



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

LETTER OF AUTHORIZATION

The National Marine Fisheries Service's Northwest Fisheries Science Center (NWFSC) is hereby authorized under section 101(a)(5)(A) of the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1371(a)(5)(A)) to take marine mammals incidental to fishery and ecosystem research activities in the Pacific Ocean, subject to the provisions of the MMPA and the Regulations Governing Taking of Marine Mammals Incidental to Northwest Fisheries Science Center Fisheries Research in the Pacific Ocean (50 CFR Part 219, Subpart E) (Regulations).

1. This Letter of Authorization (LOA) is valid from August 27, 2018, through August 28, 2023.
2. This LOA is valid only for take incidental to the specified research survey program activities in the California Current Ecosystem of the Pacific Ocean, including Puget Sound and the Columbia River, described in the preamble to the Regulations.
3. General Conditions
 - (a) A copy of this LOA must be in the possession of NWFSC, its designees, and personnel operating under the authority of this LOA.
 - (b) The taking is limited to the species and numbers listed in Table 1 (attached).
 - (c) Taking of these species that exceeds the numbers and/or intensity indicated in Table 1 or any taking of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this LOA.
 - (d) NWFSC must take all necessary measures to coordinate and communicate in advance of each specific survey with the National Oceanic and Atmospheric Administration's (NOAA) Office of Marine and Aviation Operations (OMAO) or other relevant parties on non-NOAA platforms to ensure that all mitigation measures and monitoring requirements described herein, as well as the specific manner of implementation and relevant event-contingent decision-making processes, are clearly understood and agreed upon.
 - (e) NWFSC must coordinate and conduct briefings at the outset of each survey and as necessary between ship's crew (Commanding Officer/master or designee(s), as appropriate) and scientific party in order to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures.



- (f) NWFSC must coordinate as necessary on a daily basis during survey cruises with OMAO personnel or other relevant personnel on non-NOAA platforms to ensure that requirements, procedures, and decision-making processes are understood and properly implemented.

4. Mitigation Measures

The holder of this Authorization is required to implement the following mitigation measures:

- (a) When deploying any type of sampling gear at sea, NWFSC must at all times monitor for any unusual circumstances that may arise at a sampling site and use best professional judgment to avoid any potential risks to marine mammals during use of all research equipment.
- (b) NWFSC must implement handling and/or disentanglement protocols as specified in guidance that shall be provided to NWFSC survey personnel.
- (c) For all research surveys using trawl, hook and line, or seine gear in Puget Sound, the move-on rule mitigation protocol described in paragraph (d)(iii) must be implemented upon observation of killer whales at any distance.
- (d) Trawl survey protocols:
 - (i) NWFSC must conduct trawl operations as soon as is practicable upon arrival at the sampling station.
 - (ii) NWFSC must initiate marine mammal watches (visual observation) no less than ten minutes prior to beginning of net deployment, but must also conduct monitoring during pre-set activities including trackline reconnaissance, CTD casts, and plankton or bongo net hauls. Marine mammal watches shall be conducted by scanning the surrounding waters with the naked eye and rangefinding binoculars (or monocular). During nighttime operations, visual observation shall be conducted using the naked eye and available vessel lighting.
 - (iii) NWFSC must implement the move-on rule. If one or more marine mammals are observed within 500 meters (m) of the planned set location in the ten minutes before setting the trawl gear, and are considered at risk of interacting with the vessel or research gear, or appear to be approaching the vessel and are considered at risk of interaction, NWFSC shall either remain onsite or move on to another sampling location. If remaining onsite, the set must be delayed. If the vessel is moved to a different section of the sampling area, the move-on rule mitigation protocol must begin anew. If, after moving on, marine mammals remain at risk of interaction,

the NWFSC must move again or skip the station. Marine mammals that are sighted further than 500 m from the vessel shall be monitored to determine their position and movement in relation to the vessel to determine whether the move-on rule mitigation protocol should be implemented. NWFSC may use best professional judgment in making these decisions.

