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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[Docket No. FWS–R1–ES–2020–0131; FXES111401000000, 212, FF01E00000]

Marine Mammals; Incidental Take During Specified Activities; Proposed Incidental Harassment Authorization for Northern Sea Otters in the Northeast Pacific Ocean

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of receipt of application and proposed incidental harassment authorization; availability of draft environmental assessment; and request for public comments.

SUMMARY: The U.S. Fish and Wildlife Service (Service) received a request from the National Science Foundation (NSF) for authorization to take a small number of northern sea otters by harassment incidental to a marine geophysical survey in the northeast Pacific Ocean. Pursuant to the Marine Mammal Protection Act of 1972, as amended (MMPA), the Service is requesting comments on its proposal to issue an incidental harassment authorization (IHA) to NSF for certain activities during the period between May 1 and June 30, 2021. This proposed IHA, if finalized, will be for take by Level A and Level B harassment. We anticipate no take by death and include none in this

proposed authorization. The Service has prepared a draft environmental assessment (EA) addressing the proposed IHA and is soliciting public comments on both documents.

DATES: Comments on the proposed IHA request and the draft EA will be accepted on or before [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: *Document availability:* The proposed IHA request, the draft EA, and the list of references cited herein are available for viewing at *http://www.regulations.gov* in Docket No. FWS–R1–ES–2020–0131 and at *http://www.fws.gov/wafwo*. NSF's associated environmental assessments can be found at https://www.nsf.gov/geo/oce/envcomp/.

Comment Submission: You may submit comments on this proposed authorization by one of the following methods:

- U.S Mail: Public Comments Processing, Attn: Docket No. FWS–R1–ES–2020–0131, U.S. Fish and Wildlife Service, 5275 Leesburg Pike, MS: PRB/3W, Falls Church, VA 22041–3803; or
- Federal eRulemaking Portal: *http://www.regulations.gov.* Follow the instructions for submitting comments to Docket No. FWS–R1–ES–2020–0131.

We will post all comments on *http://www.regulations.gov.* You may request that we withhold personal identifying information from public review; however, we cannot guarantee that we will be able to do so. See **Request for Public Comments** for more information.

FOR FURTHER INFORMATION CONTACT: Brad Thompson, State Supervisor, U.S. Fish and Wildlife Service, Washington Fish and Wildlife Office, 510 Desmond Drive SE, Suite 102, Lacey, WA 98503–1273 (telephone 360–753–9440).

SUPPLEMENTARY INFORMATION:

Background

Section 101(a)(5)(D) of the Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. 1361, *et seq*.), authorizes the Secretary of the Interior 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 region during a period of not more than 1 year. Incidental take may be authorized only if statutory and regulatory procedures are followed and the U.S. Fish and Wildlife Service (hereafter, "the Service" or "we") makes the following findings: (i) the take is of a small number of marine mammals; (ii) the take will have a negligible impact on the species or stock; and (iii) take will not have an unmitigable adverse impact on the availability of the species or stock for subsistence uses by coastal-dwelling Alaska Natives. As part of the authorization process, we prescribe permissible methods of taking and other means of affecting the least practicable impact on the species or stock and its habitat and prescribe requirements pertaining to the monitoring and reporting of such takings.

The term "take," as defined by the MMPA, means to harass, hunt, capture, or kill, or to attempt to harass, hunt, capture, or kill any marine mammal (16 U.S.C. 1362(13)). Harassment, as defined by the MMPA, means "any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (the MMPA refers to this impact as 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 (the MMPA refers to these impacts as Level B harassment) (See 16 U.S.C. 1362(18)).

The terms "negligible impact," "small numbers," and "unmitigable adverse impact" are defined in the Code of Federal Regulations at 50 CFR 18.27, the Service's regulations governing take of small numbers of marine mammals incidental to specified activities. "Negligible impact" is defined 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. "Small numbers" is defined as a portion of a marine mammal species or stock whose taking would have a negligible impact on that species or stock. However, we do not rely on that definition as it conflates the terms "small numbers" and "negligible impact," which we recognize as two separate and distinct requirements (see *Natural Res. Def. Council, Inc.* v. *Evans*, 232 F. Supp. 2d 1003, 1025 (N.D. Cal. 2003)). Instead, in our small numbers determination, we evaluate whether the number of marine mammals likely to be taken is small relative to the size of the overall population. "Unmitigable adverse impact" is defined as an impact resulting from the specified activity (1) that is likely to reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by (i) causing the marine mammals to abandon or avoid hunting areas, (ii) directly displacing subsistence users, or (iii) placing physical barriers between the marine mammals and the subsistence hunters; and (2) that cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met. The subsistence provision does not apply to northern sea otters in Washington and Oregon.

If the requisite findings are made, we will issue an IHA, which sets forth the following: (i) permissible methods of taking; (ii) other means of effecting the least

practicable impact on marine mammals and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance; and (iii) requirements for monitoring and reporting take.

Summary of Request

On December 19, 2019, the Service received an application from the National Science Foundation (hereafter "NSF" or "the applicant") for authorization to take the northern sea otter (*Enhydra lutris kenyoni*, hereafter "sea otters" or "otters" unless another subspecies is specified) by unintentional harassment incidental to a marine geophysical survey of the Cascadia Subduction Zone off the coasts of Washington, Oregon, and British Columbia, Canada. The NSF subsequently postponed the project until 2021.

