



Protected Species Monitoring and Mitigation Plan

Hydaburg Seaplane Base
Refurbishment Project

State Project #: SFAPT00328

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Attachment 1: Example Data Forms

Acronyms and Abbreviations

BiOp	Biological Opinion
DOT&PF	Alaska Department of Transportation & Public Facilities
DPS	Distinct Population Segment
DTH	Down-the-Hole
ESA	Endangered Species Act
IHA	Incidental Harassment Authorization
MMO	Marine Mammal Observer
MMPA	Marine Mammal Protection Act
NMFS	National Marine Fisheries Service
PSO	Protected Species Observer
QA	Quality Assurance
QC	Quality Control



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1 INTRODUCTION

The purpose of this Protected Species Monitoring and Mitigation Plan is to describe monitoring procedures for affected marine species and mitigation actions that will be implemented by the Alaska Department of Transportation & Public Facilities (DOT&PF) during pile installation and removal associated with the Hydaburg Seaplane Base Refurbishment Project (Project; see Figure 1-1). This Protected Species Monitoring and Mitigation Plan was prepared as part of the application for an Incidental Harassment Authorization (IHA) under the Marine Mammal Protection Act (MMPA) and in support of formal consultation with the National Marine Fisheries Service (NMFS) under Section 7 of the Endangered Species Act (ESA). For the purposes of this document, “protected species” refers to sunflower sea stars and marine mammals.

The overall goal of the Protected Species Monitoring and Mitigation Plan is to comply with the Project IHA and Biological Opinion (BiOp) during in-water pile installation and removal by monitoring the Project area and documenting all marine mammals potentially exposed to noise at or above established thresholds; minimizing impacts to protected species through mitigation measures; and collecting data pertaining to protected species exposures (takes), occurrence of protected species, and behavior of marine mammals in the Project area.

1.1 Project Description

The Project will involve the removal of five existing cantilever steel pipe piles (16-inch diameter; summarized in Table 1-1) that support the existing multiple-float structure. The multiple-float timber structure, which covers 4,000 square feet, will also be removed. A new 4,800-square-foot, single-float timber structure will be installed in the same general location. Four 24-inch and four 20-inch permanent steel pipe piles will be installed vertically to act as restraints for the new seaplane float. Up to 10 temporary 24-inch steel pipe piles will be installed to support pile installation and will be removed following completion of construction. Rock sockets and tension anchors will be required on all 24-inch piles and two 20-inch piles. Rock sockets will also be potentially required on five of the temporary piles. The marine construction associated with the Project will occur during a 2-month period in fall 2024; however, to avoid unexpected delays, a 1-year authorization is requested to begin on 15 September 2024. See the Project IHA application for further design and construction details.

The Project has the potential to generate elevated levels of underwater and in-air noise that could exceed Level A (auditory injury) and Level B (disturbance) harassment thresholds established by NMFS under the revised Technical Guidance (NMFS 2018) and the interim criteria (70 *Federal Register* 1871–1875), respectively. Level A harassment means any act of pursuit, torment, or annoyance that has the potential to injure a marine mammal or marine mammal stock in the wild. Level B harassment means any act of pursuit, torment, or annoyance that 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, but that does not have the potential to injure a marine mammal or marine mammal stock in the wild. For sunflower sea stars, a ‘take’ will follow the ESA definition, and be documented if a sunflower sea star is relocated from a pile during pile removal.

Table 1-1. Numbers and Types of Piles to be Installed and Removed

Pile Diameter and Type	Number of Piles	Rock Sockets	Tension Anchors	Impact Strikes per Pile (duration in minutes)	Vibratory Duration per Pile, minutes	Rock Socket DTH Pile Installation, Duration per Pile, minutes (range)	Tension Anchor DTH Pile Installation, Duration per Pile, minutes (range)	Total Duration of Activity per Pile, hours	Typical Production Rate in Piles per Day (range)	Days of Installation or Removal
Pile Installation										
24" Steel Plumb Piles (Permanent)	4	4	4	50 (30)	15	240 (60–480)	120 (60–240)	6.75	0.5 (0–1)	8
20" Steel Plumb Piles (Permanent)	4	2	2	50 (30)	15	240 (60–480)	120 (60–240)	0.75 / 6.75*	0.5 (0–1)	8
24" Steel Piles (Temporary)	10	5	N/A	N/A	15	240 (60–480)	N/A	4.25	2.5 (1–10)	4
Pile Removal										
16" Steel Cantilevered Piles	5	N/A	N/A	N/A	30	N/A	N/A	0.5	2.5 (2–4)	2
24" Steel Piles (Temporary)	10	N/A	N/A	N/A	30	N/A	N/A	0.5	2.5 (2–4)	4
TOTALS	23	11	6	N/A	N/A	N/A	N/A	N/A	N/A	26

Note: DTH = down-the-hole; N/A = not applicable

* Two of the 20-inch plumb piles will include vibratory and impact installation in addition to rock sockets and tension anchors, estimated at 6.75 hours duration total, and two will only use vibratory and impact, estimated at 0.75 hours duration total.



