



# 2024 Protected Species Monitoring Report

## **Eareckson Air Station Long-term Fuel Pier Repairs Project Shemya Island, Alaska**

### **Final Report**

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Prepared for

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Anchorage, Alaska

and

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# TABLE OF CONTENTS

<b>ACRONYMS AND ABBREVIATIONS .....</b>	<b>III</b>
<b>1 INTRODUCTION .....</b>	<b>1</b>
<b>2 CONSTRUCTION CREW AND PROJECT STAFF BRIEFING .....</b>	<b>3</b>
<b>3 PROTECTED SPECIES OBSERVERS.....</b>	<b>3</b>
<b>4 MONITORING AND MITIGATION METHODS.....</b>	<b>4</b>
4.1 Monitoring Locations .....	4
4.2 PSO Equipment.....	7
4.3 Monitoring .....	7
<b>5 MARINE MAMMAL OBSERVATIONS .....</b>	<b>8</b>
5.1 Behaviors.....	9
5.2 Level B Takes .....	9
5.3 Dead Marine Mammal .....	13
<b>6 IN-WATER OPERATIONS .....</b>	<b>13</b>
<b>7 ENVIRONMENTAL AND OBSERVATION CONDITIONS.....</b>	<b>14</b>
<b>8 MITIGATION MEASURE SUMMARY .....</b>	<b>15</b>
<b>9 REFERENCES.....</b>	<b>18</b>

## LIST OF FIGURES

Figure 1. PSO Shelter at Station F .....	5
Figure 2. Project Overview Map .....	6
Figure 3. Overall Conditions .....	14
Figure 4. Visibility.....	15
Figure 5. Weather Conditions.....	15
Figure 6. Beaufort Sea State .....	15

## LIST OF TABLES

Table 1. Threatened and Endangered Species Endemic to Project Area with ESA Determinations .....	1
Table 2. Monitoring Times and Duration .....	7
Table 3. Marine Mammal Sighting Summary .....	8
Table 4. Marine Mammal Behaviors.....	9
Table 5. Summary of Level B Marine Mammal Exposures .....	10
Table 6. Number of Level B and Level A Takes Authorized and Remaining .....	12
Table 7. Summary of In-Water Vibratory Pile Installation and Removal .....	13
Table 8. Weather Delays and Shutdowns .....	16

## APPENDICES

- Appendix A– Marine Mammal Sighting Figure
- Appendix B – PSO Data (Electronic Deliverable)

## ACRONYMS AND ABBREVIATIONS

%	percent
61N	61 North Environmental
BiOp	Biological Opinion
Brice	Brice Environmental Services Corporation
Brice-Turnagain JV	Brice and Turnagain Marine Corporation Joint Venture
DPS	distinct population segment
ESA	Endangered Species Act of 1973, as amended
IHA	Incidental Harassment Authorization
km <sup>2</sup>	square kilometers
LAA	likely to adversely affect
MEC	munitions of explosive concern
MMPA	Marine Mammal Protection Act
mph	miles per hour
NLAA	not likely to adversely affect
NMFS	National Marine Fisheries Service
PSOs	protected species observers
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
USFWS	U.S. Fish and Wildlife Service
VHF	very high-frequency

# 1 INTRODUCTION

The U.S. Air Force (USAF) in coordination with the U.S. Army Corps of Engineers (USACE) engaged in formal consultation with the National Marine Fisheries Service (NMFS) under Section 7 of the Endangered Species Act of 1973, as amended (ESA) to evaluate the impact on threatened and endangered species resulting from the construction of the Long-term Fuel Pier Repairs Project in Alcan Harbor, at Eareckson Air Station, Shemya Island, Alaska. Informal consultation with the U.S. Fish and Wildlife Service (USFWS) was also conducted under Section 7 of the ESA. The consultations concluded that the project “*may affect, and is likely to adversely affect*” (LAA) the Western Distinct Population Segment (DPS) of Steller Sea Lion (*Eumetopias jubatus*), the Western North Pacific DPS and Mexico DPS of humpback whale (*Megaptera novaeangliae*), sperm whales (*Physeter macrocephalus*), and fin whales (*Balaenoptera physalus*). The consultations concluded other threatened or endangered species might be present and that the project “*may affect, but is not likely to adversely affect*” (NLAA) several other ESA-listed marine mammal species. The full list of species considered is presented in Table 1.

The USAF and USACE also applied for an Incidental Harassment Authorization (IHA) under the Marine Mammal Protection Act (MMPA) to authorize the harassment of marine mammals incidental to in-water construction activities (USACE 2023). The IHA (NMFS 2024b) and the Biological Opinion (BiOp; NMFS 2024a) issued by NMFS each contained mitigation measures to reduce the frequency and severity of impacts on protected marine mammal species. The mitigation measures include the requirement to employ protected species observers (PSOs) to monitor shutdown zones and Level B incidental harassment zones for marine mammals during in-water construction, record locations and behaviors of marine mammals, record environmental conditions that affect the visibility of the shutdown and harassment zones, and to implement delays or shutdowns of construction when protected species were sighted within the shutdown zones or reduced visibility prevented monitoring of the shutdown zones. The following sections discuss these and other mitigation measures in more detail.

**Table 1. Threatened and Endangered Species Endemic to Project Area with ESA Determinations**

<i>Marine Mammal Species</i>	<i>Stock/DPS</i>	<i>ESA Status</i>	<i>Impact Determination</i>	<i>Destruction or Adverse Modification of Critical Habitat?</i>
Steller Sea Lion ( <i>Eumetopias jubatus</i> )	Western DPS	Endangered	LAA	No
Humpback Whale ( <i>Megaptera novaeangliae</i> )	Western North Pacific DPS	Endangered	LAA	No
	Mexico DPS	Threatened	LAA	No
	Central America DPS	Endangered	NLAA	No
	Hawaii DPS	Not Listed	n/a	n/a
Sperm Whale ( <i>Physeter macrocephalus</i> )	All	Endangered	LAA	n/a
Fin Whale ( <i>Balaenoptera physalus</i> )	All	Endangered	LAA	n/a
Blue whale ( <i>Balaenoptera musculus</i> )	All	Endangered	NLAA	n/a



