



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

Warren Gool
FAA Alaskan Region
ATO WSA Engineering Services
222 W. 7th Avenue, Box 14
Anchorage, Alaska 99513

Dear Mr. Gool:

Enclosed is an Incidental Harassment Authorization (IHA) issued to the Federal Aviation Administration (FAA), under the authority of Section 101(a)(5)(D) of the Marine Mammal Protection Act (16 U.S.C. 1361 *et seq.*), to harass small numbers of marine mammals, by Level A and Level B harassment, incidental to the Biorca Island Dock Replacement Project in Symonds Bay, AK from May 1, 2018 through April 30, 2019.

You are required to comply with the conditions contained in the IHA. In addition, you must submit reports to the National Marine Fisheries Service's (NMFS) Office of Protected Resources within 90 days of the completion of construction work or expiration of the IHA, whichever comes sooner. The IHA requires monitoring of marine mammals by qualified individuals before, during, and after pile driving and demolition activities and reporting of marine mammal observations, including species, numbers, and behavioral modifications potentially resulting from this activity.

If you have any questions concerning the IHA or its requirements, please contact Shane Guan, Office of Protected Resources, NMFS, at 301-427-8418.

Sincerely,

Donna S. Wieting
Director, Office of Protected Resources

OCT 25 2017

Enclosures





Incidental Harassment Authorization

The Federal Aviation Administration (FAA), is hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (MMPA, 16 U.S.C. 1371 (a)(5)(D)) and 50 CFR 216.107 to take, by Level A and Level B harassment, small numbers of marine mammals incidental to conducting their Biorka Island Dock Replacement Project in Symonds Bay, AK, contingent upon the following conditions:

- (a) This incidental harassment authorization (IHA) is valid for 1 year from May 1, 2018 through April 30, 2019.
- (b) This IHA is valid only for pile driving and removal activities associated with the Biorka Island Dock Replacement Project in Symonds Bay, Alaska from May 1 to September 30, 2018.
- (c) General Conditions
 - 1. A copy of this IHA must be in the possession of the FAA, its designees, and work crew personnel operating under the authority of this IHA.
 - 2. The species authorized for taking are listed in Table 1.
 - 3. The taking, by Level A and Level B harassment, is limited to the species listed in Table 1.

Table 1. Authorized Take Numbers.

Species	Authorized Take	
	Level A	Level B
Harbor seal	13	350
California sea lion	6	350
Harbor porpoise	45	105



Killer whale	0	36
Humpback whale	3	350

4. The taking by injury (Level A harassment) is limited to the species and numbers indicated in Table 1.
5. The taking by serious injury or death of the species listed in condition 3 of the IHA, or any taking of any other species of marine mammal, are prohibited and may result in the modification, suspension, or revocation of this IHA.
6. The FAA shall conduct briefings between construction supervisors and crews, marine mammal monitoring team, acoustic monitoring team, and staff prior to the start of all pile driving and removal activities, and when new personnel join the work.

(d) Mitigation Measures

The holder of this IHA is required to implement the following mitigation measures.

1. For all pile driving and removal, the FAA shall implement a minimum shutdown zone of 10 m radius around the pile. Additionally, the FAA shall implement shutdown zones for each construction scenario as presented in Table 2. If a marine mammal comes within or approaches the applicable shutdown zone, such operations shall cease. A description of each of the scenarios is provided in Table 3.

Table 2. Distances to Level A Shutdown and Level B Exposure Zones.

	Distance to Level A Shutdown zone (m)											
	Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5		Scenario 6	
Species	Continuous	Impulse	Continuous	Impulse	Continuous	Impulse	Continuous	Impulse	Continuous	Impulse	Continuous	Impulse
Harbor Porpoise	50	10	600	50	50	800	400	100	10	1,600 ⁴	80	1,600 ⁴
Humpback whales	10	10	400	30	10	700	300	80	10	700	40	1,400
Harbor Seals	10	10	80	10	10	200	60	10	10	300	10	800
Killer whales	10	10	10	10	10	10	10	10	10	150	10	250
Steller sea lions	10	10	10	10	10	10	10	10	10	10	10	80
	Distance to Level B Monitoring Zones (m)											
All marine mammals	1,800	10	10,100 ⁵	800	5,000	600	10,100 ⁵	1,300	800	430	5,000	800

NOTE: Vibratory and impulse hammering will not happen simultaneously; there will be sufficient time for marine mammal observer (MMO)s to be notified and to adjust monitoring as needed. An MMO shall be stationed at the mouth of the bay about 800 m from the noise source.

⁴Actual Level A zone is larger (see Table 6-3 in the FAA's application), but 1.6 km (1 mile) is considered to be a reasonable distance to monitor.

⁵Takes shall be extrapolated due to these large monitoring zones.

Table 3. Pile Driving Modeling Scenarios for the Biorca Project.