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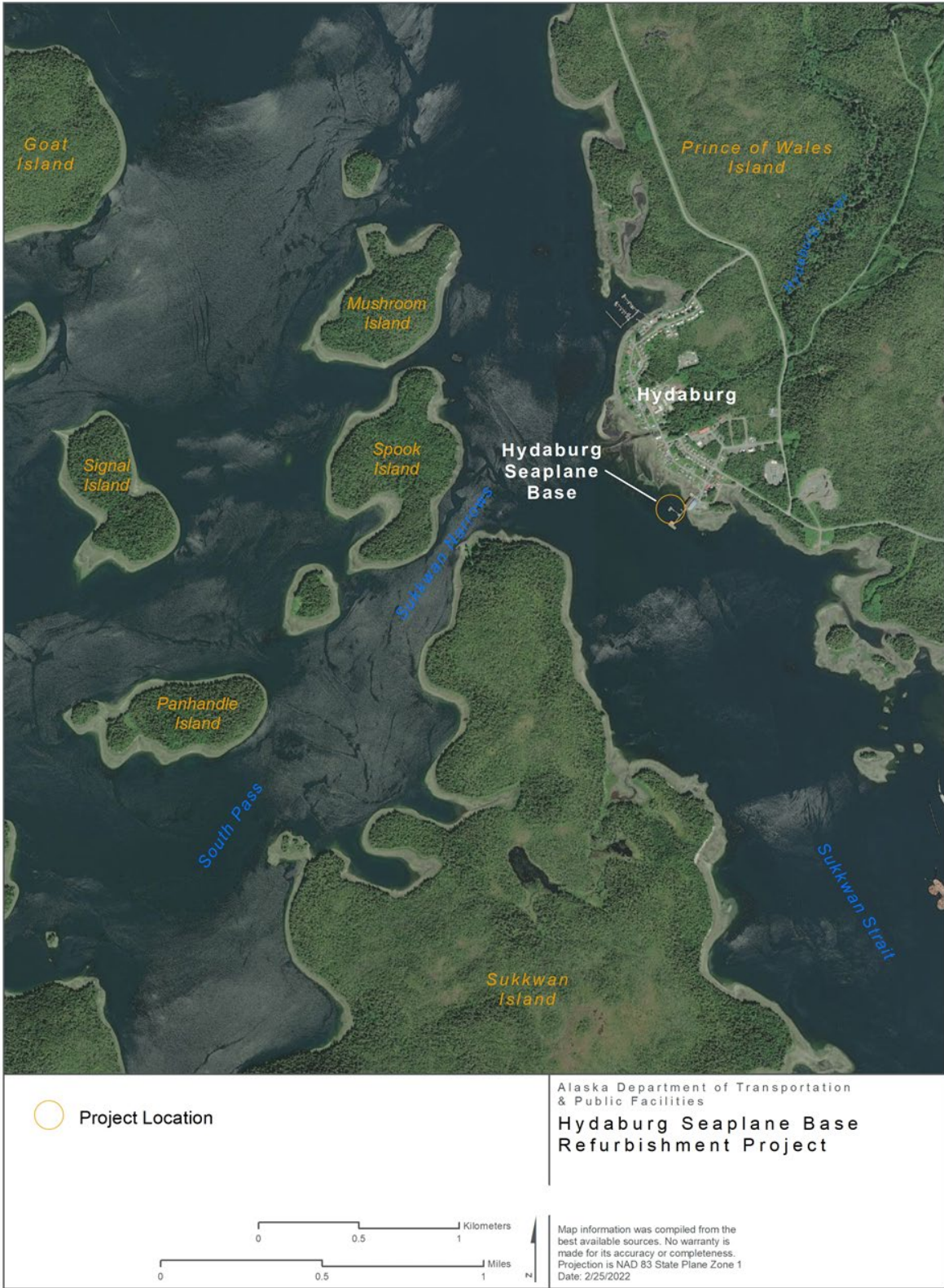


Figure 1-1. Project Location



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1.2 Protected Marine Mammals

Steller sea lions (*Eumetopias jubatus*), harbor seals (*Phoca vitulina*), Northern elephant seals (*Mirounga angustirostris*), harbor porpoises (*Phocoena phocoena*), Dall's porpoises (*Phocoenoides dalli*), Pacific white-sided dolphins (*Lagenorhynchus obliquidens*), killer whales (*Orcinus orca*), minke whales (*Balaenoptera acutorostrata*), and humpback whales (*Megaptera novaeangliae*), including the ESA-listed Mexico Distinct Population Segment (DPS) of humpback whales, may occur in the Project area; a small number of Level B exposures was authorized for these marine mammal species under the MMPA (see Project IHA, NMFS 2024). Additionally, a small number of Level A exposures were authorized for harbor seals and harbor porpoises under the MMPA (NMFS 2024). Authorization for a small number of Level B exposures of the ESA-listed Mexico DPS of humpback whales was also granted in the Project BiOp and Incidental Take Statement (NMFS 2023).

Under the BiOp Incidental Take Statement (ITS), NMFS has authorized up to 15 takes of sunflower sea stars during pile removal (NMFS 2023).

Under the IHA and BiOp, NMFS authorized 560 exposures of marine mammals to Level B harassment and 116 exposures of marine mammals to Level A harassment, for a total of 676 potential exposures (Table 1-2).

Sea otters (*Enhydra lutris*) are not expected to occur within the Project area. However, should they occur, shutdown zones have been established to avoid take (Table 2-1).

Table 1-2. NMFS Authorized Level A and B Takes of Marine Mammals

Species	DPS/Stock	Estimated Number of Exposures to Level A Harassment	Estimated Number of Exposures to Level B Harassment	Total Estimated Exposures (Level A and Level B)
Steller sea lion	Eastern DPS	0	240	240
Harbor seal	Dixon/Cape Decision Stock	78	130	208
Northern elephant seal	California breeding stock	1	3	4
Harbor porpoise	Southeast Alaska	12	40	52
Dall's porpoise	Alaska	15	15	30
Pacific white-sided dolphin	North Pacific	0	92	92
Killer whale	West Coast Transient Alaska Resident Northern Resident	0	15	15
Humpback whale	Hawaii DPS	9	22	31
	Mexico DPS	0	1	1
Minke whale	Alaska	1	2	3
Total	N/A	116	560	676

Note: DPS = Distinct Population Segment; N/A = not applicable.

2 PROTECTED SPECIES MONITORING AND MITIGATION MEASURES

The complete list of required avoidance, minimization, and mitigation measures can be found in the Project IHA (NMFS 2024) and BiOp (NMFS 2023). Avoidance and minimization measures described here include establishment of Level A and Level B harassment zones, protected species monitoring, and specific mitigation measures that will be implemented during in-water pile installation and removal.

2.1 Shutdown Zones

During in-water pile installation, removal, or down-the-hole (DTH) drilling, the Contractor will monitor for all marine mammals within or approaching the Level A and Level B harassment zones. Monitoring all harassment zones, including the outer margins, enables trained Protected Species Observers (PSOs; also known as Marine Mammal Observers or MMOs) to be aware of and communicate the presence of marine mammals or sunflower sea stars in the Project area and thus prepare for potential shutdown of activity and documentation of exposures (takes).

Distances to the Level A and Level B harassment thresholds, as defined by sound isopleths, vary by marine mammal functional hearing group, pile size, duration of installation, and pile-installation method (Table 2-1). Figures illustrating the anticipated Level B harassment zones installation methods and shutdown zones for each method are provided in Figure 2-1 through Figure 2-5. Depending on tidal stage, the harassment zones may differ from the figures.

Note that the actual pile installation and removal durations may be longer or shorter than the numbers used for calculations in Table 2-1. Estimated duration of pile installation and removal methods are used to predict harassment zone sizes and are not intended to be caps or limits on these activities. It is anticipated that the actual durations will be determined based on the engineering specifications for the Project as determined by the contractor.

For those marine mammal species for which Level B exposures have not been requested, in-water pile installation and removal and DTH drilling will shut down immediately when the animals are sighted approaching or within the Level B zone. If a marine mammal authorized for Level B exposure is present in the Level B harassment zone, in-water pile installation and removal may continue, and a potential Level B exposure will be recorded. Pile installation by vibratory, impact, and DTH drilling methods may occur when marine mammals for which Level B exposure has been authorized are in the Level B harassment zone, whether they entered the Level B zone from the Level A zone (if relevant) or from outside the Project area. If the number of potential Level B exposures reaches the authorized limit, pile installation will be stopped as these species approach to avoid additional exposures of these species.

A 30-meter shutdown zone will be implemented for most species and all pile installation and removal methods to prevent direct contact and injury of marine mammals with construction equipment (Table 2-1). Shutdown zones shown in Table 2-1 have been rounded up to simplify management of monitoring. Shutdown zones less than 1,000 meters were rounded up to the nearest 10 meters (Table 2-1).