<i>Marine Mammal Species</i>	<i>Stock/DPS</i>	<i>ESA Status</i>	<i>Impact Determination</i>	<i>Destruction or Adverse Modification of Critical Habitat?</i>
North Pacific Right Whale ( <i>Eubalaena japonica</i> )	All	Endangered	NLAA	No
Sei Whale ( <i>Balaenoptera borealis</i> )	All	Endangered	NLAA	n/a
Beluga Whale ( <i>Delphinapterus leucas</i> )	Cook Inlet DPS	Endangered	NLAA	No
Killer Whale ( <i>Orcinus orca</i> )	Eastern North Pacific Southern Resident DPS	Endangered	NLAA	No
	Eastern North Pacific Gulf of Alaska Aleutian Islands and Bering Sea	Not Listed	n/a	n/a
Gray Whale ( <i>Eschrichtius robustus</i> )	Western North Pacific DPS	Endangered	NLAA	n/a
Northern Sea Otter ( <i>Enhydra lutris kenyoni</i> )	Southwest DPS	Threatened	NLAA	No
Minke Whale ( <i>Balaenoptera acutorostrata</i> )	Alaska	Not Listed	n/a	n/a
Baird's Beaked Whale ( <i>Berardius bairdii</i> )	Alaska	Not Listed	n/a	n/a
Stejneger's Whale ( <i>Mesoplodon stejnegeri</i> )	Alaska	Not Listed	n/a	n/a
Dall's Porpoise ( <i>Phocoenoides dalli</i> )	Alaska	Not Listed	n/a	n/a
Harbor Porpoise ( <i>Phocoena phocoena</i> )	Bering Sea	Not Listed	n/a	n/a
Northern Fur Seal ( <i>Callorhinus ursinus</i> )	Eastern Pacific	Not Listed	n/a	n/a
Harbor Seal ( <i>Phoca vitulina</i> )	Aleutian Islands	Not Listed	n/a	n/a

The purpose of the project is to construct a new pier around the existing storm-damaged pier in Alcan Harbor on Shemya Island. When completed, the new pier will encapsulate the old structure. An engineered revetment to reduce scouring will be installed by placing 12-ton armor rock at the toe of the wall. Due to unexpected delays, pile installation did not begin until 23 August 2024. Mechanical issues with the pile interlocks prevented considerable progress in 2024.

The contract to conduct the pier repair (W911KB22C0021) was awarded to a joint venture between Brice Environmental Services Corporation (Brice) and Turnagain Marine Construction Corporation (Brice-Turnagain JV). Brice contracted 61 North Environmental (61N) to provide PSOs to conduct monitoring, mitigation, and reporting services.

The PSOs monitored the waters near the project for protected species during the in-water construction activities that occurred intermittently between 23 August and 19 September 2024. During this period, the PSOs:

1. Monitored for approximately 65 hours.

2. Recorded 31 groups of marine mammals present during observations
3. Recorded no Level A takes, two Level B takes of Steller sea lions, and six Level B takes of harbor seals
4. Recorded 66 instances of vibratory installation or removal of 30-inch and 42-inch piles, totaling approximately 11.8 hours of in-water work.
5. Recorded 306 environmental and sighting condition records
6. Implemented three weather delays and one weather shutdown due to a lack of visibility of the shutdown zone, totaling more than 6 hours of work stoppage.

This report summarizes these data and discusses the mitigation and monitoring conducted. A figure of the marine mammal sightings is provided in Appendix A. The data was recorded on paper data sheets and then entered into a *Microsoft Excel™* file. The digital file is submitted electronically with this report as Appendix B.

## **2 CONSTRUCTION CREW AND PROJECT STAFF BRIEFING**

The IHA and BiOp required the construction crew, supervisors, and relevant project staff to be instructed on the mitigation measures, communication protocols, and operational procedures to minimize harm to protected marine mammal species. On 24 July 2024, before the start of in-water work, 61N held a virtual briefing for the Brice-Turnagain JV crew and relevant subcontractors to discuss these topics. In addition, the briefing included a regulatory review (e.g., ESA vs. MMPA mitigation measures), mitigation measures specific to the construction crew (i.e., soft starts, skiff operation), and a review of the shutdown and Level B zones applicable to the planned activities. Identification of the most common marine mammal species was also included.

## **3 PROTECTED SPECIES OBSERVERS**

The IHA and BiOp required PSOs to monitor the shutdown and Level B zones within the project area for protected species and record their locations, group composition, and behaviors; to record the in-water construction activities; call for shutdowns and delays of in-water construction as needed; to record incidental takes of marine mammals; and to record environmental and visibility conditions.

Before the start of in-water construction work, 61N submitted the PSOs' résumés to Brice for approval by NMFS. Each of the PSOs had education and experience exceeding the minimum qualifications. The Lead PSO had several seasons of experience as a Lead PSO on marine construction and offshore survey projects. On 6 August 2024, 61N conducted a web-based training for the PSOs, providing an overview of the project location and details, the construction methods, a regulatory review, a review of the shutdown zones, a review of the IHA and BiOp mitigation measures (and how they differed), a discussion of communication protocols and shutdowns, equipment use, the data collection needs, and marine mammal identification and behavior.

Three PSOs were deployed to Shemya Island on 8 August, where they met the Brice-Turnagain JV construction crew. They monitored from two separate locations during all pile installation or removal activities. Over several morning meetings before the start of work, the PSOs and crew discussed site safety, including safe distances for the clearance of munitions of explosive concern (MEC), communication protocols, pre-activity monitoring, and visibility requirements. The PSOs and construction crew communicated by very high-frequency (VHF) radio. The PSOs also installed two prefabricated hunting blinds as shelters to provide protection during inclement weather (Figure 1).

During all in-water construction activities, the PSOs were on-site to alert the crew when marine mammals were within or approaching the shutdown zones, or when fog or other precipitation prevented full visibility of the shutdown zones. The PSOs documented in-water and near-water construction activities, including the start and end times of vibratory installation and removal of piles. The PSOs entered data onto forms printed on waterproof paper and entered the data into an Excel spreadsheet at the end of the day.

## **4 MONITORING AND MITIGATION METHODS**

The IHA and BiOp required the PSOs to monitor the shutdown zones and adjacent waters before and during all in-water pile installation and removal. The vibratory installation and removal of 30-inch and 42-inch piles were the only in-water activities conducted, with 25-meter and 50-meter shutdown zones, respectively. The Level B harassment zones for these activities were 11,656 and 16,343 meters, respectively (Figure 2).