- (iv) NWFSC must maintain visual monitoring effort during the entire period of time that trawl gear is in the water (i.e., throughout gear deployment, fishing, and retrieval). If marine mammals are sighted before the gear is fully removed from the water, NWFSC must take the most appropriate action to avoid marine mammal interaction. NWFSC may use best professional judgment in making this decision.
- (v) If trawling operations have been suspended because of the presence of marine mammals, NWFSC may resume trawl operations when practicable only when the animals are believed to have departed the area. NWFSC may use best professional judgment in making this determination.
- (vi) When conducting surface trawls using the Nordic 264 net, dedicated crew with no other tasks must conduct required marine mammal monitoring. Marine mammal monitoring must be staffed in a stepwise process, with a minimum of two observers beginning pre-set monitoring and increasing to a minimum of four observers prior to and during gear deployment. During the tow, a minimum of three observers must conduct required monitoring.
- (vii) NWFSC must implement standard survey protocols to minimize potential for marine mammal interactions. These may include maximum tow durations at target depth and maximum tow distance, cleaning of nets prior to deployment, and careful emptying of the trawl as quickly as possible upon retrieval. Trawl nets must be cleaned prior to deployment.
- (viii) NWFSC must install and use a marine mammal excluder device at all times when the Nordic 264 trawl net is used.
- (ix) NWFSC must install and use acoustic deterrent devices whenever the Nordic 264 trawl net is used, with two pairs of the devices installed near the net opening. NWFSC must ensure that the devices are operating properly before deploying the net.
- (x) For use of the Kodiak surface trawl in Puget Sound, trawl survey protocols described in this section apply only to cetaceans.
- (xi) Trawl survey protocols described in this section do not apply to use of pair trawl gear in the Columbia River.

- (e) Hook and line (including longline) survey protocols:
- (i) NWFSC must deploy hook and line gear as soon as is practicable upon arrival at the sampling station.
 - (ii) NWFSC must initiate marine mammal watches (visual observation) no less than thirty minutes prior to both deployment and retrieval of longline gear. Marine mammal watches shall be conducted by scanning the surrounding waters with the naked eye and rangefinding binoculars (or monocular). During nighttime operations, visual observation shall be conducted using the naked eye and available vessel lighting.
 - (iii) NWFSC must implement the move-on rule. If one or more marine mammals are observed within 500 m of the planned location in the ten minutes before gear deployment, and are considered at risk of interacting with the vessel or research gear, or appear to be approaching the vessel and are considered at risk of interaction, NWFSC shall either remain onsite or move on to another sampling location. If remaining onsite, the set must be delayed. If the animals depart or appear to no longer be at risk of interacting with the vessel or gear, a further ten minute observation period must be conducted. If no further observations are made or the animals still do not appear to be at risk of interaction, then the set may be made. If the vessel is moved to a different section of the sampling area, the move-on rule must begin anew. If, after moving on, marine mammals remain at risk of interaction, the NWFSC must move again or skip the station. Marine mammals that are sighted further than 500 m from the vessel shall be monitored to determine their position and movement in relation to the vessel to determine whether the move-on rule mitigation protocol should be implemented. NWFSC may use best professional judgment in making these decisions.
 - (iv) NWFSC must maintain visual monitoring effort during the entire period of gear deployment and retrieval. If marine mammals are sighted before the gear is fully deployed or retrieved, NWFSC must take the most appropriate action to avoid marine mammal interaction. NWFSC may use best professional judgment in making this decision.
 - (v) If deployment or retrieval operations have been suspended because of the presence of marine mammals, NWFSC may resume such operations when practicable only when the animals are believed to have departed the area. NWFSC may use best professional judgment in making this decision.
 - (vi) NWFSC must implement standard survey protocols, including maximum soak durations and a prohibition on chumming.

