.,* 1966; Miller, 1974), while a 6-dB TS approximates TTS onset (Southall *et al.,* 2007, 2019). Based on data from terrestrial mammals, a precautionary assumption is that the PTS thresholds for impulsive sounds (such as impact pile driving pulses as received close to the source) are at least 6 dB higher than the TTS threshold on a peak-pressure basis and PTS SELcum thresholds are 15 to 20 dB higher than TTS SELcum thresholds (Southall *et al.,* 2007, 2019). Given the higher level of sound or longer exposure duration necessary to cause PTS as compared with TTS, it is considerably less likely that PTS could occur.

The BLBR Project involves vibratory and impact pile driving during Year 1 construction activities, and exclusively vibratory pile removal during Year 2. While both impact and vibratory driving may occur on the same day during Year 1, only one method will operate at any given time. Pile driving and removal activities are not expected to be continuous, and frequent operational pauses are likely. Because pinniped prey species may temporarily avoid the ensonified area during these activities, pinnipeds are also unlikely to remain within the project area for extended periods. This behavioral avoidance, combined with operational pauses, is expected to reduce the potential for TS.

California sea lions, Steller sea lions, and harbor seals have been documented hauling out on the northern side of Cascades Island, the southwestern end of Bedford Island, the northwestern end of Tower Island, and a nearby sea lion trap, with the closest haulout located approximately 260 m downstream of the project site. Animals using these sites may transit through the project area to and from the haulouts. Individuals swimming with their heads underwater would be exposed to pile driving noise, potentially increasing the risk of TS over multiple days of exposure. However, this risk is mitigated by the expectation that these animals will

spend extended durations out of the water on haulouts.

Behavioral Harassment—Exposure to noise from pile driving and removal also have the potential to behaviorally disturb marine mammals. Available studies show wide variation in response to underwater sound; therefore, it is difficult to predict specifically how any given sound in a particular instance might affect marine mammals perceiving the signal. If a marine mammal does react briefly to an underwater sound by changing its behavior or moving a small distance, the impacts of the change are unlikely to be significant to the individual, let alone the stock or population. However, if a sound source displaces marine mammals from an important feeding or breeding area for a prolonged period, impacts on individuals and populations could be significant (*e.g.,* Lusseau and Bejder, 2007; Weilgart, 2007; NRC, 2005).

Disturbance may result in changing durations of surfacing and dives, number of blows per surfacing, or moving direction and/or speed; reduced/increased vocal activities; changing/cessation of certain behavioral activities (such as socializing or feeding); visible startle response or aggressive behavior (such as tail/fluke slapping or jaw clapping); avoidance of areas where sound sources are located. Pinnipeds may increase their haul out time, possibly to avoid in-water disturbance (Thorson and Reyff, 2006). Behavioral responses to sound are highly variable and context-specific and any reactions depend on numerous intrinsic and extrinsic factors (*e.g.,* species, state of maturity, experience, current activity, reproductive state, auditory sensitivity, time of day), as well as the interplay between factors (*e.g.,* Richardson *et al.,* 1995; Wartzok *et al.,* 2004; Southall *et al.,* 2007, 2021; Weilgart, 2007; Archer *et al.,* 2010). Behavioral reactions can vary not only among individuals but also within exposures of an individual, depending on previous experience with a sound source, context, and numerous other factors (Ellison *et al.,* 2012, Southall *et al.,* 2021), and can vary depending on characteristics associated with the sound source (*e.g.,* whether it is moving or stationary, number of sources, distance from the source). In general, pinnipeds seem more tolerant of, or at least habituate more quickly to, potentially disturbing underwater sound than do cetaceans, and generally seem to be less responsive to exposure to industrial sound than most cetaceans. For a review of the studies involving marine mammal behavioral responses to sound, see Southall *et al.,* 2007; Gomez *et al.,* 2016; and Southall *et al.,* 2021 reviews.

Disruption of feeding behavior can be difficult to correlate with anthropogenic sound exposure, so it is usually inferred by observed displacement from known foraging areas, the appearance of secondary indicators (*e.g.,* bubble nets or sediment plumes), or changes in dive behavior. As for other types of behavioral response, the frequency, duration, and temporal pattern of signal presentation, as well as differences in species sensitivity, are likely contributing factors to differences in response in any given circumstance (*e.g.,* Croll *et al.,* 2001; Nowacek *et al.,* 2004; Madsen *et al.,* 2006; Yazvenko *et al.,* 2007). A determination of whether foraging disruptions incur fitness consequences would require information on estimates of the energetic requirements of the affected individuals and the relationship between prey availability, foraging effort and success, and the life history stage of the animal.

Airborne Acoustic Effects—Pinnipeds that occur near the project sites could be exposed to airborne sounds associated with pile driving and removal that have the potential to cause behavioral harassment, depending on their distance from the activities.

Airborne noise would primarily be an issue for pinnipeds that are swimming or hauled out near the project site within the range of noise levels elevated above the airborne acoustic harassment criteria. We recognize that pinnipeds in the water could be exposed to airborne sound that may result in behavioral harassment when swimming with their heads above water. Most likely, airborne sounds would cause behavioral responses similar to those discussed above in relation to underwater sound. For instance, anthropogenic sound could cause hauled out pinnipeds to exhibit changes in their normal behavior, such as reduction in vocalizations, or cause them to temporarily abandon the area and move further from the source. However, these animals would previously have been 'taken' because of exposure to underwater sounds above the behavioral harassment thresholds, which are in all cases larger than those associated with airborne sound. Thus, the behavioral harassment of these animals is already accounted for in these estimates of potential take. Therefore, we do not believe that authorization of incidental take resulting from airborne sound for pinnipeds is warranted, and airborne sound is not discussed further here.

Stress Response—An animal's perception of a threat may be sufficient to trigger stress responses consisting of some combination of behavioral responses, autonomic nervous system responses, neuroendocrine responses, or immune responses (*e.g.,* Seyle, 1950; Moberg, 2000). In many cases, an animal's first and sometimes most economical (in terms of energetic costs) response is behavioral avoidance of the potential stressor. Autonomic nervous system responses to stress typically involve changes in heart rate, blood pressure, and gastrointestinal activity. These responses have a relatively short duration and may or may not have a significant long-term effect on an animal's fitness.

Neuroendocrine stress responses often involve the hypothalamus-pituitary-adrenal system. Virtually all neuroendocrine functions that are affected by stress—including immune competence, reproduction, metabolism, and behavior—are regulated by pituitary hormones. Stress-induced changes in the secretion of pituitary hormones have been implicated in failed reproduction, altered metabolism, reduced immune competence, and behavioral disturbance (*e.g.,* Moberg, 1987; Blecha, 2000). Increases in the circulation of glucocorticoids are also equated with stress (Romano *et al.,* 2004).

The primary distinction between stress (which is adaptive and does not normally place an animal at risk) and ''distress'' is the cost of the response. During a stress response, an animal uses glycogen stores that can be quickly replenished once the stress is alleviated. In such circumstances, the cost of the stress response would not pose serious fitness consequences. However, when an animal does not have sufficient energy reserves to satisfy the energetic costs of a stress response, energy resources must be diverted from other functions. This state of distress will last until the animal replenishes its energetic reserves sufficient to restore normal function.

Relationships between these physiological mechanisms, animal behavior, and the costs of stress responses are well-studied through controlled experiments and for both laboratory and free-ranging animals (*e.g.,* Holberton *et al.,* 1996; Hood *et al.,* 1998; Jessop *et al.,* 2003; Krausman *et al.,* 2004; Lankford *et al.,* 2005). Stress responses due to exposure to anthropogenic sounds or other stressors and their effects on marine mammals have also been reviewed (Fair and Becker, 2000; Romano *et al.,* 2002b) and, more rarely, studied in wild populations (*e.g.,* Romano *et al.,* 2002a).

For example, Rolland *et al.* (2012) found that noise reduction from reduced ship traffic in the Bay of Fundy was associated with decreased stress in North Atlantic right whales. These and other studies lead to a reasonable expectation that some marine mammals will experience physiological stress responses upon exposure to acoustic stressors and that it is possible that some of these would be classified as ''distress.'' In addition, any animal experiencing TTS would likely also experience stress responses (NRC, 2005), however distress is an unlikely result of this project based on observations of marine mammals during previous, similar construction projects in the Columbia River.