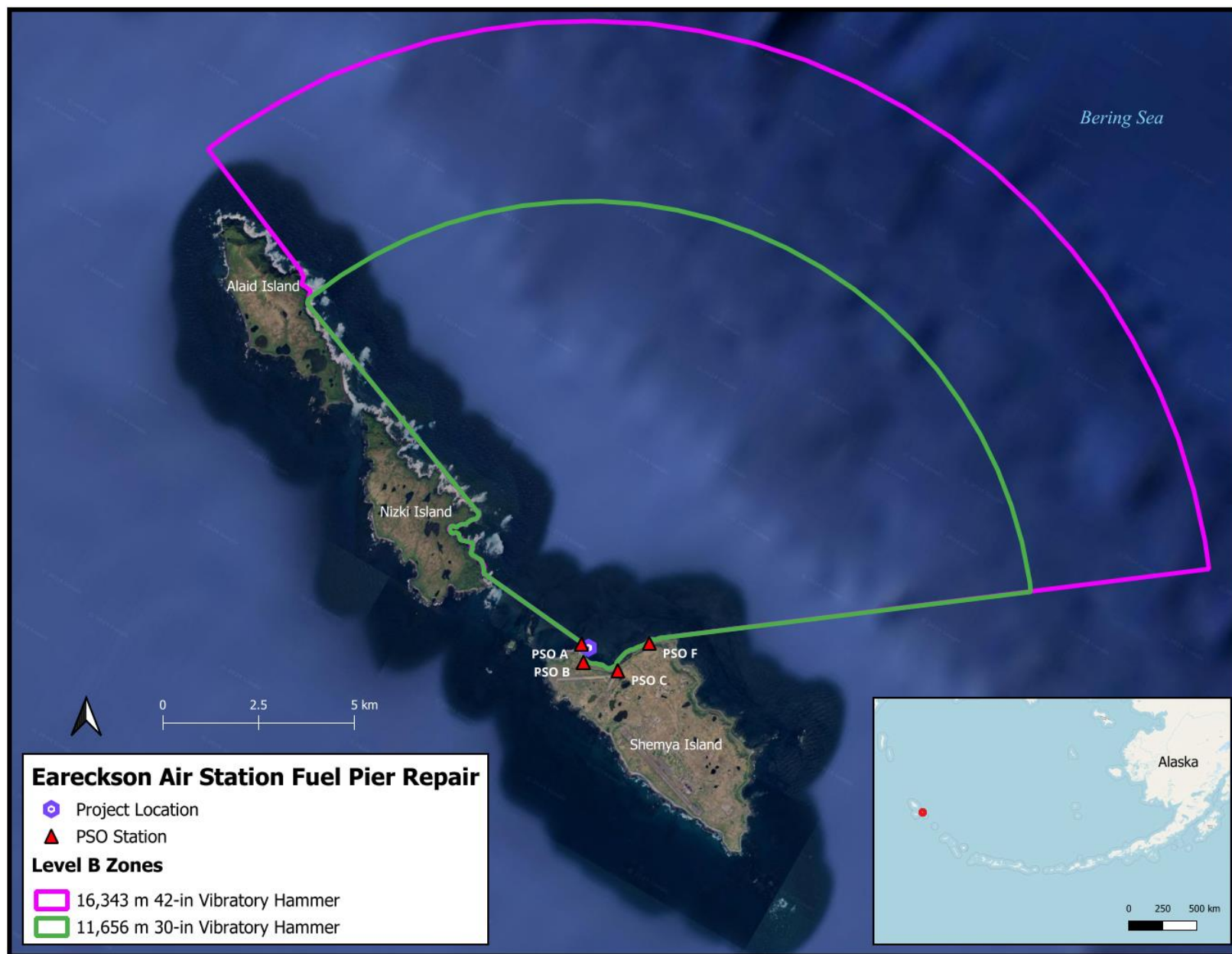
### **4.1 Monitoring Locations**

Two major safety hazards influenced the selection of monitoring locations. Initially, the PSOs were required to remain more than 1,500 feet from pile installation location because of the potential for MEC hazards. The PSOs also could not stand near the face of the COBRA DANE radar system that transmits high-energy radio frequencies. Initially, locations C and F were selected to monitor the shutdown and Level B zones (Figure 1, Figure 2), because they offered an elevated view of Alcan Harbor and were at safe distances from the MEC areas. Station C is more than 1,500 feet from the MEC clearance area, approximately 10 meters above sea level, and well away from the COBRA DANE. Station F, further along the coast to the northeast was also 8 to 10 meters above sea level, outside of the MEC clearance area, and shielded from the face of the COBRA DANE radar by a bluff.

The shelters were installed at Stations C and F (Figure 1), but heavy fog obscured the dock on the first morning of pile installation, and the PSOs could not see the 50-meter shutdown zone. The MEC safety buffer was also amended, allowing the PSOs to move closer to the fuel pier at Stations A and B. The PSOs observed from Stations A and B for the remaining 10 days of observation without shelters (Figure 2).



**Figure 1. PSO Shelter at Station F**



**Figure 2. Project Overview Map**

## 4.2 PSO Equipment

The PSOs were equipped with Fujinon 7X50 FMTRC-SX marine-grade binoculars with a compass and reticles and a 20X-40X spotting scope with a tripod. They were also given a range finder to aid in distance estimation. Range finders require solid objects to reflect off and can be used to gauge distance to landmarks on the shoreline, but they typically do not work when pointed at water. Known distances to nearby landmarks, such as Nizki Island to the west and the northernmost point of Shemya Island, were also used to gauge visibility distances. The PSOs used VHF radios to communicate between monitoring stations and with the construction crew. PSOs also had waterproof data forms, waterproof pens, clipboards, and printed copies of the IHA and BiOp.

## 4.3 Monitoring

The IHA and BiOp limited monitoring duties to no more than 4 hours without a break. PSO watches were approximately 2 to 4 hours long, and the three PSOs rotated between the two stations. One PSO was always on break from monitoring to rest, warm up, and enter data or perform quality control checks of data.

The PSOs scanned the shutdown zone and adjacent waters for protected marine mammals for at least 30 minutes before vibratory pile installation (a.k.a. the “preclearance” period). When conditions prevented visibility of the 50-meter shutdown zone, the construction crew was notified via radio that installation must be delayed. After the shutdown zone was visible for at least 30 minutes, the construction crew was notified that installation may commence.