- (vii) For hook and line surveys in Puget Sound, but not including longline surveys, hook and line survey protocols described in this section apply only to cetaceans.
- (f) Seine survey protocols:
 - (i) NWFSC must conduct seine operations as soon as is practicable upon arrival at the sampling station.
 - (ii) NWFSC must conduct marine mammal watches (visual observation) prior to beginning of net deployment. Marine mammal watches shall be conducted by scanning the surrounding waters with the naked eye and rangefinding binoculars (or monocular).
 - (iii) NWFSC must implement the move-on rule for use of purse seine gear. If one or more small cetaceans (i.e., dolphin or porpoise) or five or more pinnipeds are observed within 500 m of the planned location before setting the seine gear, and are considered at risk of interacting with the vessel or research gear, or appear to be approaching the vessel and are considered at risk of interaction, NWFSC shall either remain onsite or move on to another sampling location. If remaining onsite, the set must be delayed. If the animals depart or appear to no longer be at risk of interacting with the vessel or gear, a further ten-minute observation period must be conducted. If no further observations are made or the animals still do not appear to be at risk of interaction, then the set may be made. If the vessel is moved to a different area, the move-on rule mitigation protocol must begin anew. If, after moving on, marine mammals remain at risk of interaction, the NWFSC must move again or skip the station. Marine mammals that are sighted further than 500 m from the vessel shall be monitored to determine their position and movement in relation to the vessel to determine whether the move-on rule mitigation protocol should be implemented. NWFSC may use best professional judgment in making these decisions.
 - (iv) NWFSC must maintain visual monitoring effort during the entire period of time that seine gear is in the water (i.e., throughout gear deployment, fishing, and retrieval). If marine mammals are sighted before the gear is fully removed from the water, NWFSC must take the most appropriate action to avoid marine mammal interaction. NWFSC may use best professional judgment in making this decision.
 - (v) If seine operations have been suspended because of the presence of marine mammals, NWFSC may resume such operations when practicable only when the animals are believed to have departed the area. NWFSC may use best professional judgment in making this decision.

- (vi) If any cetaceans are observed in a purse seine net, NWFSC must immediately open the net and free the animals.
- (vii) NWFSC must not make beach seine sets within 200 m of any hauled-out pinniped, and must immediately remove the gear from the water upon observation of any marine mammal attempting to interact with the gear.

5. Monitoring

The holder of this Authorization is required to implement the following monitoring requirements:

- (a) NWFSC must designate a compliance coordinator who shall be responsible for ensuring compliance with all requirements of this LOA and for preparing for any subsequent request(s) for incidental take authorization.
- (b) Visual monitoring:
 - (i) Marine mammal visual monitoring must occur prior to deployment of trawl, seine, and hook and line gear, respectively; throughout deployment of gear and active fishing of research gears (not including longline soak time); prior to retrieval of longline gear; and throughout retrieval of all research gear.
 - (ii) Marine mammal watches must be conducted by watch-standers (those navigating the vessel and/or other crew) at all times when the vessel is being operated.
 - (iii) NWFSC must conduct census counts of established pinniped haul-outs in the Columbia River and Puget Sound that are disturbed by NWFSC research activity, and must record disturbance of hauled-out pinnipeds due to NWFSC research activity, paying particular attention to the distance at which different species of pinniped are disturbed. Disturbance must be recorded according to a three-point scale of response severity (Table 2).
- (c) Training:
 - (i) NWFSC must conduct annual training for all chief scientists and other personnel who may be responsible for conducting dedicated marine mammal visual observations to explain mitigation measures and monitoring and reporting requirements, mitigation and monitoring protocols, marine mammal identification, completion of datasheets, and use of equipment. NWFSC may determine the agenda for these trainings.