Auditory Masking—Sound can disrupt behavior through masking, or interfering with, an animal's ability to detect, recognize, or discriminate between acoustic signals of interest (*e.g.,* those used for intraspecific communication and social interactions, prey detection, predator avoidance, navigation) (Richardson *et al.,* 1995; Erbe *et al.,* 2016). Masking occurs when the receipt of a sound is interfered with by another coincident sound at similar frequencies and at similar or higher intensity and may occur whether the sound is natural (*e.g.,* snapping shrimp, wind, waves, precipitation) or anthropogenic (*e.g.,* shipping, sonar, seismic exploration, pile driving) in origin. The ability of a noise source to mask biologically important sounds depends on the characteristics of both the noise source and the signal of interest (*e.g.,* signal-to-noise ratio, temporal variability, direction), in relation to each other and to an animal's hearing abilities (*e.g.,* sensitivity, frequency range, critical ratios, frequency discrimination, directional discrimination, age or TTS hearing loss), and existing ambient noise and propagation conditions. Masking of natural sounds can result when human activities produce high levels of background sound at frequencies important to marine mammals. Conversely, if the background level of underwater sound is high (*e.g.,* on a day with strong wind and high waves), an anthropogenic sound source would not be detectable as far away as would be possible under quieter conditions and would itself be masked.

Under certain circumstances, marine mammals experiencing significant masking could also be impaired from maximizing their performance fitness in survival and reproduction. Therefore, when the coincident (masking) sound is man-made, it may be considered harassment when disrupting or altering critical behaviors. It is important to distinguish TTS and PTS, which persist after the sound exposure, from masking, which occurs during the sound exposure. Because masking (without resulting in TS) is not associated with abnormal physiological function, it is not considered a physiological effect, but rather a potential behavioral effect.

The frequency range of the potentially masking sound is important in determining any potential behavioral impacts. For example, low-frequency signals may have less effect on high-frequency echolocation sounds produced by odontocetes but are more likely to affect detection of mysticete communication calls and other potentially important natural sounds such as those produced by surf and some prey species. The masking of communication signals by anthropogenic noise may be considered as a reduction in the communication space of animals (*e.g.,* Clark *et al.,* 2009) and may result in energetic or other costs as animals change their vocalization behavior (*e.g.,* Miller *et al.,* 2000; Foote *et al.,* 2004; Parks *et al.,* 2007; Di Iorio and Clark, 2010; Holt *et al.,* 2009). Masking can be reduced in situations where the signal and noise come from different directions (Richardson *et al.,* 1995), through amplitude modulation of the signal, or through other compensatory behaviors (Houser and Moore, 2014). Masking can be tested directly in captive species (*e.g.,* Erbe, 2008), but in wild populations it must be either modeled or inferred from evidence of masking compensation. There are few studies addressing real-world masking sounds likely to be experienced by marine mammals in the wild (*e.g.,* Branstetter *et al.,* 2013).

Masking affects both senders and receivers of acoustic signals and can potentially have long-term chronic effects on marine mammals at the population level as well as at the individual level. Low-frequency ambient sound levels have increased by as much as 20 dB (more than three times in terms of SPL) in the world's ocean from pre-industrial periods, with most of the increase from distant commercial shipping (Hildebrand, 2009). All anthropogenic sound sources, but especially chronic and lower-frequency signals (*e.g.,* from vessel traffic), contribute to elevated ambient sound levels, thus intensifying masking. The BLBR Project is located in an area with routine vessel traffic from recreational and commercial vessels; therefore, background sound levels are generally already elevated.

Marine Mammal Habitat Effects

Proposed construction for the BLBR Project could have localized, temporary impacts on marine mammal habitat, including prey, by increasing in-water SPLs and slightly decreasing water quality. Increased noise levels may affect acoustic habitat (see *Auditory Masking*) and adversely affect marine mammal prey in the vicinity of the project area (see discussion below). During impact and vibratory pile driving or removal, elevated levels of underwater noise would ensonify the project areas where both fish and mammals occur and could affect foraging success. Additionally, marine mammals may avoid the areas during construction; however, displacement due to noise is expected to be temporary and is not expected to result in long-term effects to the individuals or populations. In-water pile driving activities during each year of the project would be short in duration and would likely only have temporary impacts on marine mammal habitat through increases in underwater and airborne sound.

Water Quality—In-water pile driving activities would also cause short-term effects on water quality due to increased turbidity. Temporary and localized increase in turbidity near the riverbed would occur in the immediate area surrounding where piles are installed or removed and where rock placement occurs due benthic sediment disturbance. In general, turbidity associated with pile installation is localized to about a 25 ft (7.6 m) radius around the pile (Everitt *et al.,* 1980). The sediments of the project site would settle out of the water column rapidly when disturbed. Local currents are anticipated to disburse any additional suspended sediments produced by each of the project's activities at moderate to rapid rates depending on the current velocity. Studies of the effects of turbid water on fish (marine mammal prey) suggest that concentrations of suspended sediment can reach thousands of milligrams per liter before an acute toxic reaction is expected (Burton, 1993).

Effects from turbidity and sedimentation are expected to be short-term, minor, and localized. Suspended solids in the water column should dissipate and quickly return to background levels in all construction scenarios. Turbidity within the water column has the potential to reduce the level of oxygen in the water and irritate the gills of prey fish species in the proposed project area. However, suspended sediment associated with the

project would be temporary and localized, and fish in the proposed project area would be able to move away from and avoid the areas where plumes may occur. Therefore, it is expected that the impacts on prey fish species from turbidity, and therefore on marine mammals, would be minimal and temporary. In general, the areas likely impacted by the proposed construction activities are relatively small compared to the total available marine mammal habitat in the LCR in Oregon. Therefore, we expect the impact from increased turbidity levels to be discountable to marine mammals and do not discuss it further.

In-water Effects on Potential Foraging Habitat—The proposed activities would not result in permanent impacts to habitats used directly by marine mammals and only negligible increases in vessel traffic are expected in either location as a result of the specified activities. The areas likely impacted by the proposed actions are relatively small compared to the total available habitat in the LCR in Oregon. The proposed project area is highly influenced by vessel traffic as well as dam and lock operations. Despite regular anthropogenic disturbance, the project area provides opportunistic foraging habitat for marine mammals. However, the in-water work windows are restricted to the months of December through February, when salmonids and marine mammals are expected to be the least abundant. The total riverbed area affected by pile driving and pile removal activities is small compared to the vast foraging areas available to marine mammals downstream of the construction site in the LCR. At best, the area impacted provide marginal foraging habitat for marine mammals and fishes. Furthermore, pile driving and pile removal would not obstruct movements or migration of marine mammals.

Construction activities would produce continuous, non-impulsive (*i.e.,* vibratory pile driving and removal) and intermittent impulsive (*i.e.,* impact pile driving) sounds. Fish utilize the soundscape and components of sound in their environment to perform important functions such as foraging, predator avoidance, mating, and spawning (Zelick *et al.,* 1999; Fay, 2009). Depending on their hearing anatomy and peripheral sensory structures, which vary among species, fishes hear sounds using pressure and particle motion sensitivity capabilities and detect the motion of surrounding water (Fay *et al.,* 2008). The potential effects of noise on fishes depends on the overlapping frequency range, distance from the sound source, water depth of exposure, and species-specific hearing sensitivity, anatomy, and physiology. Key impacts to fishes may include behavioral responses, hearing damage, barotrauma (pressure-related injuries), and mortality.

Fish react to sounds which are especially strong and/or intermittent low-frequency sounds, and behavioral responses such as flight or avoidance are the most likely effects. Short duration, sharp sounds can cause overt or subtle changes in fish behavior and local distribution. The reaction of fish to noise depends on the physiological state of the fish, past exposures, motivation (*e.g.,* feeding, spawning, migration), and other environmental factors. Hastings and Popper (2005) identified several studies that suggest fish may relocate to avoid certain areas of sound energy. Additional studies have documented effects of pile driving on fish, several of which are based on studies in support of large, multi-year bridge construction projects (*e.g.,* Scholik and Yan, 2001; Popper and Hastings, 2009). Many studies have demonstrated that impulse sounds might affect the distribution and behavior of some fishes, potentially impacting foraging opportunities or increasing energetic costs (*e.g.,* Pearson *et al.,* 1992; Skalski *et al.,* 1992; Santulli *et al.,* 1999; Fewtrell and McCauley, 2012; Paxton *et al.,* 2017). In response to pile driving, Pacific sardines (*Sardinops sagax*) and northern anchovies (*Engraulis mordax*) may exhibit an immediate startle response to individual strikes but return to ''normal'' pre-strike behavior following the conclusion of pile driving with no evidence of injury as a result (see NAVFAC, 2014). However, some studies have shown no or slight reaction to impulse sounds (*e.g.,* Wardle *et al.,* 2001; Popper *et al.,* 2005; Jorgenson and Gyselman, 2009; Peña *et al.,* 2013).