The PSOs monitored the construction activity and communicated regularly with the construction crew's points of contact. All pre-clearance monitoring, construction activity, and shutdowns or delays resulting from a loss of visibility of the shutdown zone were recorded on the “In-water Activities” section of the data forms and entered into the “Activity” tab of the Excel database. Times were recorded as accurately as possible; however, in-water vibratory installation or removal of piles was often intermittent. As a result, short periods of cessation may not have been captured. The in-water construction activities are discussed in Section 6 and the mitigation measures are discussed further in Section 8.

When marine mammals were sighted, the PSOs estimated the distance to the animal from their location and the distance of the animal from the pile installation location. The species, number in the group, behaviors, and other information were recorded on the marine mammal sighting forms and entered into the “Sighting” tabs of the Excel file. The marine mammal sightings are discussed in Section 5. The monitoring periods are provided in Table 2.

**Table 2. Monitoring Times and Duration**

<i>Date</i>	<i>Start Time</i>	<i>End Time</i>	<i>Monitoring Duration (hh.h)</i>
8/23/2024	08:35	18:19	9.7
8/24/2024	08:16	13:58	5.7
8/29/2024	08:00	13:13	5.2
8/30/2024	13:28	17:00	3.5
8/31/2024	08:15	16:22	8.1
9/1/2024	08:10	10:50	2.7
9/7/2024	09:52	16:46	6.9

<i>Date</i>	<i>Start Time</i>	<i>End Time</i>	<i>Monitoring Duration (hh.h)</i>
9/8/2024	08:20	11:10	2.8
9/8/2024	13:57	16:54	3.0
9/17/2024	08:45	16:33	7.8
9/19/2024	08:43	18:00	9.3
<b>Total:</b>			<b>64.7</b>

## 5 MARINE MAMMAL OBSERVATIONS

During the approximately 65 hours of observation over 11 days, 31 groups of 34 individual marine mammals were documented, including 26 groups of harbor seals, composed of 29 individuals, and five<sup>1</sup> individual Steller sea lions. The PSOs detected harbor seals at a rate of 0.45 per hour of observation and Steller sea lions at a rate of 0.077 per hour of observation.

The minimum detection distance was 30 meters, and the maximum was 300 meters from the PSOs. The PSOs estimated the distances from the pile driving location for each group, including the initial distance, closest approach, and final distance. For harbor seals, the PSO-estimated closest approach distances ranged from 75 meters to 300 meters. The calculated distances from the dock<sup>2</sup>, based on the magnetic bearing and estimated distance recorded by the PSO, ranged from 47 meters to 361. For Steller sea lions, the closest approach distances ranged from 75 meters to 200 meters. The range of all calculated distances was from 89 meters to 283 meters. A summary of the sightings is provided in Table 3. The sighting data is included in the Excel file submitted with this report. The locations of the marine mammal sightings are shown in the Figure in Appendix A.

**Table 3. Marine Mammal Sighting Summary**

<i>Species</i>	<i>Groups Observed</i>	<i>No. Individuals</i>	<i>Average Group Size (mean/median)</i>	<i>No. Individuals per Hour of Observation</i>	<i>No. Groups per Observation Day*</i>
<i>Harbor Seal</i>	26	29	1.1/1	0.45	2.4
<i>Steller Sea Lion</i>	5	5	1/1	0.077	0.45

**Note:**\* The observation duration averaged 5.9 hours over 11 observation days.

<sup>1</sup> The Steller sea lion in Group #10 was sighted by the other PSO at the adjacent station under Group #11, and is not considered a separate group.

<sup>2</sup> The center of the dock at 52.728606°, 174.065718° was used to calculate distances, but the actual piles may have been up to 50 meters from the center.



## 5.1 Behaviors

The harbor seals and Steller sea lions sighted during the project exhibited various behaviors, including traveling, looking, surface active (i.e., splashing), feeding, diving, and sinking. Five of the 26 groups of harbor seals and one Steller sea lion were sighted concurrent with in-water pile installation or removal, however, the PSOs reported no explicit reactions to the activity. Additionally, the primary, secondary, and tertiary behaviors reported for sightings during pile driving occurred in similar ratios to sightings that were not during pile driving. A summary of marine mammal behaviors from all sightings is provided in Table 4. Each sighting that occurred during pile driving was also reported as a Level B take and is discussed further in the next section.

**Table 4. Marine Mammal Behaviors**

Behaviors		Harbor Seal				Steller Sea Lion			
		Not During Pile Driving		During Pile Driving		Not During Pile Driving		During Pile Driving	
		No. of Groups	% of Groups	No. of Groups	% of Groups	No. of Groups*	% of Groups*	No. of Groups	% of Groups
Primary Behavior	Look	16	76%	4	80%	0	0%	0	0%
	Surface Active	1	5%	1	20%	1	20%	0	0%
	Travel	4	19%	0	0%	4	80%	1	100%
Secondary Behavior	Dive	2	10%	0	0%	0	0%	1	100%
	Feeding	0	0%	0	0%	1	20%	0	0%
	Look	4	19%	1	20%	1	20%	0	0%
	Sink	15	71%	4	80%	0	0%	0	0%
	Surface Active	0	0%	0	0%	2	40%	0	0%
	Travel	0	0%	0	0%	1	20%	0	0%
Tertiary Behavior	Dive	0	0%	0	0%	2	40%	0	0%
	Feeding	1	5%	1	20%	0	0%	0	0%
	Sink	2	10%	0	0%	0	0%	0	0%
	None	18	86%	4	80%	3	60%	1	100%

**Note:** \* The Steller sea lion in Group #10/#11 is considered the same group/animal for reporting of total numbers. However, because a separate sighting form was filled out and entered into the database as a separate group, the behaviors for both entries appear here and within the electronic data submittal.

## 5.2 Level B Takes

Six harbor seals<sup>3</sup> and two Steller sea lions were observed within the Level B zone during (or just prior to<sup>4</sup>) in-water vibratory pile installation or removal. None of the marine mammals observed within the Level B zones visibly reacted to the construction noise. A summary of the sightings, behaviors, and narrative of each incident is provided in Table 5.

<sup>3</sup> Harbor seal Group #19 had two harbor seals in the group, but only one was sighted within the Level B zone during active in-water vibratory pile installation or removal.

<sup>4</sup> Steller sea lion Group #3 was last seen 2 minutes before in-water vibratory pile driving occurred, but given the location of the sighting, it was believed to have still been within the Level B zone during the pile driving installation.