Description of the Activities and Specified Geographic Region

The specified activity (the "project") consists of Lamont-Doherty Earth Observatory's (L–DEO) 2020 Marine Geophysical Surveys by the Research Vessel *Marcus G. Langseth* (R/V *Langseth*) in the Northeast Pacific Ocean between May 1 and June 31, 2021. The high-energy, two-dimensional (2-D) seismic surveys are expected to last for a total of 40 (nonconsecutive) days, including approximately 37 days of seismic operations, 2 days of equipment deployment/retrieval, and 1 day of transit. A maximum of 6,890 km (4,281 mi) of transect lines would be surveyed in marine waters adjacent to Oregon, Washington, and British Columbia from 41^0 N to 50^0 N latitude and -124 N and -130 W longitude, of which approximately 6,600 km (4,101 mi) would be in the U.S. Exclusive Economic Zone and 295 km (183 mi) in Canadian territorial waters. The Service cannot authorize the incidental take of marine mammals in waters not under the jurisdiction of the United States, and the Washington stock of the northern sea otter is not

found within Canadian territorial waters. Therefore, the Service's calculation of estimated incidental take is limited to the specified activity occurring in United States jurisdictional waters within the stock's range.

The survey would include several strike lines, parallel (including one continuous line along the continental shelf) and perpendicular to the coast. The R/V *Langseth* will tow 4 strings containing an array of 36 airguns at a depth of 12 m (39 ft), creating a discharge volume of approximately 6,600 cubic inches (in^3) or 0.11 cubic meter (m^3) at a shot interval of 37.5 m (123 ft). The 36-airgun array could operate 24 hours a day, except during mitigation shutdowns, for the entirety of the 37 days of survey. The energy produced by the seismic array is broadband and ranges from a few hertz (Hz) to kilohertz (kHz); however, all but a small fraction of the energy is focused in the 10–300 Hz range (Tolstoy *et al.* 2009). The receiving system would consist of one 15-km (9.3-mi) long hydrophone streamer, Ocean Bottom Seismometers (OBSs), and Ocean Bottom Nodes (OBNs) deployed within the survey area. In addition to the operations of the airgun array, a multibeam echosounder, a single-beam dual-frequency echosounder (4 and 12 kHz), a sub-bottom profiler (SBP), and an Acoustic Doppler Current Profiler (ADCP) would be operated. Further information and technical specifications can be found in NSF's IHA application and the Service's draft EA available at: *http://www.regulations.gov*, Docket No. FWS–R1–ES–2020–0131.

Description of Northern Sea Otters in the Specified Activity Area

The proposed area of specified activity occurs within the range of the Washington stock of the northern sea otter, a portion of the species' range that is not listed under the Endangered Species Act of 1973, as amended (ESA). This stock primarily occurs along the Washington coast between Cape Flattery and Grays Harbor, but small groups have been reported in the Straits of Juan de Fuca and individual sea otters have been reported

in Puget Sound and along the Oregon coast as far south as Cape Blanco (Jeffries *et al.* 2019, USFWS 2018, unpublished observations J. Rice OSU). Among the largest members of the family Mustelidae but one of the smallest of marine mammals, northern sea otters exhibit limited sexual dimorphism (males are larger than females) and can attain weights and lengths up to 40 kg (110 lb) and 1.4 m (4.6 ft), respectively. They have a typical life span of 11–15 years (Riedman and Estes 1990). Unlike most other marine mammals, sea otters have little subcutaneous fat. They depend on their clean, dense, water-resistant fur for insulation against the cold and maintain a high level of internal heat production to compensate for their lack of blubber. Consequently, their energetic requirements are high, and they consume an amount of food equivalent to approximately 23 to 33 percent of their body weight per day (Riedman and Estes 1990).

Northern sea otters forage in both rocky and soft-sediment communities in water depths of 40 m (131 ft) or less (Laidre *et al.* 2009), although otters have been documented along the Washington coast as far as 58 km (36 mi) offshore in waters deeper than 200 m (656 ft) (Pearson 2019; supplemental data provided to USFWS). They tend to be found closer to shore during storms, but they venture farther out during good weather and calm seas (Kenyon 1975). Sea otters occasionally make dives of up to 100 m (328 ft) (Newby 1975), but the vast majority of feeding dives (more than 95 percent) occur in waters less than 40 m (131 ft) in depth (Tinker *et al.* 2006). Therefore, sea otter habitat is typically defined by the 40-m (131-ft) depth contour (Laidre *et al.* 2011).

The number of sea otters in this stock, for the purposes of this analysis, was estimated to be approximately 3,000, based on survey count data and projections for areas not surveyed. The estimated minimum abundance of the stock, based on survey count data, was 2,785 sea otters within the area between Cape Flattery and Grays Harbor, Washington, between shore and the 40-m (131-ft) depth contour (Jeffries *et al.* 2019). While systematic surveys farther offshore have not been conducted in Washington or

Oregon, otters have been documented farther offshore (Pearson 2019). Surveys conducted in Southeast Alaska found 95 percent of northern sea otters were found in areas shallower than 40 m (131 ft) and 5 percent farther offshore (Tinker *et al.* 2019). Therefore, assuming a similar proportion of sea otters in Washington occur offshore, we added 5 percent (139 sea otters) to the minimum abundance to account for otters farther offshore than 40-m (131-ft) depth contour, to get a total population estimate of 2,924 for the area between Cape Flattery and Grays Harbor. Based on best professional judgment and limited anecdotal observations, we estimate two sea otters would be somewhere along the coast between Grays Harbor and the Washington/Oregon border and two sea otters would be somewhere along the Oregon coast.

Otter densities were calculated for the area between Cape Flattery and Grays Harbor, broken down to north and south of the Quillayute River. Surveys indicate the otter population is not evenly distributed throughout the area surveyed (Jeffries *et al.* 2019), and the distribution of the population during the proposed project is likely to be similar to that detected during surveys, as work will occur during the same time of year as the surveys were conducted. (See Table 2 for density estimations). A density was not estimated for the area between Grays Harbor and the southern end of the project; rather, we assumed that the four sea otters estimated to occur there would be exposed.

Further biological information on this stock can be found in the Washington Department of Fish and Wildlife's Periodic Status Review (Sato 2018) and Recovery Plan (Lance *et al.* 2004). The sea otters in this stock have no regulatory status under the ESA. The potential biological removal (PBR) for this stock is 18 sea otters (USFWS 2018). PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. While no mortality is

anticipated or authorized here, PBR is included as a gross indicator of the status of the species.