- (ii) NWFSC must also dedicate a portion of training to discussion of best professional judgment, including use in any incidents of marine mammal interaction and instructive examples where use of best professional judgment was determined to be successful or unsuccessful.
 - (iii) NWFSC must coordinate with NMFS' Southwest Fisheries Science Center regarding surveys conducted in the California Current Ecosystem, such that training and guidance related to handling procedures and data collection is consistent.
- (d) Handling procedures and data collection:
- (i) NWFSC must develop and implement standardized marine mammal handling, disentanglement, and data collection procedures. These standard procedures will be subject to approval by NMFS' Office of Protected Resources (OPR).
 - (ii) When practicable, for any marine mammal interaction involving the release of a live animal, NWFSC must collect necessary data to facilitate a serious injury determination.
 - (iii) NWFSC must provide its relevant personnel with standard guidance and training regarding handling of marine mammals, including how to identify different species, bring an individual aboard a vessel, assess the level of consciousness, remove fishing gear, return an individual to water, and log activities pertaining to the interaction.
 - (iv) NWFSC must record such data on standardized forms, which will be subject to approval by OPR. NWFSC must also answer a standard series of supplemental questions regarding the details of any marine mammal interaction.

6. Reporting

The holder of this Authorization is required to report as follows:

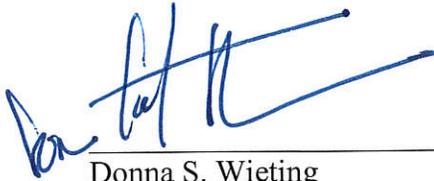
- (a) NWFSC must report all incidents of marine mammal interaction to NMFS' Protected Species Incidental Take database within 48 hours of occurrence, and must provide supplemental information to OPR upon request. Information related to marine mammal interaction (animal captured or entangled in research gear) must include details of survey effort, full descriptions of any observations of the animals, the context (vessel and conditions), decisions made, and rationale for decisions made in vessel and gear handling.
- (b) Annual reporting:

- (i) NWFSC must submit an annual summary report to OPR not later than ninety days following the end of a given year. NWFSC must provide a final report within thirty days following resolution of comments on the draft report.
- (ii) These reports must contain, at minimum, the following:
 1. Annual line-kilometers surveyed during which the EK60, ME70, SX90 (or equivalent sources) were predominant and associated pro-rated estimates of actual take;
 2. Summary information regarding use of all hook and line, seine, and trawl gear, including number of sets, hook hours, tows, etc., specific to each gear;
 3. Accounts of all incidents of marine mammal interactions, including circumstances of the event, descriptions of any mitigation procedures implemented or not implemented and why;
 4. Summary information related to disturbance of hauled-out pinnipeds, including event-specific total counts of animals present, counts of reactions according to the three-point scale (Table 2), and distance of closest approach;
 5. A written evaluation of the effectiveness of NWFSC mitigation strategies in reducing the number of marine mammal interactions with survey gear, including best professional judgment and suggestions for changes to the mitigation strategies, if any;
 6. Final outcome of serious injury determinations for all incidents of marine mammal interactions where the animal(s) were released alive;
 7. A summary of all relevant training provided by NWFSC and any coordination with SWFSC or NMFS' West Coast Regional Office.
- (c) Reporting injured or dead marine mammals:
 - (i) In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a prohibited manner, NWFSC personnel engaged in the research activity must immediately cease such activity until such time as an appropriate decision regarding activity continuation can be made by the NWFSC Director (or designee). The incident must be reported to OPR (Benjamin.Laws@noaa.gov) and the West Coast

Regional Stranding Coordinator, NMFS (Kristin.Wilkinson@noaa.gov). OPR will review the circumstances of the prohibited take and work with NWFSC to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. The report must include the following information:

1. Time, date, and location (latitude/longitude) of the incident;
 2. Description of the incident;
 3. Environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, visibility);
 4. Description of all marine mammal observations in the 24 hours preceding the incident;
 5. Species identification or description of the animal(s) involved;
 6. Status of all sound source use in the 24 hours preceding the incident;
 7. Water depth;
 8. Fate of the animal(s); and
 9. Photographs or video footage of the animal(s).
- (ii) In the event that NWFSC discovers an injured or dead marine mammal and determines that the cause of the injury or death is unknown and the death is relatively recent (e.g., in less than a moderate state of decomposition), NWFSC must immediately report the incident to OPR and the West Coast Regional Stranding Coordinator, NMFS. The report must include the information identified in 6(c)(i) of this LOA. Activities may continue while OPR reviews the circumstances of the incident. OPR will work with NWFSC to determine whether additional mitigation measures or modifications to the activities are appropriate.
- (iii) In the event that NWFSC discovers an injured or dead marine mammal and determines that the injury or death is not associated with or related to the specified activity (e.g., previously wounded animal, carcass with moderate to advanced decomposition, scavenger damage), NWFSC must report the incident to OPR and the West Coast Regional Stranding Coordinator, NMFS, within 24 hours of the discovery. NWFSC must provide photographs or video footage or other documentation of the stranded animal sighting to OPR.

7. This Authorization may be modified, suspended or withdrawn if the holder fails to abide by the conditions prescribed herein or contained in the Regulations, or if OPR determines the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals.



Donna S. Wieting
Director,
Office of Protected Resources,
National Marine Fisheries Service.

8/27/18

Date

Table 1. Authorized take numbers, by species

Species	Authorized Take			
	M/SI + Level A ¹			Level B ²
	Trawl	Hook and line	Seine	
Sperm whale (<i>Physeter macrocephalus</i>)	-	-	-	6
Pygmy or dwarf sperm whale (<i>Kogia</i> spp.)	-	1	-	3
Cuvier's beaked whale (<i>Ziphius cavirostris</i>)	-	-	-	14
Baird's beaked whale (<i>Berardius bairdii</i>)	-	-	-	3
Hubbs', Blainville's, ginkgo-toothed, Perrin's, lesser, or Stejneger's beaked whales (<i>Mesoplodon</i> spp.)	-	-	-	3
Bottlenose dolphin (<i>Tursiops truncatus</i>) (CA/OR/WA stock)	1	1	-	6
Striped dolphin (<i>Stenella coeruleoalba</i>)	6	1	-	49
Long-beaked common dolphin (<i>Delphinis delphis bairdii</i>)	1	1	-	55
Short-beaked common dolphin (<i>Delphinis delphis delphis</i>)	1	1	1	895
Pacific white-sided dolphin (<i>Lagenorhynchus obliquidens</i>)	30	-	1	61
Northern right whale dolphin (<i>Lissodelphis borealis</i>)	6	-	1	28
Risso's dolphin (<i>Grampus griseus</i>)	6	1	1	30
Killer whale (<i>Orcinus orca</i>)	-	-	-	2
Short-finned pilot whale (<i>Globicephala macrorhynchus</i>)	-	1	-	1
Harbor porpoise (<i>Phocoena phocoena</i>)	3	-	2	110
Dall's porpoise (<i>Phocoenoides dalli</i>)	2	-	1	218
Guadalupe fur seal (<i>Arctocephalus philippii townsendi</i>)	-	-	-	22
Northern fur seal (<i>Callorhinus ursinus</i>)	5	-	-	1,878
California sea lion (<i>Zalophus californianus</i>)	7	2	1	3,659
Steller sea lion (<i>Eumetopias jubatus</i>)	7	1	1	174
Harbor seal (<i>Phoca vitulina</i>)	11	1	1	86,682
Northern elephant seal (<i>Mirounga angustirostris</i>)	-	-	-	622
Unidentified cetacean (Family Delphinidae or Family Phocoenidae)	1	-	-	-
Unidentified pinniped	1	-	-	-

¹ These takes may be by mortality or any lesser intensity, including serious injury and Level A harassment, and are apportioned by gear type. The number represents the total authorization over five years.

² These takes may be by Level B harassment only. The number represents the annual take authorization for five years.

Table 2. Pinniped Response to Disturbance.

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