Table 2-1. Combined Level A Harassment Zones, Shutdown Zones, and Level B Zones

Activity	Pile Size (in)	Minutes per Pile or Strikes per Pile	Piles Per Day	Rounded Level A Zones and Minimum Shutdown Zones (meters)											Level B Zones
				LF		MF		HF		PW		OW		Sea Otters	
				Shutdown Zone	Level A Zone	Shutdown Zone	Level A Zone	Shutdown Zone	Level A Zone	Shutdown Zone	Level A Zone	Shutdown Zone	Level A Zone	Shutdown Zone	
				Humpback Whale, Minke Whale		Killer Whale, Pacific White-sided Dolphin		Harbor and Dall's Porpoise		Harbor and Northern Elephant Seal		Steller Sea Lion		Shutdown to avoid Level A and B Take	All Species Except Sea Otters
				Level A Take for Humpback Whale Only		No Level A Take		Level A Take for Harbor Porpoise Only		Level A Take for Harbor Seal Only		No Level A Take			
				Shutdown Zone	Level A Zone	Shutdown Zone	Level A Zone	Shutdown Zone	Level A Zone	Shutdown Zone	Level A Zone	Shutdown Zone	Level A Zone		
Vibratory Installation	20- and 24-inch	15 Minutes	2 Piles	30	5	30	1	30	7	30	3	30	1	15	5,412
Vibratory Installation	20- and 24-inch	30 Minutes	10 Piles	30	20	30	2	30	30	30	13	30	1	15	
Vibratory Removal	16-inch	30 Minutes	2 Piles	30	5	30	1	30	7	30	3	30	1	15	3,415
Vibratory Removal	24-inch	30 Minutes	2 Piles	30	7	30	1	30	11	30	5	30	1	15	5,412
DTH (Rock Socket)	20- and 24-inch	60 Minutes	Based on Minutes of DTH	360	359	30	13	430	427	200	192	30	14	265	13,594
		120 Minutes		570	569	30	21	500	678	310	305	30	23	265	
		180 Minutes		750	746	30	27	500	888	400	399	30	29	265	
		240 Minutes		1,000	903	40	33	500	1,076	400	484	40	36	265	
		300 Minutes		1,000	1,048	40	38	500	1,249	400	561	50	41	265	
		360 Minutes		1,000	1,184	50	43	500	1,410	400	634	50	47	265	
		420 Minutes		1,000	1,312	50	47	500	1,563	400	702	60	52	265	
		480 Minutes		1,000	1,434	60	51	500	1,708	400	768	60	56	265	



Activity	Pile Size (in)	Minutes per Pile or Strikes per Pile	Piles Per Day	Rounded Level A Zones and Minimum Shutdown Zones (meters)										Level B Zones	
				LF		MF		HF		PW		OW			Sea Otters
				Humpback Whale, Minke Whale		Killer Whale, Pacific White-sided Dolphin		Harbor and Dall's Porpoise		Harbor and Northern Elephant Seal		Steller Sea Lion		Shutdown to avoid Level A and B Take	All Species Except Sea Otters
				Level A Take for Humpback Whale Only		No Level A Take		Level A Take for Harbor Porpoise Only		Level A Take for Harbor Seal Only		No Level A Take			
				Shutdown Zone	Level A Zone	Shutdown Zone	Level A Zone	Shutdown Zone	Level A Zone	Shutdown Zone	Level A Zone	Shutdown Zone	Level A Zone		
DTH (Tension Anchor)	8-inch	60 Minutes	Based on Minutes of DTH	40	36	30	2	50	43	30	20	30	2	265	2,512
		120 Minutes		60	57	30	2	70	68	40	31	30	3	265	
		180 Minutes		80	75	30	3	90	89	40	40	30	3	265	
		240 Minutes		100	91	30	4	110	108	50	49	30	4	265	
		300 Minutes		110	105	30	4	130	125	60	57	30	5	265	
		360 Minutes		120	119	30	5	150	141	70	64	30	5	265	
		420 Minutes		140	132	30	5	160	157	80	71	30	6	265	
		480 Minutes		150	144	30	6	180	171	80	77	30	6	265	
Impact	20-inch	50 Strikes	1 Pile	50	47	30	2	60	56	30	25	30	2	265	631
			2 Piles	80	74	30	3	90	88	40	40	30	3	265	
Impact	24-inch	50 Strikes	1 Pile	70	63	30	3	80	75	40	34	30	3	265	1,585
			2 Piles	100	100	30	4	120	119	60	54	30	4	265	

Note: Actual pile installation and removal durations may be longer or shorter. Estimated duration of pile installation and removal methods are not intended to be caps or limits on these activities. It is anticipated that the actual durations will be determined based on the engineering specifications for the Project as determined by the contractor. HF = high frequency; LF = low frequency; MF = mid-frequency; OW = otariid in water; PW = phocid in water



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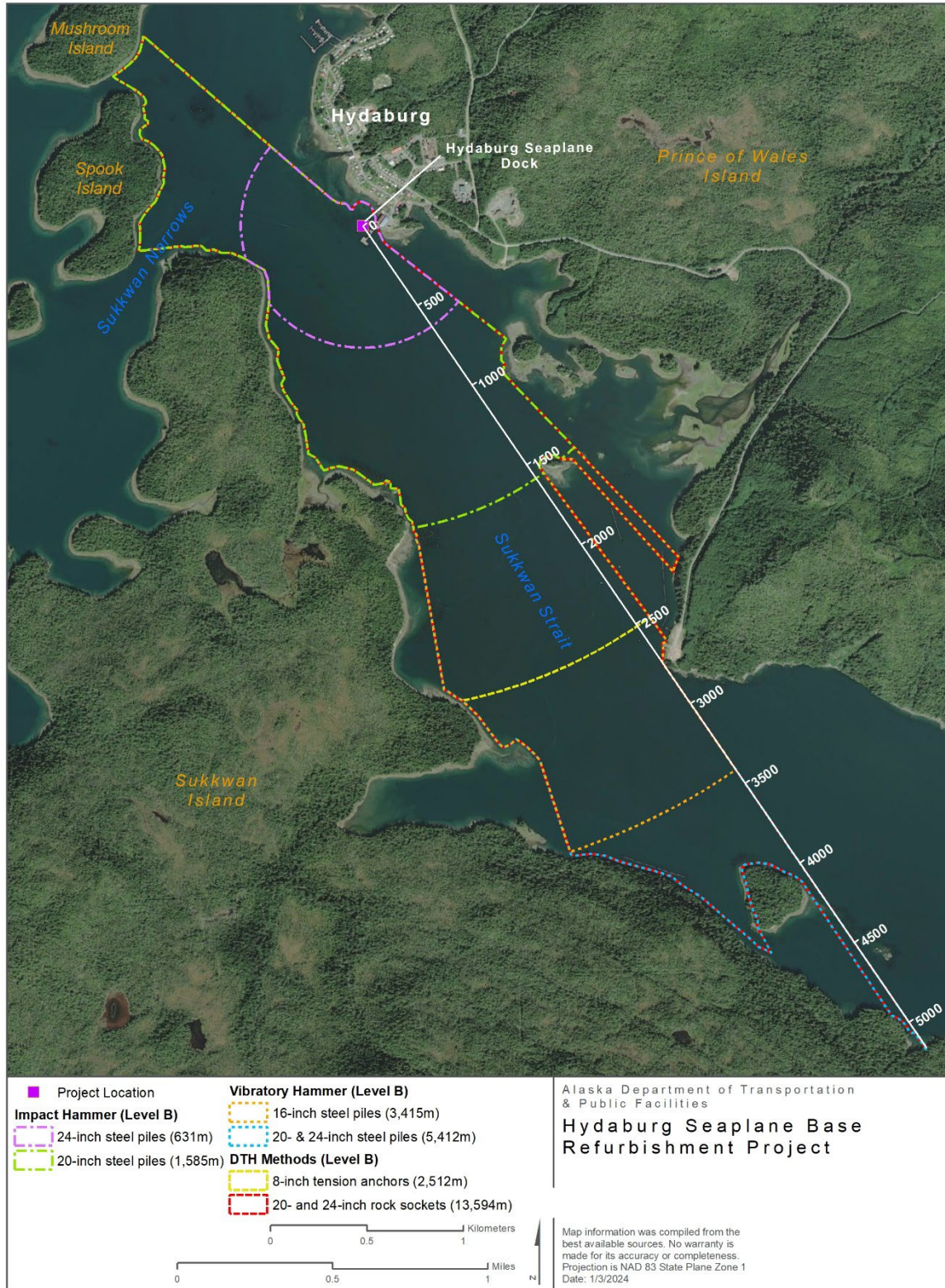