Sea Otter Hearing

Controlled sound exposure trials on a single older male southern sea otter (*E. l. nereis*) indicate that otters can hear frequencies between 125 Hz and 38 kHz with best sensitivity between 1.2 and 27 kHz in air and 2 to 26 kHz underwater; however, these thresholds may underrepresent best hearing capabilities in younger otters (Ghoul and Reichmuth 2014). Aerial and underwater audiograms for a captive adult (14-year-old) male southern sea otter in the presence of ambient noise suggest the sea otter's hearing was less sensitive to high-frequency (greater than 22 kHz) and low-frequency (less than 1 kHz) sound than terrestrial mustelids, but was similar to that of a California sea lion (*Zalophus californianus*). However, the subject otter was still able to hear low-frequency sounds, and the detection thresholds for sounds between 0.125–1 kHz were between 116–101 dB, respectively. Dominant frequencies of southern sea otter vocalizations are between 3 and 8 kHz, with some energy extending above 60 kHz (McShane *et al.* 1995; Ghoul and Reichmuth 2012).

Potential Impacts of the Proposed Seismic Survey on Northern Sea Otters in Washington and Oregon

This section includes a summary of the ways that components of the specified activity may impact sea otters and their habitat. A more in-depth analysis can be found in the Service's draft EA (USFWS 2020). The *Estimated Take by Incidental Harassment of Sea Otters* section later in this document includes a quantitative analysis of the number of sea otters that are expected to be taken by this activity. The *Negligible Impact* section considers the content of the *Estimated Take by Incidental Harassment of Sea Otters*

section, and the *Mitigation and Monitoring* section, to draw conclusions regarding the likely impacts of these activities on the reproductive success or survivorship of individuals and how those impacts on individuals are likely to impact sea otters.

Otters may be impacted while at the surface by the presence of the vessels traveling to/from the ports to the transects and operating along the transects. Otters underwater may be impacted by the OBS/OBNs as they are deployed and the acoustic effects from the airguns, OBS/SBP/ADCP/echosounders, and ship noise.

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 signal characteristics, received levels, duration of exposure, behavioral context, and whether the sea otter is above or below the water surface. Underwater sounds are not likely to affect sea otters at the surface, due to the pressure release effect. Thus, the susceptibility of sea otters from underwater sounds would be restricted to behaviors during which the head or body is submerged, such as during foraging dives and underwater swimming and, intermittently, during grooming bouts. The proposed activities include underwater sound sources that are impulsive (airguns) and non-impulsive (OBS/SBP/ADCP/echosounders and ship noise). Potential effects from impulsive sound sources can range in severity from effects such as behavioral disturbance or tactile perception to physical discomfort, slight to severe injury of the internal organs and the auditory system, or mortality (Yelverton *et al.* 1973; Yelverton and Richmond 1981; Turnpenny and Nedwell 1994; Turnpenny *et al.* 1994).

Marine mammals exposed to high-intensity sound, or to lower-intensity sound for prolonged periods, can experience a hearing threshold shift (TS), which is the loss of hearing sensitivity at certain frequency ranges (Finneran 2015). TS can be permanent (PTS), in which case there is physical damage to the sound receptors in the ear (*i.e.*, tissue damage) and the loss of hearing sensitivity is not fully recoverable, or temporary

(TTS), in which case there is primarily tissue fatigue and the animal's hearing threshold would recover over time (Southall *et al.* 2007). Repeated sound exposure that leads to TTS could cause PTS. Temporary or permanent loss of hearing will occur almost exclusively for noise within an animal's hearing range. Given the longer exposure duration necessary to cause PTS as compared with TTS, it is considerably less likely that PTS would occur as a result of project activities because a sea otter could remove itself from exposure by coming to the surface. However, a sea otter underwater in close proximity to the higher level of sound could experience PTS. In addition, otters startled by the sound while foraging in deeper waters will be underwater longer and potentially be exposed to more acoustic sound.

Behavioral disturbance may include a variety of effects, including subtle changes in behavior (*e.g.*, minor or brief avoidance of an area, changes in vocalizations, or changes in antipredator response), more conspicuous changes in similar behavioral activities, and more sustained and/or potentially severe reactions, such as displacement from or abandonment of high-quality habitat. Reactions by sea otters to anthropogenic noise can be manifested as visible startle responses, flight responses (flushing into water from haulouts or "splash-down" alarm behavior in surface-resting rafts), changes in moving direction and/or speed, changes in or cessation of certain behaviors (such as grooming, socializing, or feeding), or avoidance of areas where noise sources are located. The biological significance of these behavioral disturbances is difficult to predict, especially if the detected disturbances appear minor. However, the consequences of behavioral modification would be expected to be biologically significant if the change affected growth, survival, or reproduction.

Potentially significant behavioral modifications include disturbance of resting sea otters, marked disruption of foraging behaviors, separation of mothers from pups, or disruption of spatial and social patterns (sexual segregation and male territoriality).

Foraging is energetically costly to sea otters, more so than other marine mammals, because of their buoyancy and swimming style (Yeates *et al.* 2007), thus displacement from or reduction of foraging in high-quality habitat could result in increased energy expenditures. The energy expense and associated physiological effects could ultimately lead to reduced survival and reproduction (Gill and Sutherland 2000; Frid and Dill 2002).

Disturbances can also have indirect effects; for example, response to noise disturbance is considered a nonlethal stimulus that is similar to an antipredator response (Frid and Dill 2002). Sea otters are susceptible to predation, particularly from sharks and eagles, and have a well-developed antipredator response to perceived threats, which includes actively looking above and beneath the water. Although an increase in vigilance or a flight response is nonlethal, a tradeoff occurs between risk avoidance and energy conservation. An animal's reactions to noise disturbance may cause stress and direct an animal's energy away from fitness-enhancing activities such as feeding and mating (Frid and Dill 2002; Goudie and Jones 2004). For example, southern sea otters in areas with heavy recreational boat traffic demonstrated changes in behavioral time budgeting showing decreased time resting and changes in haul-out patterns and distribution (Benham 2006; Maldini *et al.* 2012).