**Table 5. Summary of Level B Marine Mammal Exposures**

<i>Group ID</i>	<i>Sighting Date</i>	<i>Species</i>	<i>No. in Group</i>	<i>No. Level B Takes</i>	<i>Behavior 1</i>	<i>Behavior 2</i>	<i>Behavior 3</i>	<i>Closest Approach (m)</i>	<i>Sighting Notes</i>
3	23-Aug	Stellar Sea Lion	1	1	Travel	Look	None	160	At 1401 local time, a stellar sea lion was sighted at 12 degrees bearing, 200m away. The animal was last seen at 1402 at 33 degree bearing, 160m away from observer station and traveling SE. Vibratory hammer started two minutes after last sighting and lasted 9 minutes. The animal was on a path towards the construction site when sighted.
9	30-Aug	Harbor Seal	1	1	Look	Sink	None	140	A Harbor Seal was sighted in front of station A at 1603. Vibratory hammer operated on a 42" pile from 1604-1612. The level B harassment zone was 16,343 meters. The Harbor Seal was sighted again at 1605, 140 meters from sound source and 16,203 meters inside level B harassment zone. At 1607 the Harbor Seal was sighted again, 160 meters from sound source and 16,183 meters inside level B harassment zone.
19	8-Sep	Harbor Seal	2	1	Look	Sink	None	75	Harbor Seal sighted in front of the station repeatedly moving back and forth just offshore (beginning at 0827). The vibratory hammer was in use from 0851 to 0911 while pulling a 42" piling and a harbor seal was sighted two times during that span. (The vibratory hammer was not used again until 1504 later that day). At 1011 a second HS was sighted looking concurrently with the original sighting and the sighting was updated to two animals. This was a potential Level B Harassment take. The single HS was continuously sighted 200 meters from the sound source inside the 16,343-meter level B zone from 0827 through 1108 (but the hammer was only operating from 0851 to 0911).
21	8-Sep	Harbor Seal	1	1	Look	Sink	None	120	Harbor Seal was sighted continuously from 1439 through 1523 inside the 16,343-meter level B harassment zone within 200 meters of the sound source. The vibratory hammer was in use pulling a 42" piling from 1504 through 1544. The seal was sighted 10 times inside the zone during that span.
24	17-Sep	Stellar Sea Lion	1	1	Travel	Dive	None	150	(The sea lion was) sighted near a group of exposed rocks. Circling and diving. There was one potential level B exposure of a Stellar Sea Lion. The construction crew was using a vibratory hammer on a 42" piling today from 1032 until 1054. The level B harassment zone is 16,343 meters for this activity. A Stellar Sea Lion was observed 7 times from 1039 to 1049 approximately 200 meters from the sound source. These sightings placed the Stellar Sea Lion approximately 16,143 meters inside of the level B harassment zone during the vibratory activity.

**Table 5. Summary of Level B Marine Mammal Exposures (continued)**

<i>Group ID</i>	<i>Sighting Date</i>	<i>Species</i>	<i>No. in Group</i>	<i>No. Level B Takes</i>	<i>Behavior 1</i>	<i>Behavior 2</i>	<i>Behavior 3</i>	<i>Closest Approach (m)</i>	<i>Sighting Notes</i>
29	19-Sep	Harbor Seal	2	2	Look	Sink	Feeding	75	Harbor Seal initially sighted at 1004. Sighted three times between 1120-1155 while construction crew was operating vibratory hammer on a 30" pile. The Level B Harassment zone is 11,656 meters, the seal was approximately 200 meters from the sound source or 11,456 meters inside the level B zone. This is a potential Level B take. A second seal was sighted simultaneously on the surface with the first seal and MM group was updated to 2 animals at 1333. The construction crew was operating a vibratory hammer on a 30" piling from 1345-1417 and 1422-1430 and a seal was sighted four times approximately 200 meters from the sound source. This is a second potential level B take.
32	19-Sep	Harbor Seal	1	1	Surface Active	Look	None	300	Harbor Seal sighted on time at 1627. The construction crew was using a vibratory hammer on a 30" piling from 1610-1646. The Level B Harassment zone for this activity is 11,656 meters. The seal was approximately 300 meters from the sound source or 11,356 meters inside the level B harassment zone. This is a potential level B take.

The IHA issued for the project authorized the incidental take of 99 Steller sea lions and 109 harbor seals by Level B harassment. No other marine mammal species were sighted. No Level A takes of any marine mammal were documented, and no marine mammals were sighted within the 50-meter or 25-meter shutdown zones for vibratory installation or removal of a 42-inch or 30-inch pile, respectively.

The Level B zones for the vibratory installation or removal of 42-inch and 30-inch piles are 16,343 meters and 11,656 meters, respectively. The greatest visibility distance<sup>5</sup> the PSOs recorded was 2,600 meters, which equates to approximately 8.7 square kilometers (km<sup>2</sup>) of the Level B zones. The 11,656-meter Level B zone is approximately 147 km<sup>2</sup>, and the 16,343-meter Level B zone is approximately 284 km<sup>2</sup> when measuring the areas not blocked by points of land. Therefore, up to 97 percent (%) of the 16,343-meter Level B zone and 94% of the 11,656-meter Level B zone could not be monitored given the constraints of the project location.

Phocids and otariids typically have a higher affinity for nearshore areas than offshore. Therefore, the density observed near Alcan Harbor may overestimate the density within the remaining Level B zone. Regardless, it is possible, and even likely, that some harbor seals, sea lions, and potentially other marine mammals were within the Level B zone but were not documented.

