

## INCIDENTAL HARASSMENT AUTHORIZATION

The National Science Foundation (NSF) and their designees are hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1371(a)(5)(D)) to incidentally harass marine mammals, under the following conditions:

1. This incidental harassment authorization (IHA) is valid from October 1, 2021 through September 30, 2022.
2. This IHA authorizes take incidental to construction activities, as specified in NSF's July 15, 2021 IHA application, associated with Palmer Station Pier Replacement at Anvers Island, Antarctica. Hereafter (unless otherwise specified) the term "pile driving" is used to refer to both pile installation (including DTH pile installation) and pile removal.
3. General Conditions
  - (a) A copy of this IHA must be in the possession of the Holder of the Authorization (Holder), supervisory construction personnel, lead protected species observers (PSOs), and any other relevant designees of the Holder operating under the authority of this IHA at all times that activities subject to this IHA are being conducted.
  - (b) The species and/or stocks authorized for taking are listed in Table 1. Authorized take, by Level A and Level B harassment only, is limited to the species and numbers listed in Table 1.
  - (c) The taking by serious injury or death of any of the species listed 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 IHA. Any taking exceeding the authorized amounts listed in Table 1 is prohibited and may result in the modification, suspension, or revocation of this IHA.
  - (d) The Holder must ensure that construction supervisors and crews, the monitoring team, and relevant NSF staff are trained prior to the start of activities subject to this IHA, so that responsibilities, communication procedures, monitoring

protocols, and operational procedures are clearly understood. New personnel joining during the project must be trained prior to commencing work.

- (e) The Holder also must abide by the terms and conditions [to be (attached to the final IHA upon completion of Biological Opinion)] of the [DATE] Biological Opinion issued by NMFS pursuant to section 7 of the Endangered Species Act.

#### 4. Mitigation Requirements

- (a) The Holder must employ PSOs and establish monitoring locations as described in section 5 of this IHA. The Holder must monitor the project area to the maximum extent possible based on the required number of PSOs, required monitoring locations, and environmental conditions.
- (b) Monitoring must take place from 30 minutes prior to initiation of pile driving activity (i.e., pre-start clearance monitoring) through 30 minutes post-completion of pile driving activity.
- (c) If a marine mammal is observed entering or within the shutdown zones indicated in Table 2 and Table 3, pile driving activity must be delayed or halted. Pile driving must be commenced or resumed as described in condition 4(e) of this IHA.
- (d) Pre-start clearance monitoring must be conducted during periods of visibility sufficient for the lead PSO to determine that the shutdown zones indicated in Table 2 and Table 3 are clear of marine mammals. Pile driving may commence following 30 minutes of observation when the determination is made that the shutdown zones are clear of marine mammals.
- (e) If pile driving 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 zones indicated in Table 2 and Table 3 or 15 minutes have passed without re-detection of the animal for pinnipeds.
- (f) The Holder must use soft start techniques when impact pile driving. Soft start requires 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 must 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.

- (g) Pile driving activity must be halted (as described in condition 4(c) of this IHA) 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 within the harassment zone (as shown in Table 2 and Table 3).
- (h) The Holder, construction supervisors and crews, PSOs, and relevant NSF 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 to avoid direct physical interaction.
- (i) When transiting to or from the construction site, marine mammal watches must be conducted by those navigating the vessel or crew.
- (j) When in the Project Area, if a whale is sighted in the path of a support vessel or within 92 m (300 feet) from the vessel, the Holder must reduce speed and must not engage the engines until the animals are clear of the area.
- (k) If a whale is sighted farther than 300 feet from the vessel, the Holder must maintain a distance of 92 m (300 feet) or greater between the whale and the vessel and reduce speed to 10 knots or less.
- (l) Vessels must not be operated in such a way as to separate members of a group of whales from other members of the group. A group is defined as being three or more whales observed within a 500 m area and displaying behaviors of directed or coordinated activity (e.g., group feeding).
- (m) If the Level A shutdown zones are not visible due to poor environmental conditions (e.g. excessive wind or fog, high Beaufort state), pile driving would cease.

## 5. Monitoring Requirements

- (a) Marine mammal monitoring must be conducted in accordance with the conditions in this section and this IHA.
- (b) Monitoring must be conducted by qualified PSOs in accordance with the following conditions:
  - (i) PSOs must be independent (i.e., not construction personnel) and have no other assigned tasks during monitoring periods.
  - (ii) The Lead PSO must be approved by NMFS and must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization.
  - (iii) Prior to the initiation of construction at least three PSOs, other than the Lead PSO must undergo training /refresher session that includes the following objectives:
    - A. Review of the mitigation, monitoring, and reporting requirements provided in this application, including any amendments specified by NMFS in the authorization;
    - B. Review of marine mammal sighting, identification, and distance estimation methods;
    - C. Review of operation of specialized equipment (reticle binoculars, GPS); and
    - D. Review of, and classroom practice with, data recording and data entry systems, including procedures for recording data on marine mammal sightings, monitoring operations, environmental conditions, and entry error control.
- (c) Two PSOs must be on duty at all times during in-water construction.
- (d) PSOs must be on duty in shifts of 4 hours duration, with sufficient breaks and a maximum of 12 hours watch time per day per PSO.
- (e) Mounted big eye binoculars must be provided to PSOs to adequately cover the Level A harassment zone