SPLs of sufficient strength have been known to cause injury to fish and fish mortality. However, in most fish species, hair cells in the ear continuously regenerate and loss of auditory function is likely restored when damaged cells are replaced with new cells. Halvorsen *et al.* (2012b) showed that a TTS of 4–6 dB was recoverable within 24 hours for one species. Impacts would be most severe when the individual fish is close to the source and when the duration of exposure is long. Injury caused by barotrauma can range from slight to severe and can cause death and is most likely for fish with swim bladders. Barotrauma injuries have been documented during controlled exposure to impact pile driving (Halvorsen *et al.,* 2012a; Casper *et al.,* 2013) and the greatest potential effect on fish during the proposed project would occur during impact pile driving. Impact pile driving for the BLBR Project would only occur during Year 1 construction and constitute a small proportion of total in-water construction time. For the BLBR Project, impact driving would be limited to approximately 125 strikes per pile or 1000 strikes per day. In-water construction would be restricted to daylight hours (defined as 30 minutes before sunrise to 30 minutes after sunset) which would allow fish to forage and transit the area undisturbed at night. While vibratory pile driving may elicit temporary behavioral avoidance, it is unlikely to cause injury or have persistent effects on local populations. Furthermore, all installation would occur within USACE designated work window from December through February, to minimize exposure for migrating ESA-listed fish species. Notably, the BLBR Project area already experiences significant anthropogenic noise from regular vessel traffic as well as dam and lock operations. Additional noise from industrial activities.

The most likely impact on fishes from impact and vibratory pile driving and removal in project area would be temporary behavioral avoidance of the area. The duration of fish avoidance of the area after pile driving stops is unknown but a rapid return to normal recruitment, distribution, and behavior is anticipated. There are times of known seasonal marine mammal foraging when fish are aggregating but the impacted areas are small portions of the total foraging habitats available in the LCR. In general, impacts to marine mammal prey species are expected to be minor and temporary. Further, it is anticipated that preparation activities for pile driving (*i.e.,* positioning of the pile or hammer) and upon initial startup of devices would cause fish to move away from the affected area where injuries may occur. Therefore, relatively small portions of the proposed project area would be affected for short periods of time, and the potential for effects on fish to occur would be temporary and limited to the duration of sound-generating activities.

Construction activities, in the form of increased turbidity, also have the potential to adversely affect forage fish in the project area. As discussed earlier, increased turbidity is expected to occur in the immediate vicinity (approximately 25 ft (7.6 m) or less) of construction activities (Everitt *et al.,* 1980). However, suspended solids are expected to dissipate quickly with river current. Given the limited area affected

and river current dilution rates, any effects on forage fish are expected to be minor or negligible. In addition, best management practices would be in effect to limit the extent of turbidity to the immediate project area. Finally, turbidity levels resulting from construction activities are expected to remain within the range of baseline conditions. Fish and marine mammals in these regions are frequently exposed to significant suspended sediment loads from winter storm runoff, as well as other natural and anthropogenic sources.

In summary, given the short daily duration of sound associated with pile driving and removal and the relatively small areas being affected, pile driving and removal activities associated with the proposed project are not likely to have a permanent adverse effect on any fish habitat, or populations of fish species. Thus, we conclude that impacts of the specified activity are not likely to have more than short-term adverse effects on any prey habitat or populations of prey species. Further, any impacts to marine mammal habitat are not expected to result in significant or long-term consequences for individual marine mammals, or to contribute to adverse impacts on their populations.

Estimated Take of Marine Mammals

This section provides an estimate of the number of incidental takes proposed for authorization through the IHAs, which will inform NMFS' consideration of ''small numbers,'' the negligible impact determinations, and impacts on subsistence uses.

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 for Year 1 construction would primarily be by Level B harassment, and for Year 2 construction would include only Level B harassment, as use of the acoustic sources (*i.e.,* vibratory, and impact pile driving; and vibratory pile removal) has the potential to result in the disruption of behavioral patterns of individual marine mammals. There is also some potential for auditory injury (Level A harassment) of all species present during Year 1 construction, because of their prevalence in project area, nearby haulouts, and predicted AUD INJ zones. The proposed mitigation and monitoring measures are expected to minimize the severity of the taking to the extent practicable.

As described previously, no serious injury or mortality is anticipated or proposed to be authorized for this activity. Below we describe how the proposed take numbers are estimated.

For acoustic impacts, generally speaking, we estimate take by considering: (1) acoustic criteria above which NMFS believes there is some reasonable potential for marine mammals to be behaviorally harassed or incur some degree of AUD INJ; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) the number of days of activities. We note that while these factors can contribute to a basic calculation to provide an initial prediction of potential 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 proposed take estimates.

Acoustic Criteria

NMFS recommends the use of acoustic criteria that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur AUD INJ of some degree (equated to Level A harassment). Criteria for AUD INJ, and hearing group categories are available in NMFS' Updated Technical Guidance (NMFS 2024) and are reflected below in the Level A harassment section.

Level B Harassment—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 or exposure context (*e.g.,* frequency, predictability, duty cycle, duration of the exposure, signal-to-noise ratio, distance to the source), the environment (*e.g.,* bathymetry, other noises in the area, predators in the area), and the receiving animals (hearing, motivation, experience, demography, life stage, depth) and can be difficult to predict (*e.g.,* Southall *et al.,* 2007; Southall *et al.,* 2021; Ellison *et al.,* 2012). Based on what the available science indicates and the practical need to use a threshold based on a metric that is both predictable and measurable for most activities, NMFS typically uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS generally predicts that marine mammals are likely to be behaviorally harassed in a manner considered to be Level B harassment when exposed to underwater anthropogenic noise above root-mean-squared sound pressure levels (RMS SPL) of 120 dB (referenced to 1 micropascal (re 1 μPa)) for continuous (*e.g.,* vibratory pile driving, drilling) and above RMS SPL 160 dB re 1 μPa for non-explosive impulsive (*e.g.,* seismic airguns) or intermittent (*e.g.,* scientific sonar) sources. Generally speaking, Level B harassment take estimates based on these behavioral harassment thresholds are expected to include any likely takes by TTS as, in most cases, the likelihood of TTS occurs at distances from the source less than those at which behavioral harassment is likely. TTS of a sufficient degree can manifest as behavioral harassment, as reduced hearing sensitivity and the potential reduced opportunities to detect important signals (conspecific communication, predators, prey) may result in changes in behavior patterns that would not otherwise occur.

The USACE's proposed activities include the use of continuous (vibratory hammer) and impulsive (impact hammer) sources, and therefore the RMS SPL thresholds of 120 and 160 dB re 1 μPa are applicable.

Level A harassment—NMFS' Updated Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 3.0) (Updated Technical Guidance, 2024) identifies dual criteria to assess AUD INJ (Level A harassment) to five different underwater marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). USACE's proposed activities include the use of impulsive (impact hammer) and non-impulsive (vibratory hammer) sources.

The 2024 Updated Technical Guidance criteria include both updated thresholds and updated weighting functions for each hearing group. The thresholds are provided in the table below. The references, analysis, and methodology used in the development of the criteria are described in NMFS' 2024 Updated Technical Guidance, which may be accessed at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-*

mammal-acoustic-technical-guidance-other-acoustic-tools.