Chronic stress can also lead to weakened reflexes, lowered learning responses (Welch and Welch 1970; van Polanen Petel *et al.* 2006), compromised immune function, decreased body weight, and abnormal thyroid function (Seyle 1979). Changes in behavior resulting from anthropogenic disturbance can include increased agonistic interactions between individuals or temporary or permanent abandonment of an area (Barton *et al.* 1998). The type and extent of response may be influenced by intensity of the disturbance (Cevasco *et al.* 2001), the extent of previous exposure to humans (Holcomb *et al.* 2009), the type of disturbance (Andersen *et al.* 2012), and the age or sex of the individuals (Shaughnessy *et al.* 2008; Holcomb *et al.* 2009).

Exposure Thresholds— Although no specific thresholds have been developed for sea otters, several alternative behavioral response thresholds have been developed for otariid pinnipeds. Otariid pinnipeds (e.g., California sea lions [*Zalophus californianus*]) have a frequency range of hearing most similar to that measured in a southern sea otter (Ghoul and Reichmuth 2014) and provide the closest related proxy for which data are available. Sea otters and pinnipeds share a common mammalian aural physiology (Echteler *et al.* 1994; Solntseva 2007). Both are adapted to amphibious hearing, and both use sound in the same way (primarily for communication rather than feeding). NMFS criteria for Level A harassment represents the best available information for predicting injury from exposure to underwater sound among pinnipeds, and in the absence of data specific to otters, we assume these criteria also represent appropriate exposure thresholds for Level A harassment of sea otters.

For otariid pinnipeds, PTS is predicted to occur at 232 dB peak or 203 dB SELcum (cumulative sound exposure level) for impulsive sound, or 219 dB SELcum for non-impulsive (continuous) sound (NMFS 2018). Exposure to unmitigated in-water noise levels between 125 Hz and 38 kHz that are greater than 232 dB peak or 203 dB SELcum for impulsive sound or 219 dB SELcum for non-impulsive (continuous) sound will be considered by the Service as Level A harassment. NMFS predicts that marine mammals are likely to be behaviorally harassed in a manner considered Level B harassment when exposed to underwater anthropogenic noise above received levels of 120 dB re 1 μPa (rms) for continuous (*e.g.,* vibratory pile-driving, drilling) and above 160 dB re 1 μPa (rms) for non-explosive impulsive (*e.g.*, seismic airguns) or intermittent (*e.g.*, scientific sonar) sources (NMFS 2018).

Thresholds based on TTS can be used as a proxy for Level B harassment. Based on studies summarized by Finneran (2015), NMFS (2018) has set the TTS threshold for otariid pinnipeds at 188 dB SELcum for impulsive sounds and 199 dB SELcum for non-

impulsive sounds. Thus, using information available for other marine mammals, specifically otariid pinnipeds, as a surrogate, and taking into consideration the best available information about sea otters, the Service has set the received sound level underwater of 160 dB re 1 μPa (rms) as a threshold for Level B harassment for sea otters based on the work of Ghoul and Reichmuth (2012), McShane *et al.* (1995), Riedman (1983), Richardson *et al.* (1995), and others. Exposure to unmitigated impulsive in-water noise levels between 125 Hz and 38 kHz that are greater than 160 dB re 1 μPa (rms) will be considered by the Service as Level B harassment.

Exposure to Project Activities—Based on the studies on sea otters in Washington, California, and Alaska, we believe sea otters spend between 40 and 60 percent of a 24-hour period with at least a portion of their body underwater (foraging, other diving, or grooming behaviors that result in the head being underwater) and forage both diurnally and nocturnally (Esslinger *et al*. 2014, Laidre *et al*. 2009, Yeates *et al.* 2007, Tinker *et al.* 2008). Seismic survey activities can operate 24 hours/day and otters may be exposed at any time. Any single point along the transects could be above thresholds for a maximum of 6.5 hours, during which time sea otters in that area would engage in underwater behaviors and would be exposed to underwater sound. Some areas along the transects will be ensonified more than once.

Because sea otters spend a considerable portion of their time at the surface of the water, they are typically visually aware of approaching boats and are able to move away if the vessel is not traveling too quickly. The noise of approaching boats provides an additional warning, thus otters should be able to detect the vessels and paddle away, rather than be startled and go subsurface. Because the R/V *Langseth* would be traveling relatively slowly (4.5 knots) during the surveys, it is unlikely that sea otters would suffer injury or death from a vessel collision. Otters that may be foraging may be startled by the

remotely operated vehicle deployed to retrieve OBNs in waters > 60 m (197 ft) along three transects perpendicular to the Oregon coast.

The potential for exposure to all activities is likely to be limited to where the vessel is operating in waters < 1,000 m (3,280 ft) deep, as we do not anticipate otters to be farther offshore. Off the Washington coast, females primarily forage and rest in waters < 40 m (131 ft), but males spend less time foraging close to shore and rest farther offshore than females (Laidre *et al*. 2009), venturing as far offshore as 58 km (36 mi) (Pearson 2019). Within the waters adjacent to Washington and northern Oregon (to Tillamook Head), the ensonified zone would not penetrate the waters between shore and the 40-m (131-ft) depth contour, thus sea otters that may be exposed are more likely to be the males that occur farther offshore. The otters along the Oregon coast are presumed to be males, based on stranding data (FWS unpublished data).