Scenario	Description	Piles installed per day	Vibratory		DTH		Impact		Shift (hr)
			Hrs per pile	Total hours per day	Hours per pile	Total hours per day	Hours per pile	Total strikes per day	
S1	Removal of existing piles and installation/removal of temporary pile ^{s1}	21	0.33	6.93	NA ²		NA ²		6.93
S2	Installation of 18-inch pipe piles (dock and dolphin)	3		0.99	2	6	0.17	15	7.49
S3	Installation of 18-inch pipe piles (barge landing)	4		1.32	NA		0.33	2720	2.65
S4	Installation of 30-inch pipe piles (dolphins)	2		0.66	2	4	0.17	10	4.99
S5	Installation of H piles (dock wave barrier)	8		2.64	NA ²		0.33	5440	5.31
S6	Installation of sheet piles (dock wave barrier and barge)	12		3.96	NA ²		0.25	6120	6.96

¹Existing piles to be removed include 3 24 in concrete piles, 14 8 in steel piles, 8 10 in steel piles, 14 12.75 in steel piles, and 7 14 to 8 in timber piles.

²NA indicates when a pile driving method was not required in a given scenario.

2. For in-water heavy machinery work other than pile driving (e.g., standard barges, tug boats, barge-mounted excavators, or clamshell equipment used to place or remove material), if a marine mammal comes within 10 meters, operations shall cease and vessels shall reduce speed to the minimum level required to maintain steerage and safe working conditions.
3. The FAA shall establish monitoring locations as described below.
4. For all pile driving and removal activities, a minimum of two observers shall be deployed, with one positioned to achieve optimal monitoring of the

shutdown zones and the second positioned to achieve optimal monitoring of surrounding waters of Biorca dock and portions of Symonds Bay and Sitka Sound. If practicable, the second observer should be deployed to an elevated position with clear sight lines to the zones indicated in Table 2.

5. These observers shall record all observations of marine mammals, regardless of distance from the pile being driven, as well as behavior and potential behavioral reactions of the animals.

6. All observers shall be equipped for communication of marine mammal observations amongst themselves and to other relevant personnel (*e.g.*, those necessary to effect activity delay or shutdown).

7. Monitoring shall take place from 30 minutes prior to initiation of pile driving and removal activity through 30 minutes post-completion of pile driving and removal activity. In the event of a delay or shutdown of activity resulting from marine mammals in the shutdown zone, animals shall be allowed to remain in the shutdown zone (*i.e.*, must leave of their own volition) and their behavior shall be monitored and documented. Monitoring shall occur throughout the time required to drive a pile. The shutdown zone must be determined to be clear during periods of good visibility (*i.e.*, the entire shutdown zone and surrounding waters must be visible to the naked eye).

8. If a marine mammal approaches or enters the shutdown zone, all pile driving and removal activities at that location shall be halted. If pile driving is halted or delayed due to the presence of a marine mammal, the activity may not commence or resume until either (A) the animal has voluntarily left and been

visually confirmed beyond the shutdown zone, (B) 15 minutes have passed without re-detection of small cetaceans and pinnipeds, or (C) 30 minutes have passed without re-detection of large cetaceans, whichever happens sooner.

9. If a species for which authorization has not been granted, or a species for which authorization has been granted but the authorized takes are met, approaches or is observed within the Level B harassment zone (Table 2), activities must shut down immediately using delay and shut-down procedures. Activities must not restart until the animals have been confirmed to have left the area or the time periods have elapsed, as indicated in (d)8 above

10. Monitoring shall be conducted by National Marine Fisheries Service (NMFS)-approved observers. Trained observers shall be placed from the best vantage point(s) practicable to monitor for marine mammals and implement shutdown or delay procedures when applicable through communication with the equipment operator. Observer training must be provided prior to project start, and shall include instruction on species identification (sufficient to distinguish the species listed in condition 3), description and categorization of observed behaviors and interpretation of behaviors that may be construed as being reactions to the specified activity, proper completion of data forms, and other basic components of biological monitoring, including tracking of observed animals or groups of animals such that repeat sound exposures may be attributed to individuals (to the extent possible).

11. The FAA shall use soft start techniques recommended by NMFS for impact pile driving. Soft start requires contractors to provide an initial set of

strikes at reduced energy, followed by a thirty-second waiting period, then two subsequent reduced energy strike sets. Soft start shall 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 thirty minutes or longer.

12. Pile driving shall only be conducted during daylight hours.

13. The FAA shall use cushions during impact pile driving.

(e) Monitoring

The holder of this Authorization is required to conduct marine mammal monitoring during pile driving and removal activities. Marine mammal monitoring and reporting shall be conducted in accordance with the monitoring measures in the application.

1. The FAA shall collect sighting data and behavioral responses to pile driving and removal and drilling activities for marine mammal species observed in the region of activity during the period of activity. All observers shall be trained in marine mammal identification and behaviors, and shall have no other construction-related tasks while conducting monitoring.