**Table 6. Number of Level B and Level A Takes Authorized and Remaining**

<i>Species</i>	<i>No. of Level B Takes Authorized</i>	<i>No. of Level B Takes Reported</i>	<i>No. of Level B Takes Remaining</i>	<i>No. of Level A Takes Authorized</i>	<i>No. of Level A Takes Reported</i>	<i>No. of Level A Takes Remaining</i>
<i>Fin Whale</i>	18	0	18	3	0	3
<i>Humpback Whale</i>	125	0	125	29	0	29
<i>Minke Whale</i>	5	0	5	3	0	3
<i>Sperm Whale</i>	40	0	40	0	0	0
<i>Baird's Beaked Whale</i>	10	0	10	0	0	0
<i>Stejneger's Whale</i>	8	0	8	0	0	0
<i>Killer Whale</i>	176	0	176	0	0	0
<i>Dall's Porpoise</i>	26	0	26	13	0	13
<i>Harbor Porpoise</i>	10	0	10	5	0	5

<sup>5</sup> The estimated distance at which a marine mammal could be sighted given the precipitation and sea state conditions

<i>Species</i>	<i>No. of Level B Takes Authorized</i>	<i>No. of Level B Takes Reported</i>	<i>No. of Level B Takes Remaining</i>	<i>No. of Level A Takes Authorized</i>	<i>No. of Level A Takes Reported</i>	<i>No. of Level A Takes Remaining</i>
<i>Northern Fur Seal</i>	5	0	5	0	0	0
<i>Steller Sea Lion</i>	99	2	97	0	0	0
<i>Harbor Seal</i>	109	6	103	45	0	45

Sighting data, including the time of first and last sighting, sighting duration, behavior, group composition, initial, closest, and final distances from the construction work, concurrence with pile installation, and other data, are provided in the Excel file submitted with this report.

### 5.3 Dead Marine Mammal

On 18 August, before in-water construction had begun, the personnel on the island alerted the PSOs that a dead whale had washed ashore. The whale was identified as a Cuvier's beaked whale and was relayed to the Alaska Marine Mammal Stranding Hotline. The PSOs measured and photographed the whale and reported it to NMFS.

## 6 IN-WATER OPERATIONS

During construction, the PSOs recorded 66 instances of in-water vibratory installation or removal of piles, totaling 11.8 hours of activity. The construction crew drove and removed five 42-inch piles, drove six 30-inch piles, and removed two 30-inch piles, leaving four 30-inch piles installed. A summary of the vibratory installation and removal events is provided in Table 7. The details of each event are provided in the Excel file submitted with this report.

**Table 7. Summary of In-Water Vibratory Pile Installation and Removal**

<b><i>Date</i></b>	<b><i>30-inch Pile</i></b>		<b><i>42-inch Pile</i></b>		<b><i>Daily Totals</i></b>	
	<b><i>No. Instances</i></b>	<b><i>Duration (hrs)</i></b>	<b><i>No. Instances</i></b>	<b><i>Duration (hrs)</i></b>	<b><i>No. Instances</i></b>	<b><i>Duration (hrs)</i></b>
<i>8/23/2024</i>	-	-	15	1.5	<b>15</b>	<b>1.5</b>
<i>8/24/2024</i>	-	-	6	0.6	<b>6</b>	<b>0.6</b>
<i>8/29/2024</i>	5	1.2	-	-	<b>5</b>	<b>1.2</b>
<i>8/30/2024</i>	-	-	5	0.5	<b>5</b>	<b>0.5</b>
<i>8/31/2024</i>	-	-	9	1.6	<b>9</b>	<b>1.6</b>
<i>9/1/2024</i>	-	-	4	0.5	<b>4</b>	<b>0.5</b>
<i>9/7/2024</i>	-	-	4	0.6	<b>4</b>	<b>0.6</b>
<i>9/8/2024</i>	-	-	5	1.5	<b>5</b>	<b>1.5</b>
<i>9/17/2024</i>	-	-	4	1.0	<b>4</b>	<b>1.0</b>
<i>9/19/2024</i>	8	2.8	1	0.2	<b>9</b>	<b>3.0</b>
<b><i>Totals:</i></b>	<b>13</b>	<b>4.0</b>	<b>53</b>	<b>7.9</b>	<b>66</b>	<b>11.8</b>

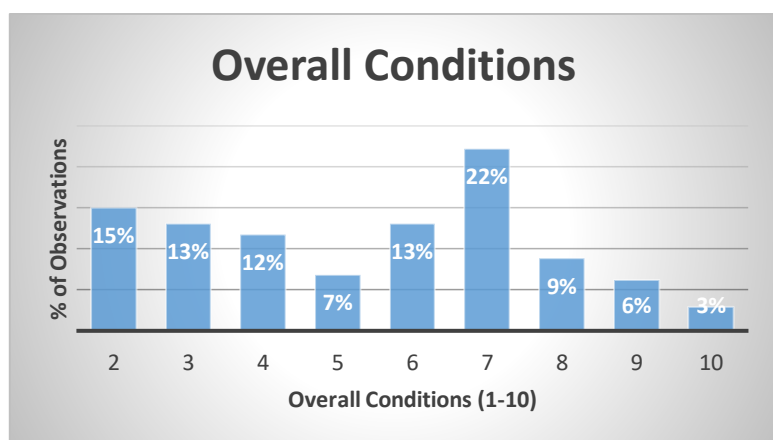
## 7 ENVIRONMENTAL AND OBSERVATION CONDITIONS

The PSOs recorded environmental observations every half hour or more often if conditions changed rapidly. During the 11 days of monitoring, 306 observations were recorded from two locations. The environmental attributes recorded include:

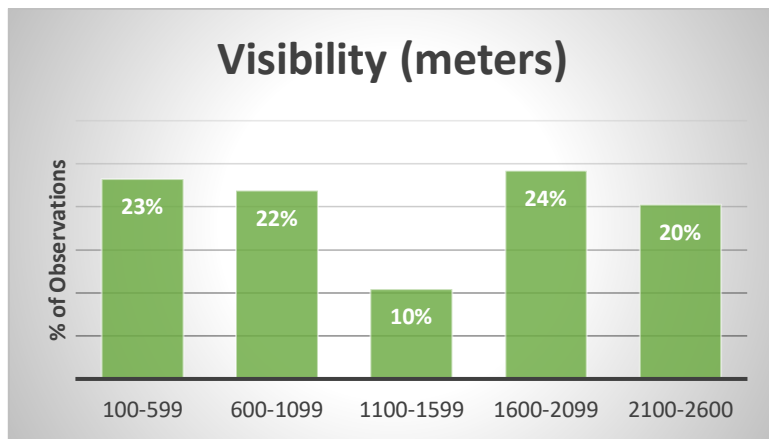
- general observation conditions (a scale of 1 to 10; 1 = poor, 5 = moderate, 10 = excellent)
- weather conditions (overcast, sunny, raining, etc.)
- cloud cover (%)
- light conditions (light, dark, twilight)
- wind speed and direction
- sea state (Beaufort scale)
- glare
- visibility (i.e., the distance at which a marine mammal could be seen and identified).