NSF and L–DEO have proposed measures to minimize the chances of sea otter exposure to the seismic surveys. Along the Washington coast in waters < 200 m (656 ft) deep, the airgun array would operate only during daylight hours. The airgun startup would be ramped in order to alert otters that are underwater, in the hope they would move away. Prior to airgun startup and during airgun operations, visual observers would be employed during daylight hours, in order to establish a 500-m (1,640 ft) exclusion zone. Any sea otter observed in this zone would lead to a shutdown of the airgun array. However, there will be gaps in the visual coverage, in particular during nighttime operations in Oregon and beyond 200 m (656 ft) in Washington. In addition, under poor weather conditions and some good weather conditions, observers cannot be 100 percent effective and may not detect a sea otter in, or about to enter, the exclusion zone. Further, visual observations cannot cover the entirety of the area with sound levels that may cause behavioral changes. The lack of ability to fully monitor the ensonified area means an

otter(s) may go unobserved and be exposed to underwater noise that results in Level A and/or Level B harassment.

Potential Effects of the Proposed Activity on Northern Sea Otter Habitat

Physical and biological features of habitat essential to the conservation of sea otters include the benthic invertebrates (crabs, urchins, mussels, clams, etc.) eaten by otters and the shallow rocky areas and kelp beds that provide cover from predators. Important sea otter habitat areas of significance in the NSF and L–DEO project area include coastal areas within the 40-m (131-ft) depth contour where high densities of otters have been detected, although deeper waters may be important for male sea otters. A number of recent reviews and empirical studies have addressed the effects of noise on invertebrates (Carroll *et al.* 2017), sea otter prey, with some studies showing little or no effects and others indicating deleterious effects from exposure to increased sound levels. Given the short-term duration of sounds produced by each component of the proposed project, it is unlikely that noises generated by survey activities will have any lasting effect on sea otter prey (see the Service's draft EA (USFWS 2020) for further information). The MMPA allows the Service to identify avoidance and minimization measures for affecting the least practicable impact of the specified activity on important habitats. Although sea otters within this important habitat may be impacted by geophysical surveys conducted by NSF and L–DEO, the project, as currently proposed, is not likely to cause lasting effects to habitat.

Potential Impacts of the Proposed Activity on Subsistence Needs

The subsistence provision of the MMPA does not apply to northern sea otters in Washington and Oregon.

Mitigation and Monitoring

In order to issue an IHA under Section 101(a)(5)(D) of the MMPA, the Service must set forth the permissible methods of taking pursuant to the activity, and other means of affecting the least practicable impact on the species or stock and its habitat, paying particular attention to habitat areas of significance and the availability of sea otters for subsistence uses by coastal-dwelling Alaska Natives, although this factor is not applicable for this action.

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

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

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

To reduce the potential for disturbance to marine mammals caused by acoustic stimuli associated with IHA activities, NSF has proposed to implement mitigation measures for the northern sea otter including, but not limited to, the following:

- Development of marine mammal monitoring and mitigation plans;

- Reduced survey transect lines and daylight-only operations in area of highest sea otter densities;
- Establishment of shutdown and monitoring zones;
- Vessel-based visual mitigation monitoring by Protected Species Observers;
- Site clearing before start-up;
- Soft-start and shutdown procedures.

The specific methods to be implemented are further specified in the Service's draft EA (USFWS 2020) available at: *http://www.regulations.gov*, Docket No. FWS–R1–ES–2020–0131.

Estimated Take by Incidental Harassment of Northern Sea Otters

In a previous section, we discussed the components of the project activities that have the potential to affect sea otters and the physiological and behavioral effects that can be expected. Here, we discuss how the Service characterizes these effects under the MMPA.

An individual sea otter's reaction to human activity will depend on the otter's prior exposure to the activity, its need to be in the particular area, its physiological status, or other intrinsic factors. The location, timing, frequency, intensity, and duration of the encounter are among the external factors that will also influence the animal's response. Intermediate reactions that disrupt biologically significant behaviors are considered Level B harassment under the MMPA. The Service has identified the following sea otter behaviors as indicating possible Level B harassment:

- Swimming away at a fast pace on belly (i.e., porpoising);
- Repeatedly raising the head vertically above the water to get a better view (spy hopping) while apparently agitated or while swimming away;
- In the case of a pup, repeatedly spy hopping while hiding behind and holding onto

its mother's head;

- Abandoning prey or feeding area;
- Ceasing to nurse and/or rest (applies to dependent pups);
- Ceasing to rest (applies to independent animals);
- Ceasing to use movement corridors along the shoreline;
- Ceasing mating behaviors;
- Shifting/jostling/agitation in a raft so that the raft disperses;
- Sudden diving of an entire raft; or
- Flushing animals off of a haulout.

This list is not meant to encompass all possible behaviors; other situations may also indicate Level B harassment.

Reactions capable of causing injury are characterized as Level A harassment events. However, it is also important to note that, depending on the duration and severity of the above-described Level B behaviors, such responses could constitute take by Level A harassment. For example, while a single flushing event would likely indicate Level B harassment, repeatedly flushing sea otters from a haulout may constitute Level A harassment.

Calculating Estimate of Takes

In the sections below, we estimate take by harassment of the numbers of sea otters from the Washington stock (in Oregon and Washington) that are likely to be affected during the proposed activities. We assumed all animals exposed to underwater sound levels that meet the acoustic exposure criteria would experience Level A (> 232 dB_{RMS}) or Level B (160–232 dB_{RMS}) harassment. To determine the number of otters that may be exposed to these sound levels, we created spatially explicit zones of ensonification using the proposed reduced survey transect lines and determined the number of otters present in

the ensonification zones using density information generated from minimum population estimates in Jeffries *et al.* (2019), which subdivides the surveyed area into Cape Flattery to La Push and La Push to north entrance of Grays Harbor. An in-depth explanation of the process used can be found in the Service's draft EA (USFWS 2020) available at: *http://www.regulations.gov*, Docket No. FWS–R1–ES–2020–0131.