TABLE 5—THRESHOLDS IDENTIFYING THE ONSET OF AUDITORY INJURY

Hearing group	AUD INJ onset acoustic thresholds * (received level)	
	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	*Cell 1:* $L_{pk,flat}$: 222 dB; $L_{E,LF,24h}$: 183 dB	*Cell 2:* $L_{E,LF,24h}$: 197 dB.
High-Frequency (HF) Cetaceans	*Cell 3:* $L_{pk,flat}$: 230 dB; $L_{E,HF,24h}$: 193 dB	*Cell 4:* $L_{E,HF,24h}$: 201 dB.
Very High-Frequency (VHF) Cetaceans	*Cell 5:* $L_{pk,flat}$: 202 dB; $L_{E,VHF,24h}$: 159 dB	*Cell 6:* $L_{E,VHF,24h}$: 181 dB.
Phocid Pinnipeds (PW) (Underwater)	*Cell 7:* $L_{pk,flat}$: 223 dB; $L_{E,PW,24h}$: 183 dB	*Cell 8:* $L_{E,PW,24h}$: 195 dB.
Otariid Pinnipeds (OW) (Underwater)	*Cell 9:* $L_{pk,flat}$: 230 dB; $L_{E,OW,24h}$: 185 dB	*Cell 10:* $L_{E,OW,24h}$: 199 dB.

* Dual metric criteria for impulsive sounds: Use whichever criteria results in the larger isopleth for calculating AUD INJ onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level criteria associated with impulsive sounds, the PK SPL criteria are recommended for consideration for non-impulsive sources.

Note: Peak sound pressure level ($L_{p,0\text{-}pk}$) has a reference value of 1 µPa, and weighted cumulative sound exposure level ($L_{E,p}$) has a reference value of 1 μPa^2s. In this table, criteria are abbreviated to be more reflective of International Organization for Standardization standards (ISO, 2017). The subscript ''flat'' is being included to indicate peak sound pressure are flat weighted or unweighted within the generalized hearing range of marine mammals underwater (*i.e.,* 7 hertz (Hz) to 165 kHz). The subscript associated with cumulative sound exposure level criteria indicates the designated marine mammal auditory weighting function (LF, HF, and VHF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The weighted cumulative sound exposure level criteria 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 criteria will be exceeded.

Ensonified Area

Here, we describe operational and environmental parameters of the activity that are used in estimating the area ensonified above the acoustic thresholds, including source levels and transmission loss coefficient.

To calculate distances to the Level A and Level B harassment thresholds for BLBR Project, proxy source levels were identified from the literature. Source levels for vibratory and impact driving of steel pipe and steel sheet piles were derived from California Department of Transportation summary data (Caltrans 2015, 2020). Specifically, for the vibratory installation of 24-inch sheet piles, USACE used source levels from Caltrans (2020) instead of Caltrans (2015). This choice is likely conservative, as the Caltrans (2020) proxy source level is 3 dB higher for the RMS SPL. Table 6 shows the source levels used to calculate harassment zones for impact driving, vibratory driving, and vibratory removal. These proxies represent the most appropriate data available due to similarities in pile sizes, materials, and installation methods.

TABLE 6—ESTIMATED UNATTENUATED UNDERWATER SOUND PRESSURE LEVEL ASSOCIATED WITH VIBRATORY AND IMPACT PILE DRIVING FOR THE BLBR PROJECT

Pile type	Method	Source for Proxy Values used	SPLs or SEL at 10 meters distance		
			Average peak SPL, dB re 1 µPa	Average RMS SPL, dB re 1 µPa	Average SEL, dB re 1 µPa2-sec
MSRI Project:					
14-inch steel pipe	Vibratory Installation and Removal [a].	Caltrans (2015)	171	154	NA
14-inch steel pipe	Impact Installation [b]	Caltrans (2020)	200	185	175
24-inch steel pipe	Vibratory Installation and Removal [a].	Caltrans (2020)	194	157	NA
24-inch steel pipe	Impact Installation [b]	Caltrans (2015)	205	190	175
24-inch steel sheet	Vibratory Installation and Removal [a].	Caltrans (2020)	177	163	NA
24-inch steel sheet	Impact Installation [b]	Caltrans (2015)	205	189	179

Note: SPL = Sound Pressure Levels; SEL = Sound Exposure Level; RMS = root mean square; dB re 1 µPa = decibels referenced to 1 micropascal; dB re 1 µPa2 -sec = decibels referenced to 1 micropascal squared second; NA = not applicable. All SPLs and SELs are unattenuated.

[a] Vibratory pile removal would occur during Year 2 of the BLBR Project only.

[b] Impact pile installation would occur during Year 1 of the BLBR Project only.

Level B Harassment Zones

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

TL = B * Log10 (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 USACE's proposed activities in the absence of specific modeling. The spreadsheet inputs for pile size, type, and installation method for each project are included in table 7. The estimated Level B harassment zones for USACE's proposed activities are shown in tables 8 and 9 for Year 1 and Year 2 of the BLBR Project, respectively.

Level A harassment Zones

The ensonified area associated with Level A harassment is more technically challenging to predict due to the need to account for a duration component. Therefore, NMFS developed an optional User Spreadsheet tool to accompany the 2024 Updated Technical Guidance that can be used to relatively simply predict an isopleth distance for use in conjunction with marine mammal density or occurrence to help predict potential takes. We note that because of some of the assumptions included in the methods underlying this optional tool, we anticipate that the resulting isopleth estimates are typically going to be overestimates of some degree, which may result in an overestimate of potential take by Level A harassment. However, this optional tool offers a practical, alternative way to estimate isopleth distances when more sophisticated modeling methods are not available or practical. For stationary sources such as impact and vibratory driving, the optional User Spreadsheet tool predicts the distance at which, if a marine mammal remained at that distance for the duration of the activity, it would be expected to incur AUD INJ. Inputs used in the optional User Spreadsheet tool, and the resulting estimated isopleths, are reported below.

TABLE 7—NMFS USER SPREADSHEET INPUTS FOR YEAR 1 AND YEAR 2 OF THE BLBR PROJECT

Pile size and material	Spreadsheet tab used	Source level (SPL)	Weighting factor adjustment	Transmission loss coefficient	Activity duration (minutes), or (strikes/pile)	Number of piles per day	Distance of sound pressure level measurement (m)
Vibratory pile driving and removal [a]							
14-inch steel pipe	(A.1) Vibratory Pile Driving.	154 dB RMS	2.5	15	6	8	10
24-inch steel pipe	(A.1) Vibratory Pile Driving.	157 dB RMS	2.5	15	6	8	10
24-inch steel sheet	(A.1) Vibratory Pile Driving.	163 dB RMS	2.5	15	6	25	10
Impact pile driving [b]							
14-inch steel pipe	(E.1) Impact Pile Driving.	185 dB RMS, 175 dB SEL, 200 dB PK.	2	15	(125)	8	10
24-inch steel pipe	(E.1) Impact Pile Driving.	190 dB RMS, 175 dB SEL, 205 dB PK.	2	15	(125)	8	10
24-inch steel sheet	(E.1) Impact Pile Driving.	189 dB RMS, 179 dB SEL, 205 dB PK.	2	15	(125)	25	10

[a] The same user spreadsheet inputs were used for both pile installation and removal.
[b] Impact pile driving would occur during Year 1 construction only.

TABLE 8—CALCULATED LEVEL A AND LEVEL B HARASSMENT ISOPLETHS FOR YEAR 1 AND YEAR 2 OF THE BLBR PROJECT IN THE COLUMBIA RIVER

Pile size and material	Level A harassment distance (m)		Level B harassment distance (m)
	Phocids	Otariids	
Vibratory pile driving and removal			
14-inch steel pipe	3.5	1.2	[a] 1,847.8
24-inch steel pipe	5.5	1.9	[a] 2,928.6
24-inch steel sheet	29.7	10	[a] 7,356.4
Impact pile driving			
14-inch steel pipe	258.9	96.5	464.2
24-inch steel pipe	258.9	96.5	[a] 1,000
24-inch steel sheet	[a] 1,022.5	381.1	857.7

[a] Level A and B harassment zones are truncated by land at 860 m.

Marine Mammal Occurrence

In this section we provide information about the occurrence of marine mammals, including density or other relevant information which will inform the take calculations.

For the BLBR Project, incidental take is expected to occur for harbor seals, California sea lions, and Steller sea lions. The occurrence of all three marine mammal species was derived from monitoring data collected by the USACE for salmonid predation monitoring below Bonneville Dam. In the initial application, the USACE estimated the occurrence of harbor seals, California sea lions, and Steller sea lions for the proposed project based on the 10-year

maximum daily abundance data for each species published in Pinniped Monitoring Reports from the USACE Portland District Fisheries Field Unit. Upon review, NMFS determined that these USACE data did not align with the in-water work window and did not accurately represent the occurrence of pinnipeds in the BLBR project area during the proposed construction activities.