Figure 2-1. Level B Harassment Isopleths during Vibratory, Impact, and Down-the-Hole Installation and Vibratory Removal

Note: Depending on tide, actual zone extents may change. Figure for reference only.



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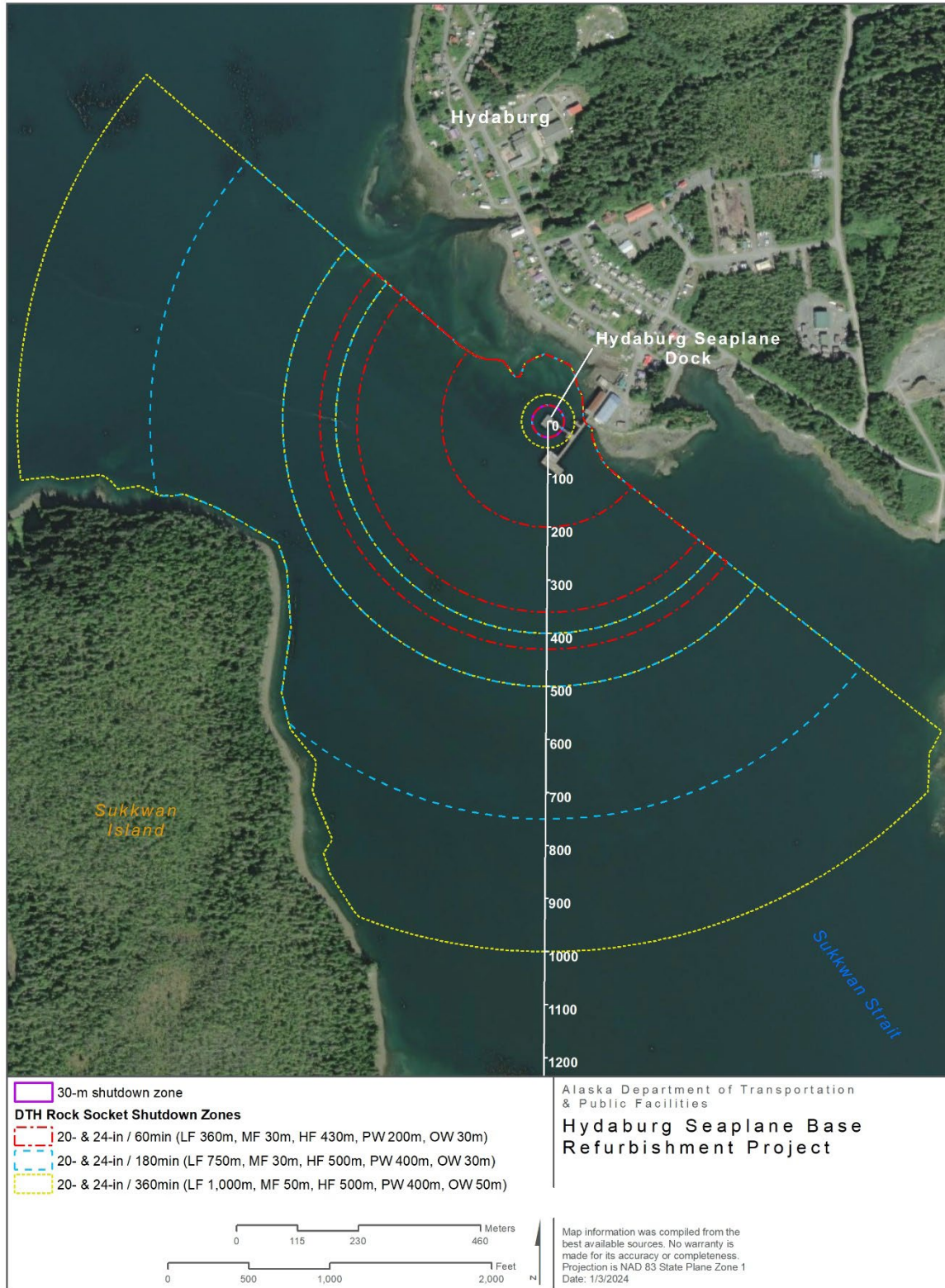


Figure 2-2. Representative Shutdown Zones during Down-the-Hole Rock Socket Installation

Note: Depending on tide, actual zone extents may change. Figure for reference only.



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Figure 2-3. Representative Shutdown Zones during DTH Tension Anchor Installation

Note: Depending on tide, actual zone extents may change. Figure for reference only.