The Level A and Level B underwater sound thresholds were used to create spatially explicit ensonification zones surrounding the proposed project transects. We created a buffer with a 46-m (151-ft) width around the proposed project transects to account for the Level A ensonified area on either side of the 24-m-wide (79-ft-wide) airgun array. To determine the Level B ensonified area, we placed a 12,650-m (7.9-mi) buffer around transects in water <100 m (328 ft) deep, and a 9,468-m (5.9-mi) buffer around transects in water 100–1,000 m (328–3,280 ft) deep.

The minimum population estimate from Jeffries *et al.* (2019) can be specifically applied to the surveyed area, which included the Washington coastline between Cape Flattery and Grays Harbor in the nearshore areas less than 25-m (82-ft) depth contour. Sea otters are overwhelmingly observed (95 percent) within the 40-m (131-ft) depth contour (Laidre *et al.* 2009; Tinker *et al.* 2019), thus for the purposes of this analysis, the population estimated by Jeffries *et al.* (2019) is assumed to apply to the 40-m (131-ft) depth contour for the waters between Grays Harbor and Cape Flattery. The minimum abundance estimates from Jeffries *et al.* (2019) were divided north and south of the Quillayute River, thus for this analysis habitat was divided into subregions, Cape Flattery south to Quillayute River (subregion north) and Quillayute River to Grays Harbor (subregion mid). Density estimates for the north and mid subregions were calculated by dividing the population estimate for that subregion (Jeffries *et al.* 2019) by the area from shore to the 40-m (131-ft) depth contour. See Table 1 for projected sea otter abundance and density estimates.

Sea otter abundances outside of the area covered by surveys were inferred/estimated as follows.

- North and Mid subregions 40–100-m (131–328-ft) depth contour: While 95 percent of sea otters are observed within the 40-m (131-ft) depth contour, otters do occur farther off shore (see Pearson 2019 for specific instances off Washington coast), thus lower density otter habitat was delineated between the 40- and 100-m (131- and 328-ft) depth contours. To calculate the density of otters in lower density (40–10-m or 131–328-ft) habitat, we multiplied the density of the adjacent high-density habitat by 0.05.
- North and Mid subregions > 100-m (328-ft) depth contour: Pearson (2019) observed two sea otters (1 in 2017 and 1 in 2018) in waters > 100-m (328-ft) depth contour in the Mid subregion. We do not have a reasonable method for determining the density of otters in the waters this deep and far offshore, thus for the purposes of calculating the number of otters that may be exposed, we assumed 2 otters could be in the waters > 100-m (328-ft) depth contour in the Mid subregion.
- South subregion: includes the area from Grays Harbor south to Oregon/California border. This subregion was further divided into three areas because of the differences in transects and sea otter observations: Grays Harbor to Washington/Oregon border, Northern Oregon, Southern Oregon. There are no systematic surveys conducted south of Grays Harbor, but there are consistent reports of individuals as far south as Cape Blanco, Oregon (unpublished FWS data; Jim Rice, Oregon State University, pers. comm). We do not have data to inform a density estimate for these areas; however, in our best professional judgment we estimated that a minimum of four sea otters may be in the south subregion at the time of the project. Pearson (2019) observed one sea otter in

waters > 100-m (328-ft) depth contour in the South subregion. We do not have a reasonable method for determining the density of otters in the waters this deep and far offshore, thus for the purposes of calculating the number of otters that may be exposed in the Grays Harbor to WA/OR border, we assumed two sea otters could be at any depth. In Oregon, we assumed one otter in each of the two areas, which could be at any depth.

Table 1. Estimated sea otter abundance and densities for the analysis area.

Subregion	**High density (< 40 m)**			**Lower density (40–100 m)**		
	Abundance estimate	Area (km^2)	Density	Abundance estimate	Area (km^2)	Density
North	549	456	1.2	27	556	0.05
Mid	2,236	1,434	1.56	112	2,060	0.05
South						4

The area impacted in each subregion and depth contour was multiplied by the estimated otter density to determine the number of otters that would experience Level A and Level B sound levels (Tables 2 and 3). The total number of takes was predicted by estimating the projected days of activity in each subregion and depth contour using the reduced transects supplied by NSF. In several areas, the length and direction of the proposed survey transect lines make it highly unlikely that impacts will occur on only 1 day. In these instances, we estimated the days of disturbance based on the number of passes of the survey transect lines.

The following assumptions were pertinent to our estimate of harassment take (see above for specific rationale):

- No otters will occur > 100-m (328-ft) depth contour in North subregion.
- Visual observers will not be able to see sea otters in poor weather conditions and will not be observing at night. When visual observers are not able to effectively observe sea otters, there would be no mitigation (shutdown) applied.

- When visual observers are not able to observe sea otters they could be exposed to harassment that has the potential to injure (Level A) or disturb by causing disruption of behavioral patterns (Level B). For the purposes of this analysis, we applied our best professional judgment and erred on the side of the species, attributing the harassment to Level A. In the areas where a density estimate cannot be used to differentiate the number of otters exposed to Level A or Level B, we attributed the harassment to Level A.
- During the project, only two sea otters will be in the waters offshore of Southwest Washington between Grays Harbor and Washington/Oregon border. These two sea otters may be in waters > 100 m (328 ft), thus harassment was assigned at Level A conditions.
- During the project, only two sea otters will be in the waters offshore of Oregon. These two sea otters may be in waters at any depth contour, thus harassment was assigned at Level A conditions.

Table 2: Estimated number of northern sea otters ensonified by sound levels greater than 232 dB_{RMS} (Level A) due to the proposed activities. Take was calculated by multiplying the area ensonified in each subregion by that subregion's sea otter density or specific estimate, then multiplied by the projected days of ensonification.