Following coordination between the USACE and NMFS, and subsequent revisions to the application, the USACE provided summary data on February 4, 2026, for the past 5 years of pinniped monitoring at Bonneville Dam from December through February, spanning 2020 through 2025 (Tidwell, pers. comm., 2026). The data provided by the USACE Portland District Fisheries Field Unit were binned temporally for the months of December through February to account for the in-water work window for the BLBR Project. The USACE then calculated the 3-year and 5-year average daily abundance of Steller sea lions for the months of December, January, and February (table 9). These data show that there is a wide range in variability for Steller sea lion abundance below Bonneville Dam during the proposed in-water work window for the BLBR Project. Given the project's brief 8-day duration for each year of construction, it is possible that all in-water work could be concentrated at the beginning of work window when Steller sea lion abundance is the highest. To account for this, NMFS utilized a daily occurrence of eight Steller sea lions per day of construction. This methodology accounts for the potential for all pile driving to occur during the month of December.

TABLE 9—STELLER SEA LION OCCURRENCE FOR THE COLUMBIA RIVER AT BONNEVILLE DAM

Month	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025	3-yr avg.	5-yr avg.
December	20.4	7.7	4.3	3.0	4.1	3.8	7.9
January	2.2	1.8	1.4	0.5	2.5	1.5	1.7
February	2.0	1.0	0.0	0.1	0.7	0.3	0.8

The data from the USACE Portland District Fisheries Field Unit also indicated that California Sea lions and harbor seals are relatively uncommon during the proposed in-water work window with only one sighting of each species at Bonneville Dam between December and February, spanning from 2020 through 2025 (Tidwell, pers. comm., 2026). Therefore, it is assumed that up to one California sea lion and one harbor seal could occur in the project area each day of pile driving or pile removal for both years of the BLBR Project.

Take Estimation

Here we describe how the information provided above is synthesized to produce a quantitative estimate of the take that is reasonably likely to occur and proposed for authorization.

Steller Sea Lion

The USACE proposed to estimate Level A harassment of Steller sea lions based on the proportion of the largest pile driving isopleth (impact or vibratory) for each pile size relative to the average river channel width at the construction site for Year 1 construction (table 10). The largest pile driving isopleth between impact and vibratory pile driving is used below because vibratory and impact pile driving for each pile size is expected to occur on the same day. NMFS agrees that USACE's proposed approach would provide an accurate estimate for the number of individual Steller sea lions that could be incidentally taken by Level A harassment and presents more details about these methods below.

TABLE 10—PROPORTION OF STELLER SEA LION EXPOSURE BY PILE SIZE FOR YEAR 1 OF THE BLBR PROJECT

Installation method [a]	Pile type	Predicted largest isopleth (m)	Average channel width (m)	Proportion of channel width ensonified	Total days of pile driving
Unattenuated Impact Installation	14-inch steel pipe	96.5	795	0.12	2
Unattenuated Impact Installation	24-inch steel pipe	96.5	795	0.12	2
Unattenuated Impact Installation	24-inch steel sheet	381.1	795	0.48	4

[a] Only the largest harassment zone (impact or vibratory installation) per pile size was included because both methods would occur on the same day and take was calculated with the largest of the two zones.

NMFS used the following formula to calculate take by Level A harassment for Steller sea lions for Year 1 of the BLBR Project:

Level A harassment = (Largest predicted Level A harassment isopleth (m)/ Average river channel width (m)) × Total days of pile driving × 5-year average daily occurrence of Steller sea lions at Bonneville Dam during the month of December (rounded to the nearest whole number)

During Year 1 of the BLBR Project, the largest Level A harassment Isopleth would occur during impact pile driving of 24-inch steel sheet piles. The Level A isopleth to Steller sea lions is 381.1 m. Dividing this by the average channel width of 795 m results in an isopleth ratio of 0.48 (table 10).

To estimate take, this ratio (0.48) was multiplied by the total duration of pile driving days for 24-inch steel sheet piles (4 days) and the 5-year average occurrence of Steller sea lions at Bonneville Dam during the month of December (rounded to the nearest whole number). This results in 15 takes by Level A harassment of Steller sea lions for the installation of 24-inch steel sheet piles. The same approach was used for each pile size, which were then added together and results in a rounded estimate of 19 takes by Level A harassment for Steller sea lions. Accordingly, NMFS proposes to authorize 19 takes by Level A harassment for Steller sea lions for Year 1 construction activities.

The calculated Level A harassment isopleths for Steller sea lions during Year 2 construction for the BLBR Project are small, with the largest harassment zone of 10 m. Therefore, no Level A harassment for Steller sea lions is expected or proposed for authorization for Year 2 (tables 11 and 12).

NMFS used the following formula to calculate Level B harassment per pile size for Steller sea lions for both Year 1 and Year 2 activities:

Level B harassment (per pile size) = [(Expected Days of Pile Driving (Year 1) or Pile Removal (Year 2)) × 5-Year Average Daily Occurrence of Steller Sea Lions at Bonneville Dam During the Month of December (Rounded to the Nearest Whole Number)] − Calculated Take by Level A harassment

The total Level B harassment of Steller sea lions for Year 1 and Year 2 of the BLBR project was calculated by subtracting the predicted amount of take by Level A harassment from expected total exposures per pile size and then summing the remaining takes by Level B harassment for all pile types.

TABLE 11—TAKE BY LEVEL A AND B HARASSMENT OF STELLER SEA LIONS FOR YEAR 1 OF THE BLBR PROJECT

Pile size and material	Expected pile driving days	Take by Level A harassment	Take by Level B harassment
14-inch steel pipe	2	2	14
24-inch steel pipe	2	2	14
24-inch steel sheet	4	15	17
Total Takes by Level A and Level B Harassment (all piles)	.....	19	45

TABLE 12—TAKE BY LEVEL A AND B HARASSMENT OF STELLER SEA LIONS FOR YEAR 2 OF THE BLBR PROJECT

Pile size and material	Expected pile driving days	Take by Level A harassment	Take by Level B harassment
14-inch steel pipe	2	0	16
24-inch steel pipe	2	0	16
24-inch steel sheet	4	0	32
Total Takes by Level B Harassment (all piles)	.....	0	64

Harbor Seal

Harbor seals are relatively uncommon in the LCR below Bonneville Dam from December through February, with only one individual observed during USACE's pinniped monitoring during these months over the past 5 years. However, harbor seals could occur in the BLBR Project area daily during each year of the proposed activities. For Year 1 and Year 2 construction, the USACE estimated that one harbor seal will enter Level A or Level B harassment zones and remain in the zone long enough to be taken. USACE requested a combined total of 16 takes by Level A and Level B harassment over the 2 year construction period. NMFS agrees with USACE's estimate that one harbor seal may occur in the project area each day of construction.

However, larger Level A harassment zones would only occur during Year 1 impact pile driving. Because impact pile driving is scheduled to occur each day of in-water construction during Year 1, a harbor seal could enter and remain in Level A harassment zones long enough to be taken by Level A harassment. For Year 1, NMFS proposes to authorize 1 take by Level A harassment for harbor seals each day of construction, for a total of eight takes by Level A harassment.

For Year 2 of the BLBR Project, activities are limited to vibratory pile removal, and the resulting Level A harassment zones are relatively small (maximum calculated zone of 29.7 m). It is unlikely that harbor seals would enter and remain within these small Level A harassment zones long enough to incur Level A harassment. Therefore, Level A harassment of harbor seals during Year 2 is not anticipated or proposed for authorization.

Because harbor seals are relatively uncommon during the in-water work window and NMFS proposes to authorize eight takes by Level A harassment during Year 1, no additional takes by Level B harassment are proposed for Year 1. Any incidental take by Level B harassment occurring during Year 1 would be accounted for under the proposed take by Level A harassment, as Level B harassment is a less severe form of take. For Year 2 construction, no Level A harassment is proposed; however, harbor seals have the potential to enter Level B harassment zones each day of in-water work. Therefore, NMFS proposes to authorize eight takes by Level B harassment of harbor seals for Year 2.