- (f) The Holder must establish a monitoring station on the roof of the Garage Warehouse Recreation Building. PSOs must be able to monitor the entire shutdown zone.
- (g) PSOs must record all observations of marine mammals, regardless of distance from the pile being driven, as well as the additional data indicated in section 6 of this IHA.

6. Reporting

- (a) The Holder must submit its draft report(s) on all monitoring conducted under this IHA within 90 calendar days of the completion of monitoring or 60 calendar days prior to the requested issuance of any subsequent IHA for construction activity at the same location, whichever comes first. A final report must be prepared and submitted within 30 calendar days following receipt of any NMFS comments on the draft report. If no comments are received from NMFS within 30 calendar days of receipt of the draft report, the report shall be considered final.
- (b) All draft and final monitoring reports must be submitted to *PR.ITP.MonitoringReports@noaa.gov* and *itp.pauline@noaa.gov*.
- (c) The marine mammal report must include:
  - (i) Dates and times (begin and end) of all marine mammal monitoring;
  - (ii) Construction activities occurring during each daily observation period, including:
    - A. The number and type of piles that were driven and the method (e.g., impact, vibratory, down-the-hole);
    - B. Total duration of driving time for each pile (vibratory driving) and number of strikes for each pile (impact driving); and
    - C. For down-the-hole drilling, duration of operation for both impulsive and non-pulse components.
  - (iii) PSO locations during marine mammal monitoring;
  - (iv) Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including

Beaufort sea state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance;

- (v) Upon observation of a marine mammal, the following information:
  - A. Name of PSO who sighted the animal(s) and PSO location and activity at time of sighting;
  - B. Time of sighting;
  - C. Identification of the animal(s) (e.g., genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the composition of the group if there is a mix of species;
  - D. Distance and location of each observed marine mammal relative to the pile being driven for each sighting;
  - E. Estimated number of animals (min/max/best estimate);
  - F. Estimated number of animals by cohort (adults, juveniles, neonates, group composition, etc.);
  - G. Animal's closest point of approach and estimated time spent within the harassment zone;
  - H. Description of any marine mammal behavioral observations (e.g., observed behaviors such as feeding or traveling), including an assessment of behavioral responses thought to have resulted from the activity (e.g., no response or changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching);
- (vi) Number of marine mammals detected within the harassment zones, by species; and
- (vii) Detailed information about implementation of any mitigation (e.g., shutdowns and delays), a description of specific actions that ensued, and resulting changes in behavior of the animal(s), if any.

- (d) The Holder must submit all PSO datasheets and/or raw sighting data with the draft report, as specified in condition 6(b) of this IHA.
- (e) Reporting injured or dead marine mammals:

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the Holder must report the incident to the Office of Protected Resources (OPR), NMFS (*PR.ITP.MonitoringReports@noaa.gov* and *Robert.pauline@noaa.gov*) as soon as feasible. If the death or injury was clearly caused by the specified activity, the Holder must immediately cease the activities until NMFS OPR 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 this IHA. The Holder must not resume their activities until notified by NMFS.

The report must include the following information:

- (i) Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
  - (ii) Species identification (if known) or description of the animal(s) involved;
  - (iii) Condition of the animal(s) (including carcass condition if the animal is dead);
  - (iv) Observed behaviors of the animal(s), if alive;
  - (v) If available, photographs or video footage of the animal(s); and
  - (vi) General circumstances under which the animal was discovered.
7. This Authorization may be modified, suspended or revoked if the Holder fails to abide by the conditions prescribed herein (including, but not limited to, failure to comply with monitoring or reporting requirements), or if NMFS determines: (1) the authorized taking is likely to have or is having more than a negligible impact on the species or stocks of affected marine mammals, (2) the prescribed measures are likely not or are not effecting the least practicable adverse impact on the affected species or stocks and their habitat.
8. Renewals

On a case-by-case basis, NMFS may issue a one-time, one-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 (or a subset of those activities) are planned or (2) the specified activities will not be completed by the time the IHA expires and a Renewal would allow for completion of the activities, provided all of the following conditions are met:

- (a) A request for renewal is received no later than 60 days prior to the needed Renewal IHA effective date (note a Renewal IHA expiration date cannot extend beyond one year from expiration of this IHA).
- (b) The request for renewal must include the following:
  - (i) An explanation that the activities to be conducted under the requested Renewal IHA are identical to the activities analyzed for this 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 (with the exception of reducing the type or amount of take).
  - (ii) 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.
- (c) 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 made in support of this IHA remain valid.