Subregion	**Habitat Type**	**Density (otters/km^2)**	**Area Impacted (km^2)**	**Estimated Take/Day**	**Projected Days of Take**	**Estimated Survey Total Takes**
North	High (< 40m)	1.2	0	0		0
	Low (40–100 m)	.05	0	0		0
	Offshore (>100 m)	0				0
Mid	High (< 40 m)	1.56	0	0		0
	Low (40–100 m)	0.05	0	0		0
	Offshore (>100 m)	2 otters		2	2	4
Grays Harbor–WA/ OR border		2 otter		2	2	4
N Oregon		1 otter		1	2	2
S Oregon		1 otter		1	3	3
Total				**5**		**13**
Estimated Stock Total						2,928

Percentage of Stock				0.44

Table 3: Estimated number of northern sea otters ensonified by sound levels greater than 160 dB_{RMS} (Level B) due to the proposed activities. Take was calculated by multiplying the area ensonified in each subregion by that subregion's sea otter density or specific estimate, then multiplied by the projected days of ensonification.

Subregion	**Habitat Type**	**Density (otters/km²)**	**Area Impacted (km²)**	**Estimated Take/Day**	**Projected Days of Take**	**Estimated Survey Total Takes**
North	High (< 40 m)	1.2	0	0	0	0
	Low (40–100 m)	.05	0	0	1	0
	Low (40–100 m)	.05	0	0	2	0
	Offshore (>100 m)	0				
Mid	High (< 40 m)	1.56	0	0		0
	Low (40–100 m)	0.05	0	0	2	0
	Offshore (>100 m)	2 otters	Accounted for in Level A			
Grays Harbor–WA/ OR border		2 otters	Accounted for in Level A			
N Oregon		1 otter	Accounted for in Level A			
S Oregon		1 otter	Accounted for in Level A			
Total				**0**		**0**
Estimated Stock Total						2,928
Percentage of Stock						0.00

We expect that up to 13 sea otters may experience Level A and/or Level B take due to harassment by noise (Tables 2 and 3). While sea otters in these areas are most likely to be exposed to Level B harassment, during times when sea otters cannot be observed, we are erring on the side of the species and attributing the potential harassment to Level A, thus the total number of otters harassed is accounted for under Level A. The revised transects provided by NSF resulted in the area of ensonification being beyond the 100-m (328-ft) depth contour for the entire coast of Washington; therefore, no otters in waters less than 100 m (328 ft) deep are anticipated to be harassed by the activities. The total number of incidental takes of sea otters is expected to be less than 13. Take from sources other than noise is not expected.

Findings

The Service proposes the following findings regarding this action:

Small Numbers Determination

The statute and legislative history do not expressly require a specific type of numerical analysis for the small take evaluation, leaving the determination of "small" to the agency's discretion. In this case, we propose a finding that the NSF and L–DEO project may result in incidental take of up to 13 otters from the Washington sea otter stock. This represents less than 1 percent of the stock. Predicted levels of take were determined based on estimated density of sea otters in the project area and an ensonification zone developed using empirical evidence from the same geographic area and corrected for the methodology proposed by NSF and L–DEO for this project. Based on these numbers, we propose a finding that the NSF and L–DEO project will take only a small number of marine mammals.

Negligible Impact

We propose a finding that any incidental take by harassment resulting from the proposed activity cannot be reasonably expected to, and is not reasonably likely to, adversely affect the sea otter through effects on annual rates of recruitment or survival and will, therefore, have no more than a negligible impact on the species or stocks. In making this finding, we considered the best available scientific information, including: (1) the biological and behavioral characteristics of the species; (2) the most recent information on species distribution and abundance within the area of the specified activity; (3) the current and expected future status of the stock (including existing and foreseeable human and natural stressors); (4) the potential sources of disturbance caused

by the project; and (5) the potential responses of marine mammals to this disturbance. In addition, we reviewed applicant-provided material, information in our files and datasets, published reference materials, and input from experts on the sea otter.

The Service does not anticipate that mortality of affected otters would occur as a result of NSF and L–DEO's planned survey. Thus, mortality is not authorized. We are proposing to authorize Level A and Level B harassment of 13 sea otters. The effects to these individuals are unknown, and lasting effects to survival and reproduction for these otters are possible. However, we believe that any PTS incurred as a result of the planned activity would be in the form of only a small degree of PTS, not total deafness, and would be unlikely to affect the fitness of any individuals for the following reasons: (1) the constant movement of the *R/V Langseth* means the vessel is not expected to remain in any one area in which individual otters may spend an extended period of time (*i.e.*, since the duration of exposure to loud sounds will be relatively short); and (2) we expect that sea otters would be likely to move away from a sound source that represents an aversive stimulus, especially at levels that would be expected to result in PTS, given sufficient notice of the *R/V Langseth's* approach due to the vessel's relatively low speed when conducting seismic surveys.

We expect that the majority of takes would be in the form of short-term behavioral harassment in the form of temporary avoidance of the area or ceasing/decreased foraging (if such activity were occurring). Reactions to this type of harassment could have significant biological impacts for affected individuals but are not likely to result in measurable changes in their survival or reproduction. The otters subject to short-term behavioral harassment would be the same otters that may be subject to Level A harassment.

The total number of animals affected and severity of impact is not sufficient to change the current population dynamics of the sea otter at the subregion or stock scales.

Although the specified activities may result in the take of up to 13 sea otters from the Washington stock, we do not expect this level of harassment to affect annual rates of recruitment or survival or result in adverse effects on the species or stock as all of the projected takes occur outside of the areas used by females and are most likely to be males.

With implementation of the proposed project, sea otter habitat may be impacted by elevated sound levels, but these impacts would be temporary and are not anticipated to result in detrimental impacts to sea otter prey species. Because of the temporary nature of the disturbance, the impacts to sea otters and the food sources they utilize are not expected to cause significant or long-term consequences for individual sea otters or their population.