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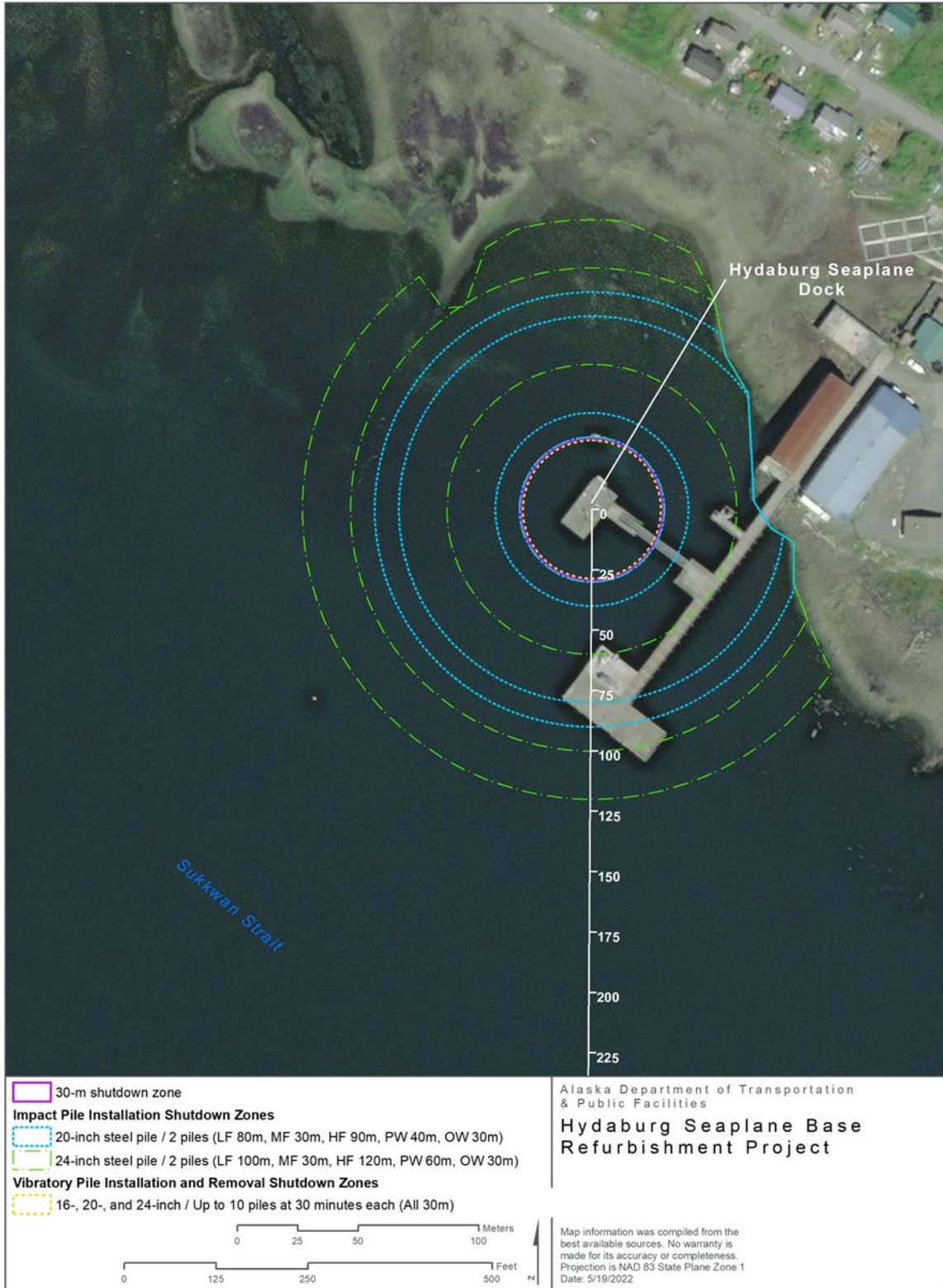


Figure 2-4. Shutdown Zones during Impact Installation and Vibratory Installation and Removal

Note: Depending on tide, actual zone extents may change. Figure for reference only.



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Figure 2-5. Sea Otter Shutdown Zones

Note: Depending on tide, actual zone extents may change. Figure for reference only.



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2.2 Protected Species Monitoring

To minimize potential impacts of Project activities on marine mammals, PSOs will be present during all pile installation and removal using impact, vibratory, and down-the-hole installation methods. The PSOs' primary responsibilities will be to search for, monitor, document, and track marine mammals.

PSOs will have no other construction-related tasks or responsibilities while monitoring for marine mammals. In addition to crew delegates, PSOs may be used to remove and relocate sunflower sea stars from piles as they are removed. However, PSOs will still abide by IHA and BiOp monitoring requirements. PSOs will understand their roles and responsibilities before beginning observations. A clear authorization and communication system will be in place to ensure that PSOs and construction crew members understand their respective roles and responsibilities.

2.2.1 Positioning

PSOs will be positioned at the best practical vantage point(s). It is possible to observe the entire width of Sukkwan Strait with unaided eyes. A minimum of two PSOs will monitor from different locations along the Hydaburg shorefront, allowing them collectively to monitor larger zones.

The observation point(s) may vary based on construction activity and location of piles or equipment. At least one of the monitoring locations will have an unobstructed view of the pile being driven and a good view of the Level A zones. This central position will be staffed by the Lead PSO, who will monitor the Level A zones and communicate with construction personnel about shutdowns and marine mammal exposure management. Walking or otherwise moving around the construction site may be helpful for monitoring the shutdown and Level A zones in their entirety. The Lead PSO may also be used to remove and relocate sunflower sea stars as piles are removed.

PSO(s) stationed along the road system will watch for marine mammals entering and leaving the Project area. PSOs will monitor for marine mammals approaching the Level B harassment zones from the north or south and will alert the Lead PSO of the number and species sighted so that no unexpected marine mammals approach the construction site. All PSOs will be in constant radio contact with one another, and the Lead PSO will be in contact with the construction team to request a work stoppage, if necessary.

2.2.2 Daily Monitoring Protocols

At the start of each day, the Contractor(s) will hold a briefing with the Lead PSO to outline the activities planned for that day. The PSOs will begin observations 30 minutes prior to the start of pile installation and removal (includes the start of the day and any break in activity longer than 30 minutes) and will continue observing at least 30 minutes following completion of pile installation and removal. The Contractor will have at least two PSOs present during pile installation and removal. PSOs will observe during rotating shifts of 4 to 6 hours, or as needed to prevent fatigue given the intermittent nature of pile installation and removal. No PSO will perform duties as an PSO for more than 12 hours in a 24-hour period.

Specific aspects and protocols of observations will include:

- Ongoing in-water pile installation and removal and DTH drilling may be continued during periods when conditions such as low light, high sea state, fog, ice, rain, glare, or other conditions prevent effective marine mammal monitoring of the entire Level B harassment zone. PSOs will continue to monitor the visible portion of the Level B harassment zone throughout the duration of pile installation and removal.
- If waters exceed a sea state that restricts the PSOs' abilities to make observations within the shutdown zones (e.g., heavy rain, excessive wind or fog), pile installation and removal will cease. Pile driving will not be re-initiated until the entire relevant shutdown zones are visible.
 - If zones are unable to be monitored for a period of 30 minutes or more due to environmental conditions, PSO breaks, or other circumstances, the 30-minute observation period prior to pile installation or removal will need to be completed again.
- If any marine mammal species not authorized for exposure is encountered during in-water pile installation or removal, pile installation or removal will cease and exposure will be avoided. Furthermore, the observations will be reported immediately to the DOT&PF Project Engineer, who will coordinate communication with the NMFS Office of Protected Resources.
- If a humpback whale potentially crosses into a Level A zone before shutdown occurs, this observation will be immediately reported to the DOT&PF Project Engineer, who will coordinate communication with the NMFS Office of Protected Resources.
- When a marine mammal is observed, its location will be determined using a rangefinder to verify distance and a GPS or compass to verify heading. Comparisons to nearby landmarks will also aid in determining the locations of sightings.
- Potential Level A and Level B exposures will be documented and recorded as they occur.