California Sea Lion

Similar to harbor seals, California sea lions are uncommon in the Columbia River below Bonneville Dam from December through February, with only one individual observed by USACE over the past 5 years. Although uncommon, California sea lions have the potential to occur in the project area each day of in-water construction. USACE requested a total of 16 California sea lion takes across the two-year project but did not differentiate how the takes would be allocated between the two consecutive IHAs. NMFS agrees that it is reasonably likely that one California sea lion could occur in the project area each day of construction.

As previously described, impact pile driving will only occur during Year 1. Level A harassment zones are largest during impact pile driving, with the largest calculated zone of 381.1 m. Due to the size of this Level A harassment zone, a California sea lion could enter and remain in this zone long enough to incur take by Level A harassment. Accordingly, NMFS proposes to authorize a total of one take by Level A harassment for California sea lions for Year 1.

Conversely, Year 2 construction involves only vibratory pile removal, where the largest calculated harassment zone is 10 m. It is highly unlikely that a California sea lion would enter and remain within these small harassment zones long enough to be taken by Level A harassment. Therefore, take by Level A harassment for California sea lions during Year 2 is not anticipated or proposed for authorization.

To calculate take by Level B harassment for California sea lions during Year 1 and Year 2 construction, NMFS used the following formula:

Take by Level B Harassment = (Total Days of pile Driving (Year 1) or Pile Removal (Year 2)) × Expected Occurrence of California sea lions) − Calculated Take by Level A Harassment

Using the formula for Level B harassment above, the calculated take equates to seven takes of California sea lions for Year 1 and eight takes for Year 2. Therefore, NMFS proposes to authorize seven takes for Year 1 and eight takes for Year 2 by Level B harassment for California sea lions.

The total takes by Level A and Level B harassment proposed for authorization are presented in table 13 and table 14, for Year 1 and Year 2 of the BLBR Project, respectively.

TABLE 13—ESTIMATED TAKE BY LEVEL A AND LEVEL B HARASSMENT PROPOSED FOR AUTHORIZATION FOR YEAR 1 OF THE BLBR PROJECT

Species	Stock	Proposed take		Percentage of stock
		Level A harassment	Level B harassment	
California Sea Lion	U.S.	1	7	<1
Steller Sea Lion	Eastern	19	45	<1
Harbor Seal	OR/WA Coastal	8	0	[a] <1

[a] The SAR lists the abundance for this stock as unknown; Pearson *et al.,* 2024 report an estimate of 22,549, which we used in this analysis.

TABLE 14—ESTIMATED TAKE BY LEVEL A AND LEVEL B HARASSMENT PROPOSED FOR AUTHORIZATION FOR YEAR 2 OF THE BLBR PROJECT

Species	Stock	Proposed take		Percentage of stock
		Level A harassment	Level B harassment	
California Sea Lion	U.S.	0	8	<1
Steller Sea Lion	Eastern	0	64	<1
Harbor Seal	OR/WA Coastal	0	8	[a] <1

[a] The SAR lists the abundance for this stock as unknown; Pearson *et al.,* 2024 report an estimate of 22,549, which we used in this analysis.

Proposed 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, NMFS considers 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.

The mitigation requirements described in the following were proposed by USACE in its adequate and complete application or are the result of subsequent coordination between NMFS and USACE. USACE has agreed that all of the mitigation measures are practicable. NMFS has fully reviewed the specified activities and the mitigation measures to determine if the mitigation measures would result in the least practicable adverse impact on marine mammals and their habitat, as required by the MMPA, and has determined the proposed measures are appropriate. NMFS describes these below as proposed mitigation requirements, and has included them in the proposed IHAs. In addition to the measures described later in this section, the USACE would follow these general mitigation measures:

- Authorized take, by Level A and Level B harassment only, would be limited to the species and numbers listed in tables 13 and 14. Construction activities must be halted upon observation of either a species for which incidental take is not authorized or a species for which incidental take has been authorized but the authorized number of takes has been met, entering or is within the harassment zone.
- The taking by serious injury or death of any of the species listed in tables 13 and 14 or any taking of any other species of marine mammal would be prohibited and would result in the modification, suspension, or revocation of the IHAs, if issued. Any taking exceeding the authorized amounts listed in tables 13 and 14 would be prohibited and would result in the modification, suspension, or revocation of the IHAs, if issued.
- Ensure that construction supervisors and crews, the marine mammal monitoring team, and relevant USACE staff are trained prior to the start of all construction activities, so that responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures are clearly understood. New personnel

joining during the projects must be trained prior to commencing work;

- The USACE, construction supervisors and crews, protected species observers (PSOs), and relevant USACE staff must avoid direct physical interaction with marine mammals during construction activity. If a marine mammal comes within 10 meters of such activity, operations must cease and vessels must reduce speed to the minimum level required to maintain steerage and safe working conditions, as necessary to avoid direct physical interaction;
- Employ PSOs and establish monitoring locations as described in Section 5 of the IHAs and the USACE's Marine Mammal Monitoring and Reporting Plan (see chapter 13 of the USACE BLBR Project IHA application). The USACE must monitor the project area to the maximum extent possible based on the required number of PSOs, required monitoring locations, and environmental conditions.

Additionally, the following mitigation measures apply to the USACE's in-water construction activities for Year 1 and Year 2 of the BLBR Project.

Establishment of Shutdown Zones

The USACE would establish shutdown zones with radial distances as identified in tables 15 and 16 for all construction activities. The purpose of a shutdown zone is generally to define an area within which shutdown of the activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). If a marine mammal enters or is observed within the shutdown zones indicated in tables 15 and 16, pile driving must be delayed or halted. Operations may only resume once the animal is visually confirmed outside the zone or 15 minutes have passed without a re-detection.

Construction supervisors and crews, PSOs, and relevant USACE staff must avoid direct physical interaction with marine mammals during construction activities. If marine mammals come within 10 m of such activity, operations must cease, to avoid direct interaction. If an activity is delayed or halted due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zone indicated in tables 15 and 16 or 15 minutes have passed without re-detection of the animal.

Finally, construction activities must be halted upon observation of a species for which incidental take is not authorized or a species for which incidental take has been authorized but the authorized number of takes has been met entering or within any shutdown zone. If a marine mammal species not covered under these IHAs enters a shutdown zone, all in-water activities would cease until the animal leaves the zone or has not been observed for at least 15 minutes. Pile driving may proceed if the unauthorized species is observed leaving the clearance and shutdown zone or if 15 minutes have passed since the last observation.

TABLE 15—PROPOSED SHUTDOWN ZONES FOR YEAR 1 OF THE BLBR PROJECT

Pile size, type, and method	Minimum shutdown zone (m)	
	Phocid	Otariid
14-inch, steel pipe pile, vibratory installation	10	
24-inch, steel pipe pile, vibratory installation		
24-inch, steel sheet pile, vibratory installation		
14-inch, steel pipe pile, impact installation	50	
24-inch, steel pipe pile, impact installation		
24-inch, steel sheet pile, impact installation		

TABLE 16—PROPOSED SHUTDOWN ZONES FOR YEAR 2 OF THE BLBR PROJECT

Pile size, type, and method	Minimum shutdown zone (m)	
	Phocid	Otariid
14-inch, steel pipe pile, vibratory removal	10	
24-inch, steel pipe pile, vibratory removal		
24-inch, steel sheet pile, vibratory removal		

Soft-Start Procedures for Impact Driving

Soft-start procedures are used to provide additional protection to marine mammals by providing warning and/or giving marine mammals a chance to leave the area prior to an impact hammer operating at full capacity. The USACE would use soft-start techniques when impact pile driving. Soft-start procedures require contractors to provide an initial set of three strikes at reduced energy, followed by a 30-second waiting period, then two subsequent reduced-energy strike sets. A soft-start would be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer.

Based on our evaluation of the applicant's proposed measures, NMFS has preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance. NMFS conducted an independent evaluation of the proposed measures, and has preliminarily determined for each of the proposed IHAs that the proposed mitigation measures provide the means of effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Proposed 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 while conducting the activities. 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 activity; or (4) biological or behavioral context of exposure (*e.g.,* age, calving or feeding areas);
- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors;
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks;
- Effects on marine mammal habitat (*e.g.,* marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat); and
- Mitigation and monitoring effectiveness.