2. Monitoring shall be conducted before, during, and after pile driving and vibratory removal activities.

3. The FAA shall collect Sound Source Verification (SSV) data, including measured source levels for impact pile driving, vibratory pile driving, and down-the hole (DTH) drilling. The FAA shall provide all monitoring data to NMFS. A minimum of two piles of the 18-in and two piles of the 30-in piles for each construction type (i.e. impact and vibratory pile driving and DTH drilling) shall be monitored. Piles chosen to be

monitored shall be representative of the different sizes and range of typical water depths at the project location where piles shall be driven with an impact or vibratory hammer.

One bottom-mounted hydrophone shall be placed at the nearest distance, approximately 10 meters, from each pile being monitored. An additional hydrophone shall be placed at mid-water depth at a distance of 100 to 200 meters from the pile to provide two sound-level readings during ambient and pile driving conditions. A third hydrophone may be deployed at a greater distance (*e.g.*, 1-2 km or further). Underwater sound levels shall be continuously monitored during the entire duration of each pile being driven. Sound levels shall be measured in dB re: 1 μ Pa.

(f) Reporting

The holder of this Authorization is required to:

1. Submit a draft report on all monitoring conducted under the IHA within 90 days of the completion of marine mammal monitoring, or 60 days prior to the issuance of any subsequent IHA for projects at the Project area, whichever comes first. A final report shall be prepared and submitted within thirty days following resolution of comments on the draft report from NMFS. This report must include:

- A. Detailed information about any implementation of shutdowns, including the distance of animals to the pile and description of specific actions that ensued and resulting behavior of the animal, if any.

- B. Description of attempts to distinguish between the number of individual animals taken and the number of incidents of take, such as ability to track groups or individuals.

C. An estimated total take estimate extrapolated from the number of marine mammals observed during the course of construction activities, if necessary.

D. Reporting injured or dead marine mammals:

1) In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by this IHA, such as a serious injury or mortality, the FAA shall immediately cease the specified activities and report the incident to the Office of Protected Resources at 301-427-8401, NMFS, and the Alaska Regional Stranding Coordinator at 877-925-7773. The report must include the following information:

- a. Time and date of the incident;
- b. Description of the incident;
- c. Environmental conditions (*e.g.*, wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- d. Description of all marine mammal observations in the 24 hours preceding the incident;
- e. Species identification or description of the animal(s) involved;
- f. Fate of the animal(s); and
- g. Photographs or video footage of the animal(s).

Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS shall work with the FAA to determine what measures are necessary to

minimize the likelihood of further prohibited take and ensure MMPA compliance. The FAA may not resume their activities until notified by NMFS.

- 2) In the event that the FAA discovers an injured or dead marine mammal, and the lead observer 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), the FAA shall immediately report the incident to the Office of Protected Resources at 301-427-8401, NMFS, and the Alaska Regional Stranding Coordinator at 877-925-7773.

The report must include the same information identified in (f)1.D.(1) of this IHA.

Activities may continue while NMFS reviews the circumstances of the incident. NMFS shall work with the FAA to determine whether additional mitigation measures or modifications to the activities are appropriate.

- 3) In the event that the FAA discovers an injured or dead marine mammal, and the lead observer determines that the injury or death is not associated with or related to the activities authorized in the IHA (*e.g.*, previously wounded animal, carcass with moderate to advanced decomposition, scavenger damage), the FAA shall report the incident to the Office of Protected Resources, NMFS at 301-427-8401, and the Alaska Regional Stranding Coordinator at 877-925-7773, NMFS, within 24 hours of the discovery. The FAA shall provide photographs or video footage or other documentation of the stranded animal sighting to NMFS.

2. Results of the SSV measurements. The reports must include the following information:

- A. Size and type of piles;
- B. A detailed description of the noise attenuation device, including design specifications;
- C. The impact hammer energy rating used to drive the piles, and the make and model of the hammer and the output energy;
- D. The physical characteristics of the bottom substrate into which the piles were driven;
- E. The depth of water into which the pile was driven;
- F. The depth into the substrate into which the pile was driven;
- G. A description of the sound monitoring equipment;
- H. The distance between hydrophones and pile;
- I. The depth of the hydrophones and depth of water at hydrophone locations;
- J. The distance from the pile to the water's edge;
- K. The total number of strikes to drive each pile and for all piles driven during a 24-hour period;
- L. The results of the hydroacoustic monitoring;
- M. Source levels for peak and root mean square sound pressure level (RMS SPL)s and single strike sound exposure level (SEL) at 10 m from the pile, and RMS pulse duration that contains 90% of pulse energy.

N. The distance at which peak, cumulative SEL, and RMS values exceed the respective threshold values;

O. For vibratory pile driving, SEL based on 30 second averaging of sound intensity;

P. The spectragraphs for each pile type; and

Q. A description of any observable marine mammal behavior in the immediate area and, if possible, correlation to underwater sound levels occurring at that time.

(g) This Authorization may be modified, suspended or withdrawn if the holder fails to abide by the conditions prescribed herein, or if NMFS 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.

OCT 25 2017

Date