2.3 Mitigation Measures for In-water Pile Installation and Removal

The DOT&PF intends to implement the general monitoring approach that was analyzed in the project BiOp and *Federal Register* Notice of Proposed IHAs. DOT&PF also intends to adhere to the monitoring and mitigation measures as outlined in the final BiOp, Incidental Take Statement, and IHA. The complete list of required avoidance, minimization, and mitigation measures can be found in the Project IHA. Avoidance and minimization measures described here include soft starts, establishment of shutdown zones, and marine mammal and sunflower sea star monitoring. To minimize the effects of in-water pile installation and removal on marine mammals and sunflower sea stars, the following measures will be observed:

- Pile installation, proofing, and removal will occur only during daylight hours, when visual monitoring of marine mammals can be conducted.
 - Daylight hours, for the purposes of monitoring, are defined as the time between civil dawn and civil dusk. Exact times for civil dawn and dusk for various locations can be found online.

- A 30-meter shutdown zone will be implemented for all marine mammal species and all pile installation and removal methods to prevent direct contact and injury of marine mammals with construction equipment.
- Shutting down pile installation or removal when a marine mammal is approaching or observed within a defined shutdown zone will be used to avoid exposure.
- If a marine mammal authorized for Level B exposure is present in the Level B harassment zone, in-water pile installation and removal may continue and a potential Level B exposure will be recorded. Pile installation and DTH installation may occur when these species are in the Level B harassment zone, whether they entered the Level B zone from the Level A zone (if relevant) or from outside the Project area.
- If Level A or Level B exposure for a species reaches the authorized limit, pile installation will be stopped as individuals of this species approach the relevant zones to avoid additional exposure of this species.
 - If Level A or Level B exposure for a species reaches 80% of the authorized limit, the Project Engineer will be alerted.
 - If 75% of the total estimated days of in-water pile installation and removal area reached, the Project Engineer will be alerted.
- The Project Engineer will be alerted immediately if a potential unauthorized Level A take occurs.
- For those marine mammal species for which Level B exposure has not been requested, in-water pile installation and removal and drilling will shut down before they enter the Level B harassment zone to avoid unauthorized Level B exposure.
- If a marine mammal is entering or is observed within an established shutdown zone, pile installation and removal must be halted or delayed. Pile driving may not commence or resume until either the animal has voluntarily left and been visually confirmed beyond the shutdown zone or 15 minutes have passed without subsequent detections of the animal.
- For impact pile installation, the Contractor will provide an initial set of three strikes from the impact hammer at half energy or less, followed by a 1-minute waiting period and then two subsequent three-strike sets. This soft start will be applied prior to the beginning of pile installation each day or after an impact hammer has been idle for more than 30 minutes. No vibratory soft start is required.
- If a marine mammal is present within the Level A harassment zone, pile installation or removal will be delayed until the animal leaves the Level A harassment zone. Pile installation or removal will begin only after the PSOs have determined, through sighting, that the animal has moved outside the Level A harassment zone.
- If a marine mammal authorized for exposure is present in the Level B harassment zone, Pile installation or removal may begin and a potential Level B exposure will be recorded. Pile installation or removal may occur when these species are in the Level B harassment zone, whether they enter the Level B zone from the Level A zone or from outside the Project area.

- If a marine mammal is present in the Level B harassment zone, the Contractor may elect to delay Pile installation or removal to avoid a Level B exposure. To avoid a Level B exposure, Pile installation or removal will begin only after the PSOs have determined, through sighting or if 15 minutes has passed without a re-sighting, that the animal has moved outside the Level B harassment zone.
- If a marine mammal approaches within 10 meters of a Project vessel (e.g., barge, tugboat), the vessel shall reduce speed to the minimum level required to maintain safe steerage and working conditions until the marine mammal is at least 10 meters away from the vessel.
 - Vessels will adhere to the Alaska Humpback Whale Approach Regulations while transiting to and from the Project Site, and not approach humpback whales within 91 meters (100 yards)
- The Level A harassment zones for each pile will be monitored and implemented according to pile size, type, duration of installation, installation method, and functional hearing group as analyzed in the project BiOp and *Federal Register* Notice of Proposed IHAs.
- The Level B harassment zone for each pile will be monitored and implemented according to pile size, type, and installation method as outlined in the BiOp and *Federal Register* Notice of Proposed IHAs.
- PSO teams will be staffed as needed to effectively monitor the exposure zones, however the minimum of two PSOs will always be required during in-water pile installation and removal.

2.3.1 Sunflower Sea Star Mitigation Measures

- A pre-construction survey and biweekly (every 2 weeks) survey of the pilings and seafloor will take place during pile installation and removal.
 - Each pile installed may be monitored by remote underwater vehicle (ROV) or other video devices in lieu of a pre-construction or biweekly surveys, however monitoring the seafloor placement of each pile is not required in the BiOp.
 - If a sunflower sea star is attached to a pile being removed from the water, the sunflower sea star will be gently removed from the pile by the Lead PSO or a crew delegate and immediately released in an intertidal location nearby.
 - Daily seafloor surveys of the pile installation locations are not required.

2.3.2 Sea Otter Mitigation Measures

- A 15-meter shutdown zone will be implemented for sea otters during vibratory pile installation and removal, and a 265-meter shutdown zone will be implemented during impact and DTH pile installation.

3 PROTECTED SPECIES OBSERVER QUALIFICATIONS

All PSOs will undergo project-specific training in monitoring, data collection, and mitigation procedures specific to the Project. This training will also include communication protocols.

All PSOs must be capable of spotting and identifying marine mammals and documenting applicable data during all types of weather, including rain, sleet, snow, and wind. At a minimum, all PSOs will have or meet the following qualifications:

- PSOs will be independent of the activity contractor with no other responsibilities during monitoring periods.
- PSOs' visual acuity (correction is permissible) will be sufficient to allow detection and identification of marine mammals at the water's surface; use of binoculars may be necessary to correctly identify a sighting to species.
- PSOs will demonstrate ability to conduct field observations and collect data according to assigned protocols (this may include academic training and/or previous field experience).
- PSOs will have documented marine mammal monitoring experience or training, or an undergraduate degree in biological science or a related field. Project-specific training for this Project will meet the training requirement if the PSO has experience identifying marine mammals to species.
- PSOs will have sufficient training, orientation, or experience with construction operations to provide for personal safety during observations.
- PSOs will have the ability to communicate orally, by radio or in person, with project personnel about marine mammals observed in the area.
- PSOs will have the ability to collect the required marine mammal observation data as detailed in Section 4.