The monitoring and reporting requirements described in the following were proposed by USACE in its adequate and complete application and/or are the result of subsequent coordination between NMFS and USACE. USACE has agreed to the requirements. NMFS describes these below as requirements and has included them in the proposed IHAs.

Visual Monitoring

All PSOs must be NMFS-approved and have no other assigned tasks during monitoring periods. At least one PSO would have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued ITA or Letter of Concurrence.

During all in-water work for both years of the BLBR Project, a minimum of two PSOs would monitor Level A and Level B harassment zones to the extent practicable to document the marine mammal's presence and behavior. PSOs would monitor for marine mammals 30 minutes before, during, and 30 minutes after the specified activities from the construction barge and from the shore nearby that provides the best field of view. Additionally, observers would record all incidents of marine mammal occurrence, regardless of distance from activity, and would document any behavioral reactions in concert with distance from piles being driven or removed. Pile driving activities include the time to install or remove a single pile or series of piles, as long as the time elapsed between uses of the pile driving equipment is no more than 30 minutes.

PSOs should also 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.

Reporting

The USACE would be required to submit a draft report(s) on all construction activities and marine mammal monitoring results to NMFS within 90 days of the completion of monitoring, or 60 days prior to the requested issuance of any subsequent IHAs or similar activities at the same locations, whichever comes first. The information required to be collected and reported to NMFS is included in the draft IHAs available at *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities.* In summary, the reports would include, but not be limited to, information regarding activities that occurred, marine mammal sighting data, and whether mitigative actions were taken or could not be taken. The USACE would also be required to submit reports on any observed injured or dead marine mammals. If the death or injury was clearly caused by the specified activity, the USACE would 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 IHAs. The USACE would not resume its activities until notified by NMFS.

Specific proposed mitigation, monitoring, and reporting requirements can be found in the draft IHAs found at *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities.*

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 impacts or responses (*e.g.,* intensity, duration), the context of any impacts or responses (*e.g.,* critical reproductive time or location, foraging impacts affecting energetics), 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' 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, or ambient noise levels).

To avoid repetition, the discussion of our analysis applies to California sea lions, Steller sea lions, and harbor seal, given that the anticipated effects of this activity on these different marine mammal stocks are expected to be similar. There is little information about the nature or severity of the impacts, or the size, status, or structure of any of these species or stocks that would lead to a different analysis for this activity.

NMFS has identified key factors which may be employed to assess the level of analysis necessary to conclude whether potential impacts associated with a specified activity should be considered negligible. These include (but are not limited to) the type and magnitude of taking, the amount and importance of the available habitat for the species or stock that is affected, the duration of the anticipated effect to the species or stock, and the status of the species or stock. The following factors support negligible impact determinations for all affected stocks. Additionally, for both projects, pile driving will be restricted to daylight hours only. This allows animals to forage in the project area and use the habitat during nighttime hours without the potential for noise-related harassment.

Pile driving and removal activities associated with Year 1 and Year 2 of the BLBR Project, as outlined previously, have the potential to disturb or displace marine mammals. Specifically, the specified activities may result in take, in the form of Level A and Level B harassment, from underwater sounds generated by impact and vibratory pile driving, and vibratory pile removal. Potential takes could occur if individuals are present in the ensonified zone when these activities are underway.

For Year 1 of the BLBR Project, take by Level A harassment is proposed to be authorized for California sea lions, Steller sea lions, and harbor seals to account for the possibility that an animal could enter a Level A harassment zone prior to detection, and remain within that zone for long enough to incur AUD INJ, *i.e.,* minor degradation of hearing capabilities within regions of hearing that align most completely with the energy produced by impact and vibratory pile driving (*i.e.,* the low-frequency region below 2 kilohertz (kHz)), not severe hearing impairment or impairment within the ranges of greatest hearing sensitivity. Animals would need to be exposed to higher levels and/or longer duration than are expected to occur here in order to incur any more than a small degree of AUD INJ. If hearing impairment occurs, it is most likely that the affected animal would lose only a few dB in its hearing sensitivity. Due to the small degree anticipated, any AUD INJ from Level A harassment potentially incurred is not expected to impair an individual's ability to communicate, forage, or detect predators to a level that would impact reproductive success or survival, much less result in adverse impacts on the species or stock.

For Year 1 of the BLBR project, NMFS proposes to authorize 1 take for California sea lions, 19 takes for Steller sea lions, and 8 takes for harbor seal by Level A harassment, representing a small portion of each species' stock abundance. Because the ensonified area is relatively small, confined, and does not span the entire width of the river channel, animals can transit through the area outside the ensonified zones or during construction breaks, thereby reducing their potential for Level A harassment.

For Year 2 of the BLBR Project, Level A harassment is extremely unlikely given the small size of the Level A harassment isopleths predicted and the required mitigation measures designed to minimize the possibility of injury to marine mammals. No serious injury or mortality is anticipated given the nature and duration of the activity.

As described above, NMFS expects that marine mammals would likely move away from an aversive stimulus, especially at levels that would be expected to result in AUD INJ, given sufficient notice through use of soft-start. The USACE would also be required to shut down pile driving activities if marine mammals approach within hearing group-specific zones (see tables 15 and 16), further minimizing the likelihood and degree of AUD INJ and more severe behavioral responses. Even absent mitigation, no serious injury or mortality from construction activities is anticipated and none is proposed to be authorized.

Effects on individuals that are taken by Level B harassment in the form of behavioral disruption, on the basis of reports in the literature as well as monitoring from other similar activities, would likely be limited to reactions such as avoidance, increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring) (*e.g.,* Thorson and Reyff 2006). Most likely, individuals would simply move away from the sound source and temporarily avoid the area where pile driving is occurring. This avoidance is particularly expected given the project area's proximity to the Bonneville Dam, locks, and the FNC, which feature elevated ambient noise from dam operations and heavy commercial and recreational vessel traffic. We expect that any avoidance of the project area by marine mammals would be temporary in nature and that any marine mammals that avoid the project area during construction would not be permanently displaced. Pinnipeds on nearby haulouts may remain on these haulouts for longer or swim with their heads out of the water more often. Short-term avoidance of the project area and energetic impacts of interrupted foraging or other important behaviors is unlikely to affect the reproduction or survival of individual marine mammals, and the effects of behavioral disturbance on individuals are not likely to accrue in a manner that would affect the rates of recruitment or survival of any affected stock.

Additionally, and as noted previously, some subset of the individuals that are behaviorally harassed could simultaneously incur some small degree of TTS for a short duration of time. However, since the hearing sensitivity of individuals that incur TTS is expected to recover completely within minutes to hours, it is unlikely that the brief hearing impairment would affect the individual's long-term ability to forage and communicate with conspecifics, and would therefore not likely impact reproduction or survival of any individual marine mammal, let alone adversely affect rates of recruitment or survival of the species or stock.

The BLBR Project is not expected to have significant adverse effects on affected marine mammal habitats. The project activities would not modify existing marine mammal habitat for a significant amount of time. The activities may cause some fish to leave the area of disturbance, thus temporarily impacting marine mammals' foraging opportunities in a limited portion of the foraging range; but, because of the short duration of the activities and the relatively small area of the habitat that may be affected (with no known particular importance to marine mammals), the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences.

In the BLBR Project area, California sea lions, Steller sea lions, and harbor seals have been documented hauling out on Cascades, Bedford, and Tower Islands as well as the nearby sea lion trap. Although the construction site is approximately 260 m from the closest haulout, in water construction would be

restricted to the months for December through February when pinnipeds are expected to be the least prevalent. Data collected from USACE indicates a high seasonal variability in pinniped occurrence at the project site, with only one California sea lion and one harbor seal observed during these months over the past 5 years. Similarly, for Steller sea lions 5-year average ranged from approximately eight animals in December to less than one animal in February (Tidwell, Personal communication, 2026).

Given the implementation of mitigation measures, the availability of alternative foraging areas and haulout sites in the Columbia River, the localized nature of the ensonified areas, and the projects short overall duration (8 days for Year 1 and 8 days for Year 2), the proposed activities are expected to have a negligible impact on the effected pinniped stocks.