Overall, observation conditions were moderate to poor during the project. On a scale of 1 to 10, the average conditions were 5.4, but there were two “modes” of observation conditions. One mode was of relatively poor conditions (i.e., 2 through 4) and the second mode was moderate to good visibility conditions (i.e., 6 through 8; see Figure 3). Visibility distances ranged from 100 to 2,600 meters, averaging 1,368 meters. Similar to the overall conditions, there were two modes in the visibility data, one high and one low (Figure 4). Despite always having at least 100 meters of visibility, the PSOs could not observe near the pile installation location due to the potential presence of MEC, so the 25-meter and 50-meter shutdown zones were not always visible.

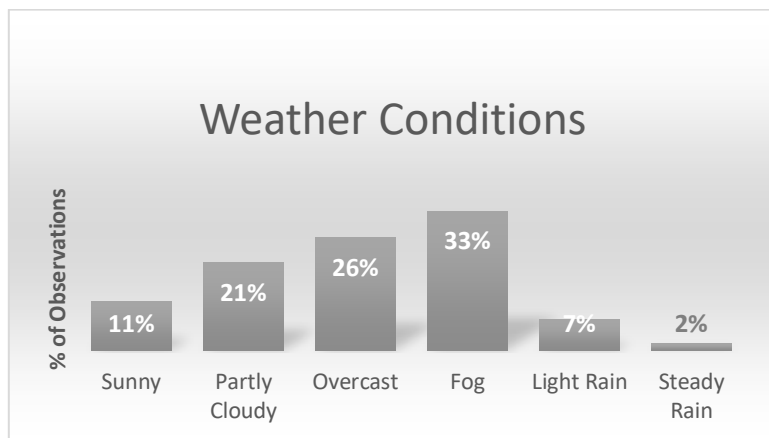
The weather was foggy 33% of the time, overcast or raining 35% of the time, and sunny or partly cloudy 32% of the time (Figure 5). The Beaufort sea state was recorded as 1 or 2 for approximately 93% of the time and was 3 or 4 for approximately 7% of the time (Figure 6). The wind speed ranged between 0 and 25 miles per hour (mph), with an average of approximately nine mph during observations. High winds and other operational issues prevented monitoring on some days, so these records do not represent typical conditions in the area in August and September. All environmental and observation conditions are detailed in the Excel file submitted with this report.



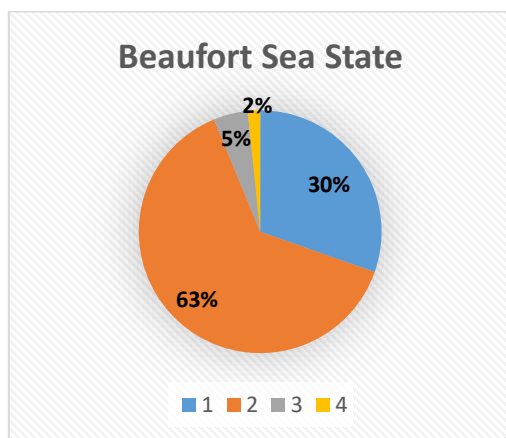
**Figure 3. Overall Conditions**



**Figure 4. Visibility**



**Figure 5. Weather Conditions**



**Figure 6. Beaufort Sea State**

## 8 MITIGATION MEASURE SUMMARY

The IHA and BiOp included several mitigation measures to minimize the impact of the construction on protected marine mammal species. The primary means of protecting marine mammals near the in-water construction activities

was the requirement to cease or delay work if marine mammals were sighted within the applicable shutdown zones. Additionally, the shutdown or delay of work was required by the BiOp if the applicable shutdown zones could not be monitored due to fog, rain, or other environmental conditions.

The only in-water construction activity conducted in 2024 was the vibratory installation or removal of 30-inch or 42-inch piles, with 25-meter and 50-meter shutdown zones, respectively. No marine mammals were sighted within these shutdown zones immediately before or during these activities, so no shutdowns or delays resulted from the presence of marine mammals. However, the shutdown zones were not always visible to the observers because of heavy fog and the requirement to remain 150 to 200 meters or more away from the installation of piles because of the potential presence of MEC.

The limited visibility events resulted in three delays of in-water work totaling 5 hours and 35 minutes of lost work time and one shutdown resulting in 33 minutes of lost work time. The shutdown was called because vibratory installation was occurring when fog obscured the 50-meter shutdown zone for three minutes. After losing visibility, the BiOP requires 30 minutes of observation to ensure the 50-meter zone remains clear of marine mammals. These events are summarized in Table 8.

**Table 8. Weather Delays and Shutdowns**

<i>Date</i>	<i>Start Time</i>	<i>End Time</i>	<i>Event</i>	<i>Duration (hh:mm)</i>
8/23/2024	09:05	10:58	Weather delay	1:53
8/31/2024	08:45	11:42	Weather delay	2:57
8/31/2024	12:54	13:27	Weather shutdown	0:33
9/19/2024	14:31	15:16	Weather delay	0:45
<i>Total Duration:</i>				6:08

The following additional mitigation measures were employed for this project:

- On 24 July 2024, before the start of in-water work, 61N held a virtual briefing for the Brice-Turnagain JV crew to discuss safety, PSO locations, the shutdown zone, and communication protocols for pre-clearance, delays, and shutdowns.
- On 6 August 2024, 61N conducted a web-based training for the PSOs, providing an overview of the project location and details, the construction methods, a regulatory review, a review of the shutdown zones, a review of the IHA and BiOp mitigation measures, a discussion of communication protocols and shutdowns, equipment use, the data collection needs, and marine mammal identification and behavior.
- Marine mammal monitoring occurred for at least 30 minutes before each in-water work period started.
- In-water activities were only conducted during daylight hours when the Beaufort Sea State was a 4 or less, and when the entire shutdown zone was visible.
- Two PSOs were stationed to monitor the 25-meter or 50-meter shutdown zones and the maximum extent of the applicable Level B zones possible during all pile installation and removal.
- The PSOs established communication with the construction crew and had the authority to order appropriate mitigation responses to avoid takes of listed species.
- The PSOs did not observe for more than four hours without a break and did not exceed 12 hours of monitoring in a 24-hour period.
- The PSOs were equipped with marine-grade 7X50 Fujinon™ binoculars with reticle and compass, range finders, radios, and waterproof data forms, to monitor the shutdown zone effectively.