A designated Lead PSO will always be on-site and will remain responsible for implementing the Monitoring Plan for in-water pile installation and removal for the Project.

The Lead PSO must have education and experience that demonstrates qualifications to serve as the lead, including the following minimum requirements:

- Education in wildlife observation techniques from a university, college, or other formal education program,
- Writing skills sufficient to prepare daily activity logs and monthly and final reports,
- Training on the identification of sunflower sea stars and sea star wasting syndrome, and
- Previous professional marine mammal observation experience during construction.

4 DATA COLLECTION

4.1 Environmental Conditions and Construction Activity

PSOs will use the environmental conditions and construction activities log to document environmental conditions, types of construction activities, and other human activity in the area (Attachment 2). Environmental conditions will be recorded at the beginning and end of every monitoring period and at every half hour or as conditions change. Data collected will include PSO names, location of the observation station, time and date of the observation, weather conditions, air temperature, sea state, cloud cover, visibility, glare, tide, and ice coverage (if applicable).

PSOs will record the time that observations begin and end as well as the durations of shutdowns and delays. PSOs will document the reason(s) for stopping work, time of shutdown, and type of pile installation or other in-water work taking place. PSOs will document other, non-project-related activities that could disturb marine mammals in the area, such as the presence of large and small vessels. Additionally, all communications between PSOs and the construction crew will be documented.

Data concerning environmental conditions, marine mammal sightings, and mitigation measures will be entered into a spreadsheet. Each data entry will be checked for quality assurance and quality control (QA/QC). Upon request, the data will be submitted to NMFS along with the final monitoring report.

4.2 Sightings

Each marine mammal observation will be documented on a Marine Mammal Sighting Form consisting of a data page/table and a schematic map of the location of the observed animal (Attachment 1). Sightings data will include start and end times of each sighting; species; number of individuals; sex and age class, if possible; behavior and movement; distances and bearing from Project activities to the sighting; if individuals were within the Level A or B harassment zones and duration; initial and final heading of the animal; type of in-water activity at the time of sighting; and if and when Project activities were stopped in response to the sighting (Table 4-1). PSOs will record whether no exposures occurred or a potential Level A and/or Level B exposure occurred, including the number of marine mammals and species potentially exposed. To the extent practicable, the PSOs will record behavioral observations that may make it possible to determine if the same or different individuals are exposed as a result of Project activities over the course of a single day. When marine mammals are sighted, PSOs should delegate responsibilities so that one or more PSOs continue to scan the water to identify other marine mammals that may enter the area while another PSO continues to monitor and track the first sighting.

If sunflower sea stars are removed from piles during the pile removal process, a count of individuals removed, presence or absence of sea star wasting syndrome symptoms, status upon release (e.g., appears active, moving, not moving, appears injured, etc.), location of release, and duration of handling will be recorded and summarized for the monthly and final reports. For sightings during the pre-construction or biweekly surveys, a tally of individuals sighted, their general location (e.g., on seafloor, on pile, under structure), and presence or absence of sea star wasting syndrome symptoms will be collected and reported in monthly and final reports.

Table 4-1. Example Data Attributes and Definitions

Data Attribute	Attribute Definition and Units Collected
Start and end times of monitoring period	Time that monitoring by PSOs began and ended, without interruption
<i>Environmental Conditions</i>	
Weather conditions	Dominant weather conditions, collected every 30 minutes: sunny (S), partly cloudy (PC), light rain (LR), steady rain (R), fog (F), overcast (OC), light snow (LS), snow (SN)
Wind speed	In knots
Wind direction	From the north (N), northeast (NE), east (E), southeast (SE), south (S), southwest (SW), west (W), northwest (NW)
Wave height	Calm, ripples (up to 4 inches), small wavelets (up to 8 inches), large wavelets (up to 2 feet), small waves (up to 3 feet), moderate waves (up to 6 feet), large waves (up to 9 feet)
Cloud cover	Amount of cloud cover (0–100%)
Visibility	Maximum distance at which a marine mammal could be sighted
Glare	Amount of water obstructed by glare (0–100%) and direction of glare (from south, north, or another direction)
Tide	Predicted hourly data information gathered from National Oceanic and Atmospheric Administration will be available on-site
<i>Construction and Communication Activities</i>	
Time of event	Time that construction activities and all communications between PSOs and construction crews take place
Type of construction activity	Type of construction activity occurring, including startup, shutdown, and type of pile installation technique
Communication	Information communicated between PSOs and construction crew
<i>Marine Mammal Sighting Data</i>	
Time of initial and last sightings	Time the animals are initially and last sighted
Species	Species (use unidentified mysticete, odontocete, cetacean, or pinniped if unknown) and confidence in sighting
Number of individuals	Minimum and maximum number of animals counted; record the count the PSO believes to be the most accurate (i.e., best estimate)
Sex and age, if possible	Generally, numbers of females with pups or calves
Initial and final heading	Direction animals are headed when initially and last sighted
In-water construction activities at time of sighting	Types of construction activities occurring at time of sighting and mitigation measures implemented
Distance and bearing from marine mammal to construction activities	Distance from marine mammal to construction activities when initially sighted, at closest approach to activities, and at final sighting (include location relative to monitoring and shutdown zones and bearing from piling)
Harassment zone	Indicate which active Level A or B harassment zone the marine mammal entered, and duration it stayed within the applicable zone
Mitigation	Indicate if any mitigation measure (e.g. shutdown, delay) was enacted
Commercial activities at time of sighting	Description of nearby commercial or anthropogenic activities occurring at time of sighting not associated with the Project
Behavior	Behaviors observed; indicate primary and secondary behaviors
Change in behavior	Changes in behavior; indicate and describe
Group cohesion	Orientation of animals within the group and the distance between animals

4.3 Equipment

The following equipment and information will be required on-site for marine mammal monitoring:

- Portable radios for the PSOs to communicate with the Construction Contractor point of contact and other PSOs, or cellular phones and phone numbers for all PSOs and the Construction Contractor point of contact
- Daily tide tables
- Hand-held binoculars (7X or better) with built-in rangefinder or reticles
- Rangefinder
- Paper data forms or electronic data collection system (e.g., Toughbook or iPad) and backup paper forms
- Large (11- by 17-inch or similar) waterproof maps of the Project area and monitoring zones

4.4 Quality Assurance and Quality Control

Electronic data collection or paper data sheets will be QA/QC'd by the Lead PSO at the end of each monitoring day. No cells or information will be left blank. If information is not available or not applicable, the field will be populated with an "NA" or dash. The data will also be QA/QC'd once it is entered electronically.

4.5 Protected Species Monitoring Data Management

All protected species monitoring data will be entered into and stored in an electronic database or spreadsheet. The database or spreadsheet will be set up and structured for easy access and management of data and will be used to develop the protected species monitoring report. An electronic copy of the data spreadsheet will be available to NMFS upon request.