Additionally, the BLBR project is a very small portion of each stock of California sea lions, Steller sea lions, and harbor seals overall range, with only a small portion of each stock expected to occur in the project area. Consequentially, the take requested does not represent a broad impact across the entire stock but rather repeated exposures to the same individuals. Although pinnipeds that haul out in the project area may experience short term exposure to elevated noise levels, such as intermittent disturbances, which are not expected to result in chronic stress or physical injury that would reduce fitness, survival, or reproductive success of any individual. Because the anticipated impacts are localized to a small subset of the population and are not expected to affect the health of those individuals, the take proposed for authorization would not reach a level of biological significance that would affect annual rates of recruitment or survival for the US stock of California sea lions, Eastern stock of Steller sea lions, and the Oregon/Washington coastal stock of harbor seals.

In summary and as described above, the following factors primarily support our preliminary determination that the impacts resulting from the Year 1 specified activities are not expected to adversely affect any of the species or stocks through effects on annual rates of recruitment or survival:

- No serious injury or mortality is anticipated or proposed to be authorized;
- The intensity of anticipated takes by Level A and Level B harassment is low for all stocks and would not be of a duration or intensity to result in impacts on reproduction or survival;
- The anticipated incidents of Level A harassment (AUD INJ) is limited to a small degree of PTS and would only effect a small number of individuals;
- The ensonified areas are very small relative to the overall habitat ranges of all species and stocks, and would not adversely affect ESA-designated critical habitat for any species or any areas of known biological importance;
- The lack of anticipated significant or long-term negative effects to marine mammal habitat;
- The availability of nearby areas of similar habitat value (*e.g.,* foraging and haulout habitats) within and outside the LCR;
- Impacts on marine mammal feeding are not expected to result in significant or long-term consequences for individuals, or to accrue adverse impacts on their populations;
- The USACE would implement mitigation measures, such as soft-starts for impact pile driving and shutdowns to minimize the numbers of marine mammals exposed to injurious levels of sound, and to ensure that take by Level A harassment, is at most, a small degree of auditory injury.
- Previous monitoring reports for similar activities in the LCR have documented little to no behavioral effect on individuals.

In summary and as described above, the following factors primarily support our preliminary determination that the impacts resulting from the Year 2 specified activities are not expected to adversely affect any of the species or stocks through effects on annual rates of recruitment or survival:

- No serious injury or mortality is anticipated or authorized;
- No take by Level A harassment are anticipated or proposed to be authorized;
- The anticipated incidents of Level B harassment would consist of, at worst, temporary modifications in behavior that would not result in fitness impacts to individuals;
- The intensity of anticipated takes by Level B harassment is low for all stocks and would not be of a duration or intensity to result in impacts on reproduction or survival;
- The ensonified areas are very small relative to the overall habitat ranges of all species and stocks, and would not adversely affect ESA-designated critical habitat for any species or any areas of known biological importance;
- The lack of anticipated significant or long-term negative effects to marine mammal habitat;
- The availability of nearby areas of similar habitat value (*e.g.,* foraging and haulout habitats) within and outside the LCR;
- Impacts on marine mammal feeding are not expected to result in significant or long-term consequences for individuals, or to accrue adverse impacts on their populations; and
- Previous monitoring reports for similar activities in the LCR have documented little to no behavioral effect on individuals.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the proposed monitoring and mitigation measures, NMFS preliminarily finds that:

1. The total marine mammal take from the proposed activities for the Year 1 IHA will have a negligible impact on all affected marine mammal species or stocks.

2. The total marine mammal take from the proposed activities for the Year 2 IHA will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

As noted previously, only take of small numbers of marine mammals may be authorized under section 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 (see 86 FR 5322, January 19, 2021). Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

Consistent with the small number finding required by MMPA, NMFS has determined that the number of takes proposed for authorization is small relative to the stock abundances. For both Year 1 and Year 2 of the BLBR Project, the number of takes proposed for all three species is well below one-third of the best available population estimates, representing less than 1 percent for California sea lions, Steller sea lions, and harbor seals.

Based on the analysis contained herein of the proposed activity

(including the proposed mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS preliminarily finds for each IHA 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 for each IHA 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

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

No incidental take of ESA-listed species is proposed for authorization 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.

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to issue two consecutive IHAs to USACE for conducting the Bonneville Lock 1 Bridge Replacement Project in the Columbia River, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. Drafts of the proposed IHAs can be found at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities.*

Request for Public Comments

We request comment on our analyses, the proposed authorizations, and any other aspect of this notice of the two proposed IHAs for the proposed BLBR Project. We also request comment on the potential renewal of these proposed IHAs as described in the paragraph below. Please include with your comments any supporting data or literature citations to help inform decisions on the request for this IHA or a subsequent renewal IHA.

On a case-by-case basis, NMFS may issue a one-time, 1-year renewal IHA following notice to the public providing an additional 15 days for public comments when (1) up to another year of identical or nearly identical activities as described in the Description of Proposed Activity section of this notice is planned or (2) the activities as described in the Description of Proposed Activity section of this notice would not be completed by the time the IHA expires and a renewal would allow for completion of the activities beyond that described in the *Dates and Duration* section of this notice, provided all of the following conditions are met:

- A request for renewal is received no later than 60 days prior to the needed renewal IHA effective date.
- The request for renewal must include the following:

1. An explanation that the activities to be conducted under the requested renewal IHA are identical to the activities analyzed under the initial IHA, are a subset of the activities, or include changes so minor (*e.g.,* reduction in pile size) that the changes do not affect the previous analyses, mitigation and monitoring requirements, or take estimates.

2. A preliminary monitoring report showing the results of the required monitoring to date and an explanation showing that the monitoring results do not indicate impacts of a scale or nature not previously analyzed or authorized.

- Upon review of the request for renewal, the status of the affected species or stocks, and any other pertinent information, NMFS determines that there are no more than minor changes in the activities, the mitigation and monitoring measures will remain the same and appropriate, and the findings in the initial IHA remain valid.

Dated: June 24, 2026.

Kimberly Damon-Randall,

Director, Office of Protected Resources, National Marine Fisheries Service.

[FR Doc. 2026–12928 Filed 6–25–26; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF DEFENSE

Department of the Air Force

Notice of Record of Decision for the Environmental Impact Statement T–7A Recapitalization at Vance AFB, OK

AGENCY: Department of the Air Force, Department of Defense.

ACTION: Notice of record of decision.

SUMMARY: On June 10, 2026, the Department of the Air Force (DAF) signed the Record of Decision (ROD) for the Final Environmental Impact Statement (EIS) for T–7A Recapitalization at Vance AFB, OK.

FOR FURTHER INFORMATION CONTACT: Ms. Chinling Chen, NEPA Project Manager, by email at *chinling.chen@us.af.mil* or Headquarters AETC Public Affairs by phone at (380) 457–2633.

SUPPLEMENTARY INFORMATION: The DAF will implement its Alternative 3 to recapitalize all T–38C aircraft at Vance AFB with up to 99 T–7A aircraft, limiting initial delivery to 46 per the Secretary of the Air Force Strategic Basing Decision approving Vance AFB as the fourth T–7A Main Operating Base. DAF will execute all portions of T–7A recapitalization at Vance AFB including the operations and changes to the number of personnel and dependents as defined for Alternative 3. Alternative 3 is selected to provide DAF with operational flexibility after considering the potential environmental consequences provided in the EIS for T–7A recapitalization at Vance AFB, the comments and concerns of the public and other key stakeholders, as well as other factors related to national defense, including current military operational needs and costs. The Final EIS was made available to the public through the project website (*https://vance.t-7anepadocuments.com*), and a Notice of Availability was published in the **Federal Register** (Volume 91, Number 79, Page 2026) on April 24, 2026.

The DAF decision documented in the ROD was based on matters discussed in the Final EIS, inputs from the public and regulatory agencies, and other relevant factors. Authority for this notice is 42 U.S.C. 4321, *et seq.* and Department of Defense National Environmental Policy Act Implementing Procedures.

Crystle C. Poge,

Air Force Federal Register Liaison Officer.

[FR Doc. 2026–12892 Filed 6–25–26; 8:45 am]

BILLING CODE 3911–44–P

DEPARTMENT OF EDUCATION

[Docket No.: ED–2026–SCC–2345]

Agency Information Collection Activities; Comment Request; Request for Title IV Reimbursement or Heightened Cash Monitoring 2 (HCM2)

AGENCY: Federal Student Aid (FSA), Department of Education (ED).