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National Marine Fisheries Service



**Table 1. Authorized Incidental Take.**

<b>Common name</b>	<b>Scientific name</b>	<b>Level A harassment</b>	<b>Level B harassment</b>
Antarctic Minke Whale	<i>Balaenoptera bonaerensis</i>	15	312
Arnoux's Beaked Whale	<i>Berardius arnuxii</i>	0	12
Blue Whale	<i>B. musculus musculus</i>	0	2
Fin Whale	<i>B. physalus quoyi</i>	14	282
Hourglass Dolphin	<i>Lagenorhynchus cruciger</i>	0	25
Humpback Whale	<i>Megaptera novaeangliae australis</i>	6	121
Killer Whale	<i>Orcinus orca</i>	0	112
Long-finned Pilot Whale	<i>Globicephala melas edwardii</i>	0	28
Southern Bottlenose Whale	<i>Hyperoodon planifrons</i>	0	24
Sei Whale	<i>Balaenoptera borealis</i>	0	6
Southern Right Whale	<i>Eubalaena australis</i>	0	20
Sperm Whale	<i>Physeter macrocephalus</i>	0	17
Antarctic Fur Seal	<i>Arctocephalus gazella</i>	80	357
Crabeater Seal	<i>Lobodon carcinophaga</i>	120	6,129
Southern Elephant Seal	<i>Mirounga leonina</i>	0	1
Leopard Seal	<i>Hydrurga leptonyx</i>	5	5
Weddell Seal	<i>Leptonychotes weddellii</i>	10	188

**Table 2. Shutdown and Harassment Zones for Non-Simultaneous Pile Installation Activities.**

Pile size, type, and method	Minimum Shutdown Zone					Level B Harassment Zone (m)
	Cetaceans			Pinnipeds		
	LF	MF	HF	PW	OW	
Dock, 36-in Dia. Pile Installation, 20' Socket Depth - 1 pile/day (DTH)	1,900	70	2,255	1,015		11,659
Dock Abutment, 36-in Dia. Pile Installation, 30' Socket Depth - 1 pile/day (DTH)	2500	90	2,955	1,330		
RHIB Fender Piles, 24-in Dia. Pile Installation, 20' Socket - 1 pile/day	410	15	485	220	50	
24-in Dia. Template Piles, 10' Socket Depth - 2 piles/day						
24-in Dia Wave Attenuator Piles, 20' Socket Depth - 1 pile/day						
Retaining Wall HP Pile inserted in Drilled 24-in Dia Sockets, 20' Socket Depth - 1 pile/day						
Removal of 24-in Dia. Template Piles - 16 piles	55	10	75	35		10,000
Removal of Sheet Piles	25		35	15		4,642
Rock Chipping/Floor Preparation	405	50	720	205		123
Anode Installation	10	10	10	10		200

**Table 3. Shutdown and Harassment Zones (meters) for Simultaneous Pile Installation Activities.**

Daily Activity Scenario	Minimum Shutdown Zone					Level B Harassment Zone (m)		
	Cetaceans			Pinnipeds				
	LF	MF	HF	PW	OW			
Dock, 36-in Dia. Pile Installation, 20' Socket Depth - 2 pile/day	3,500	110	3,580	1,610	50	18,478		
Dock Abutment, 36-in Dia. Pile Installation, 30' Socket Depth and 36-in Dia. Pile 20' Socket Depth		125	4,150	1,865				
RHIB Fender Piles, 24-in Dia. Pile Installation, 20' Socket - 2 pile/day	650	25	770	350				
24-in Dia. Template Piles, 10' Socket Depth - 4 piles/day								
24-in Dia Wave Attenuator Piles, 20' Socket Depth - 2 pile/day								
Retaining Wall - HP Pile inserted in Drilled 24-in Dia Sockets, 20' Socket Depth - 2 piles/day								
Dock, 36-in Dia. Pile Installation, 20' Socket Depth - 1 pile/day and Wave Attenuator, 24-in Dia. Pile Installation, 20' Socket - 1 pile/day	2,050	75	2,400	1,080			50	34,146
Dock 36-in Dia. Pile Installation 30' Socket Depth and 24-in Dia Pile Installation 20' Socket Depth	2,900	105	3,500	1,545				
36-in Dock 20' socket x 2 Dock Abutment	45	10	65	30				
RHIB Fender Piles 24-in x 2	20		30	10				
24-in template 10'socket x 4	35		50					
24-in wave attenuator piles- 10'socket x 2			50					
24-in wave attenuator piles- 20'socket x 2			50					
						15,849		