5 REPORTING

5.1 Notification of Intent to Commence Construction

DOT&PF will inform the NMFS Office of Protected Resources and the NMFS Alaska Region Protected Resources Division 1 week prior to commencing pile installation and removal (Reny Tyson Moore, 301-427-8481, reny.tyson.moore@noaa.gov).

5.2 Reporting

During construction, PSOs will maintain daily activity logs that include the following information:

- Time that each monitoring period begins and ends
- Prevailing environmental conditions
- In-water construction activities occurring during each monitoring period (including number, type, and size of piles)
- Indication of whether marine mammals were sighted, including species, numbers, and location
- Whether potential Level A or B exposures occurred, duration within harassment zones, and any mitigation measures enacted
- Numbers of sunflower sea stars relocated from pile removals

Within 90 days of the completion of the project, DOT&PF will submit to the NMFS Office of Protected Resources and Alaska Regional Office a draft final report of all monitoring conducted during the Project. Within 30 days of receiving comments from NMFS on the draft final report, DOT&PF will submit the final report to NMFS.

To the extent practicable, the PSOs will record behavioral observations that may make it possible to determine if the same or different individuals are being “taken” (or exposed) as a result of Project activities over the course of a day.

The monitoring reports will include a description of the monitoring protocol, a summary of the data recorded during monitoring, and an estimate of the number of marine mammals that may have been harassed. The report will comply with the IHA and BiOp and will include:

- Dates and times of monitoring and total number of days and hours of observations
- Weather and water conditions during each monitoring period
- Locations of observation stations used and dates/times when each location was used
- Numbers, species, group sizes, dates/times, and locations of marine mammals observed
- Sex and age classes of marine mammals observed, if possible
- Distances to marine mammal sightings relative to construction location(s), including closest approach to construction activities
- Details of all recorded marine mammal exposures, including the species, number of individuals, date/time, location, duration in harassment zone, and type of pile installation/removal occurring at the time of exposure
- Descriptions of observable marine mammal behavior in the Level A and Level B

harassment zones

- Times of shutdown and delay events, including when work was stopped and resumed due to the presence of marine mammals or other reasons
- Descriptions of the type and duration of any pile installation or removal occurring, including soft start procedures, duration per pile of vibratory or DTH piling or number of impact strikes.
- Number of sunflower sea stars relocated from pile removals, and a description of the relocations
- Results from preconstruction and biweekly sunflower sea star surveys
- Details of all shutdown and delay events and whether they were due to the presence of marine mammals, inability to clear the hazard area due to low visibility, or other reasons
- Tables, text, and maps to clarify observations

5.3 Notification of Injured or Dead Marine Mammals

In the unanticipated event that the specified activity (pile installation and removal) clearly causes the exposure of a marine mammal for which authorization has not been granted, such as a serious injury or mortality, DOT&PF will immediately cease pile installation and removal and report the incident to the NMFS Office of Protected Resources (301-427-8401; *PR.ITP.MonitoringReports@noaa.gov* and *itp.tyson.moore@noaa.gov*), the NMFS Alaska Region Protected Resources Division (907-271-5006), and the NMFS Alaska Regional Stranding Coordinator (907-271-3448) or hotline (1-877-925-7773).

The report will include the following information:

- Time, date, and location (latitude/longitude) of the incident
- Detailed description of the incident
- Description of vessel involved (if applicable), including the name, type of vessel, and vessel speed before and during the incident
- Status of all sound source use in the 24 hours preceding the incident
- Environmental conditions (wind speed and direction, wave height, cloud cover, and visibility)
- Description of marine mammal observations in the 24 hours preceding the incident
- Species identification, description, condition (including carcass if dead), behavior (if alive), and fate of animal(s) involved
- Photographs or video footage of animal(s) or equipment (if available)

Pile installation and removal shall not resume until NMFS is able to review the circumstances of the prohibited exposure. NMFS shall work with DOT&PF to determine what is necessary to minimize the likelihood of further prohibited exposures and ensure MMPA compliance. DOT&PF may not resume pile installation and removal until notified by NMFS' MMPA program via letter, email, or telephone.

In the event that DOT&PF discovers an injured or dead marine mammal and the Lead PSO determines that the cause of the injury or death is unrelated to the Project, DOT&PF will immediately report the incident to the Alaska Regional Stranding hotline (877-925-7773).



The report will include any applicable information listed above. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with DOT&PF to determine whether modifications to the activities are appropriate.

6 LITERATURE CITED

- NMFS (National Marine Fisheries Service). 2018. Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0): Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts, 2018 Revision. U.S. Department of Commerce, NOAA. NOAA Technical Memorandum NMFS-OPR-59.
- NMFS. 2023. Endangered Species Act Section 7(a)(2) Biological and Conference Opinion for the Hydaburg Seaplane Base Refurbishment Project. NMFS Consultation Number: AKRO-2022-03506. 19 December 2023.
- NMFS. 2024. Incidental Harassment Authorization – Hydaburg Seaplane Base Refurbishment Project. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, NMFS, Silver Spring, MD. 02 January 2024.



ATTACHMENT 1: EXAMPLE DATA FORMS



Marine Mammal Sighting Form

Project: _____ **Location:** _____ **Sighting #:** _____
(1st sighting of the day is Sighting#: 1)

Date: _____ **Observer(s):** _____

Time <small>(military)</small>		Species <small>(circle)</small>	Distance <small>(animal to activity)</small>		Number of Animals		Number of Animals in Each Class <small>(if possible)</small>			
Initial Sighting Time		Steller Sea Lion	Initial Distance		Min Count		Adults		Calves/ Pups	
Final Sighting Time		Harbor Seal								
Time Entered H-Zone B		Harbor Porpoise	Closest Distance		Max Count		Juveniles		Unkn. Age	
Time Exited H-Zone B		Dall's Porpoise								
Time Entered H-Zone A		Killer Whale	Final Distance		Best Count		Male		Female	
Time Exited H-Zone A		Humpback								
		Fin Whale					Unknown Sex			
		Gray Whale								
		Minke Whale								
		other: _____								

Behavior of Marine Mammal check all observed behaviors; place a 1 next to primary, 2 next to secondary activity):
Indicate any changes in behavior in the Additional Information section

Travel Fight Mill Other: _____
 Disoriented Play Dive
 Slap Spyhop Unknown
 Feeding Observed Swimming Toward Swimming Away from Site

Group Cohesion (Orientation of animals within the group and the approx. distance between animals) :

Project Activities and Harassment Zone

Entered Harassment Zone A? **Y or N** Entered Harassment Zone B? **Y or N**

In-Water Work was occurring at initial sighting? **Y or N** List In-water Activities: _____

SHUT DOWN or DELAYED from _____ to _____ (time)

NO SHUT DOWN, EXPLANATION REQUIRED :

Describe Commerical Activities (# and type of vessels offloading at sea food processing dock, traveling by, refueling at dock):

Additional Information (include more detailed information on behavior):

Draw locations on hardcopy map