The proposed mitigation measures are expected to reduce the number and/or severity of take events by allowing for detection of sea otters in the vicinity of the vessel by visual observers, and by minimizing the severity of any potential exposures via shutdowns of the airgun array. These measures, and the monitoring and reporting procedures, are required for the validity of our finding and are a necessary component of the proposed IHA. For these reasons, we propose a finding that the 2021 NSF and L–DEO project will have a negligible impact on sea otters.

Impact on Subsistence

The subsistence provision of the MMPA does not apply to northern sea otters in Washington and Oregon.

Required Determinations

Endangered Species Act

The Service's proposed take authorization has no effect on any species listed as threatened or endangered under the ESA. The proposed NSF Seismic Survey is a Federal action currently undergoing separate interagency consultation with the Service pursuant to the ESA. As ESA-listed species or critical habitat will not be impacted by the Service's proposed take authorization, intra-agency consultation for the permit action is not required.

National Environmental Policy Act

We have prepared a draft EA (USFWS 2020) addressing the proposed MMPA take authorization in accordance with the requirements of NEPA (42 U.S.C. 4321 *et seq*.). Based on the findings presented in the EA, we have preliminarily concluded that approval and issuance of the authorization for the nonlethal, incidental, unintentional take by Level A and Level B harassment of small numbers of the Washington stock of the northern sea otter caused by activities conducted by the applicant would not significantly affect the quality of the human environment, and that the preparation of an environmental impact statement for this action is not required by section 102(2) of NEPA or its implementing regulations. We are accepting comments on the draft EA as described above in **ADDRESSES**.

Government-to-Government Relations with Native American Tribal Governments

In accordance with: the President's memorandum of April 29, 1994, ''Government-to-Government Relations with Native American Tribal Governments'' (59 FR 22951); the Native American Policy of the Service (January 20, 2016); Executive Order 13175 (November 6, 2000); and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with Federally recognized Tribes on a Government-to-Government basis. We have evaluated

possible effects of the proposed MMPA take authorization on federally recognized Indian Tribes and have determined that there are no effects.

Proposed Authorization

We propose to issue an IHA to NSF for incidental takes by Level A and Level B harassment of up to 13 sea otters from the Washington stock of the northern sea otter. The final authorization would incorporate the mitigation, monitoring, and reporting measures as described below and fully detailed in the draft EA. The taking of sea otters whenever the required conditions, mitigation, monitoring, and reporting measures are not fully implemented as required by the IHA will be prohibited. Failure to follow these measures may result in the modification, suspension, or revocation of the IHA. Authorized take will be limited to PTS and disruption of behavioral patterns that may be caused by geophysical surveys and support activities conducted by NSF and L–DEO in Washington and Oregon from May 1 to June 30, 2021. We anticipate no take in the form of death of northern sea otters resulting from these surveys.

If take exceeds the level or type identified in the proposed authorization (e.g., greater than 13 incidents of take of sea otters), the IHA will be invalidated and the Service will reevaluate its findings. If project activities cause unauthorized take, the applicant must take the following actions: (i) cease its activities immediately (or reduce activities to the minimum level necessary to maintain safety); (ii) report the details of the incident to the Service's Washington Fish and Wildlife Office within 48 hours; and (iii) suspend further activities until the Service has reviewed the circumstances, determined whether additional mitigation measures are necessary to avoid further unauthorized taking, and notified the applicant that they may resume project activities.

All operations managers and vessel operators must possess a copy of the IHA and maintain access to it for reference at all times during project work. These personnel must

understand, be fully aware of, and be capable of implementing the conditions of the IHA at all times during project work.

The IHA will apply to activities associated with the proposed project as described in this document, the draft EA, and in the applicant's amended application and environmental assessments. Changes to the proposed project without prior Service authorization may invalidate the IHA.

Operators shall allow Service personnel or the Service's designated representative to visit project work sites to monitor impacts to sea otters at any time throughout project activities so long as it is safe to do so. "Operators" are all personnel operating under the applicant's authority, including all contractors and subcontractors.

A final report will be submitted by NSF to the Service within 90 days after completion of work or expiration of the IHA. The report will describe the operations that were conducted and document sightings of sea otters near the operations. The report will provide full documentation of methods, results, and interpretation pertaining to all monitoring, including factors influencing visibility and detectability of sea otters. The final report will summarize the dates and locations of seismic operations, and all northern sea otter sightings (dates, times, locations, activities, associated seismic survey activities). The report will also include estimates of the number and nature of exposures, if any, that occurred above the harassment threshold based on Protected Species Observer (PSO) observations and including an estimate of those that were not detected.

The report shall also include geo-referenced time-stamped vessel transect lines for all time periods during which airguns were operating. Transect lines should include points recording any change in airgun status (*e.g.*, when the airguns began operating, when they were turned off, or when they changed from a full array to a single gun or vice versa). GIS files shall be provided in ESRI shapefile format and include the UTC date and time, latitude in decimal degrees, and longitude in decimal degrees. All coordinates

shall be referenced to the GCS_North_American_1983 geographic coordinate system. In addition to the report, all raw observational data shall be made available to the Service. The report will be accompanied by a certification from the lead PSO as to the accuracy of the report, and the lead PSO may submit directly to the Service a statement concerning implementation and effectiveness of the required mitigation and monitoring.

References

A list of the references cited in this notice is available at *www.regulations.gov* in Docket No. FWS–R1–ES–2020–0131.

Request for Public Comments

If you wish to comment on this proposed authorization or the associated draft EA, or both, you may submit your comments by any of the methods described in **ADDRESSES**. Please identify if you are commenting on the proposed IHA, draft EA, or both. Please make your comments as specific as possible, confine them to issues pertinent to the proposed authorization, and explain the reason for any changes you recommend. Where possible, your comments should reference the specific section or paragraph that you are addressing. The Service will consider all comments that are received before the close of the comment period (see **DATES** above).

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Dated: _February 23, 2021.

Hugh Morrison,
Deputy Regional Director,
Interior Regions 9 and 12.

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