- The PSOs were independent and did not have additional duties. The PSO's résumés were submitted to NMFS before the start of the program.



## 9 REFERENCES

- NMFS (National Marine Fisheries Service). 2024a (1 March). *Biological Opinion and Conference Opinion for Eareckson Air Station Long-term Fuel Pier Repairs, Shemya Island, Alaska*. NMFS Consultation Number AKRO-2023-02892.
- NMFS. 2024b (5 March). *Incidental Harassment Authorization for the Eareckson Air Station Fuel Pier Repair on Shemya Island, Alaska*. Issued by Catherine Gaelle Marzin for Kimberly Damon-Randall, Director, Office of Protected Resources, National Marine Fisheries Service
- USACE (U.S. Army Corps of Engineers). 2023 (May). *Request for an Incidental Harassment Authorization under the Marine Mammal Protection Act for Eareckson Air Station Long-term Fuel Pier Repairs, Shemya Island, Alaska*.

## **Appendix A– Marine Mammal Sighting Figure**

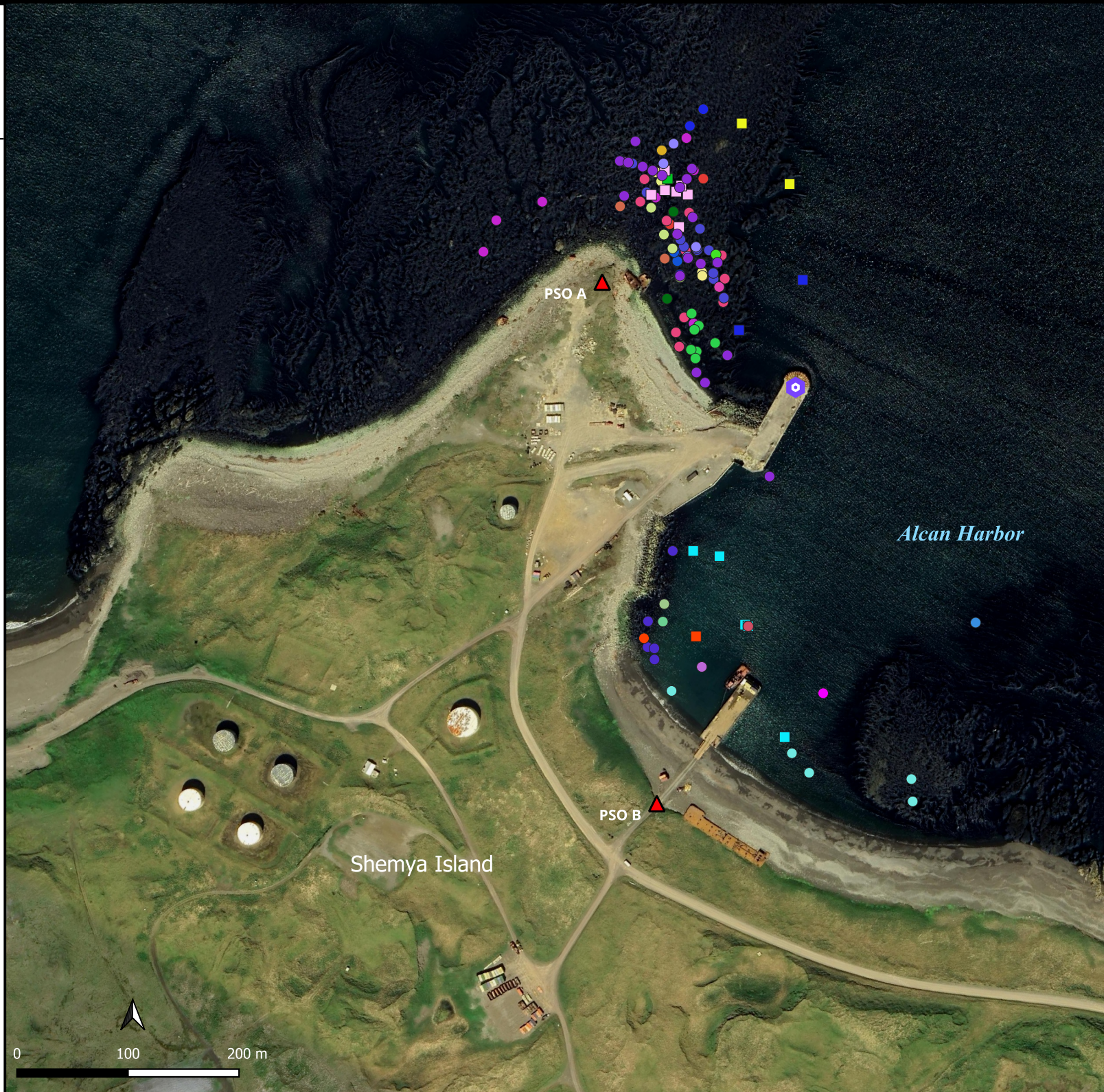


# 2024 Eareckson Air Station Fuel Pier Repair Marine Mammal Sightings 23 August - 19 September

-  Project Location
-  PSO Station

## Marine Mammal Groups

-  Group 1 Harbor Seal
-  Group 2 Harbor Seal
-  Group 3 Steller Sea Lion
-  Group 4 Harbor Seal
-  Group 5 Harbor Seal
-  Group 6 Harbor Seal
-  Group 7 Harbor Seal
-  Group 8 Harbor Seal
-  Group 9 Harbor Seal
-  Group 10 Steller Sea Lion
-  Group 11 Steller Sea Lion
-  Group 12 Harbor Seal
-  Group 13 Steller Sea Lion
-  Group 14 Harbor Seal
-  Group 15 Harbor Seal
-  Group 16 Harbor Seal
-  Group 17 Harbor Seal
-  Group 18 Harbor Seal
-  Group 19 Harbor Seal
-  Group 20 Harbor Seal
-  Group 21 Harbor Seal
-  Group 22 Harbor Seal
-  Group 23 Harbor Seal
-  Group 24 Steller Sea Lion
-  Group 25 Steller Sea Lion
-  Group 26 Harbor Seal
-  Group 27 Harbor Seal
-  Group 28 Harbor Seal
-  Group 29 Harbor Seal
-  Group 30 Harbor Seal
-  Group 31 Harbor Seal
-  Group 32 Harbor Seal





## **Appendix B – PSO Data (Electronic Deliverable)**