

MEMORANDUM

To: Craig Cockrell
From: Taylor Meyers, Margaret Schwertner, Moffatt & Nichol
Cc: Larry Scholten, Port of Bellingham
Date: September 20, 2024
Subject: Incidental Harassment Authorization Renewal Request - Bellingham Shipping Terminal Rehabilitation

1 Introduction

This memorandum has been prepared to request a renewal of the Incidental Harassment Authorization (IHA) approved by the National Oceanic and Atmospheric Administration (NOAA) for the Bellingham Shipping Terminal Rehabilitation Project (NOAA 2023). Ongoing coordination between the Port and local tribes to better avoid tribal fishing periods have delayed pile driving activities to begin mid-September. The existing IHA was issued on November 6, 2023 and will expire on November 6, 2024. A one year extension is requested. At the time of this IHA renewal request, pile driving activities, with the exception of some pile removal activities, have not occurred.

2 Description of Specified Activity Under Renewal

The Port of Bellingham (Port) is completing repairs and maintenance to rehabilitate the Bellingham Shipping Terminal (BST) in conjunction with U.S. Department of Transportation (USDOT) Maritime Administration (MARAD), who awarded the Port grant funding. The BST is a full-service marine terminal specializing in break bulk and clean bulk cargos. BST has 1,300 feet (ft.) of wharf length adjacent to a 1,800 ft. berthing area, with over 85,000 square feet (sq. ft.) of warehousing on eleven (11) acres of adjacent upland.

The project involves structural repairs to key deteriorated and damaged components along the Central and South Terminals, as well as adjacent upland concrete/paving and utility repairs to the BST.

The approved IHA allowed for the following in-water pile-related activities:

- Up to 36, 24-inch diameter steel pipe piles would be removed.
- Up to 56, 24-inch diameter steel pipe piles could be installed waterward of the existing bulkhead wall.
- Up to 15, 14 to 16-inch diameter ACZA-treated timber fender piles would be removed.
- Up to 13 steel H-piles (about 16-inches in diameter) would be installed.
- Up to 2, 18-20-inch diameter creosote-treated piles could be removed.
- Up to 2, 18-20-inch diameter ACZA treated wrapped piles or steel piles could be installed.

The proposed work for this IHA renewal is a subset of the work that was previously authorized.

3 Dates, Duration, and Specified Geographic Area

The Project occurs in Bellingham Washington. The project site is bordered by Port and heavy industrial properties, berths and industry, and Bellingham Bay. The Burlington Northern Santa Fe (BNSF) railway mainline that runs between Vancouver, British Columbia, Canada and Seattle, Washington with connections to other railways in between and beyond is located adjacent to the BST yard entrance (Figure 1). The BST is located near the Interstate 5 (I-5) corridor with good access to and from interstate, local, and regional industries. Pile removal and installation activities are anticipated to occur during the in-water work window (August 1 through February 15). Pile driving activities will continue into February of 2025 and may continue during the next in-water work window (anticipated to open on August 1, 2025). Pile removal and installation will occur during daylight hours.

4 Monitoring and Shutdown Zones

The approved IHA used a daily vibratory drive time of 90 minutes to calculate harassment zones. This 90-minute drive time was based on the best available information at the time and assumed extensive setup, pile splicing, and downtime. Based on further coordination with the contractor, it has been determined that 360 minutes of daily vibratory drive time will be feasible. Therefore, the Level A harassment zones and associated exclusion zones have been updated for vibratory driving. Table 1 summarizes the harassment zones and shutdown zones with the previously assumed 90-minute vibratory drive time. Table 2 summarizes the harassment zones and shutdown zones with the updated 360-minute vibratory drive time. Appendix A of this report provides the calculations for the proposed harassment zones under this updated 360-minute vibratory drive time scenario.

No changes are proposed to the daily duration of vibratory removal or impact driving approved in the original IHA. The approved IHA also used a daily vibratory removal time of 180 minutes and 1,725 blows to calculate harassment zones.

Table 1. Shutdown and Harassment Zones with 90 Minute Vibratory Drive Time

Pile Type and Method	Minimum Shutdown Zone (m)			Level A Harassment Zone (m)			Level B Harassment Zone (m)
	High Frequency Cetaceans	Phocid	Otariid	High Frequency Cetaceans	Phocid	Otariid	All Marine Mammals
Vibratory Installation (90 minutes)	30	20	10	28.5	11.7	0.8	11,659



Table 2. Proposed Shutdown and Harassment Zones with 360 Minute Vibratory Drive Time

Pile Type and Method	Minimum Shutdown Zone (m)			Level A Harassment Zone (m)			Level B Harassment Zone (m)
	High Frequency Cetaceans	Phocid	Otariid	High Frequency Cetaceans	Phocid	Otariid	All Marine Mammals
Vibratory Installation (360 minutes)	75	30	10	71.8	29.5	2.1	11,659

5 Take Estimates

Take authorized in the approved IHA is summarized in Table 3. This renewal does not request a change in the number of Level A or Level B takes authorized in the approved IHA for this project. As discussed in Section 4 of this report, exclusion zones have been expanded to account for increases to the Level A harassment zone that have resulted from an increased daily vibratory drive time.

Table 3. Authorized Incidental Take

Species	Scientific Name	Level A Harassment	Level B Harassment
Harbor Seal	<i>Phoca vitulina</i>	264	2,029
California Sea Lion	<i>Zalophus californianus</i>	0	87
Steller Sea Lion	<i>Eumetopias jubatus</i>	0	87
Harbor Porpoises	<i>Phocoena phocoena</i>	0	261



Appendix A- Level A Harassment Zone Calculations – 360 Minute Vibratory Drive Time

A.1: Vibratory Pile Driving (STATIONARY SOURCE: Non-Impulsive, Continuous)

VERSION 2.2: 2020

KEY

	Action Proponent Provided Information
	NMFS Provided Information (Technical Guidance)
	Resultant Isopleth

STEP 1: GENERAL PROJECT INFORMATION

PROJECT TITLE	BST Rehabilitation
PROJECT/SOURCE INFORMATION	Vibratory Pile Drive 24-inch Steel Pipe Piles 360 minute limit per day WSDOT BA Manual, page 7.42

Please include any assumptions

PROJECT CONTACT	Taylor Meyers
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STEP 2: WEIGHTING FACTOR ADJUSTMENT

Weighting Factor Adjustment (kHz)*	2.5	
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Specify if relying on source-specific WFA, alternative weighting/dB adjustment, or if using default value

* Broadband: 95% frequency contour percentile (kHz) OR Narrowband: frequency (kHz); For appropriate default WFA: See INTRODUCTION tab

† If a user relies on alternative weighting/dB adjustment rather than relying upon the WFA (source-specific or default), they may override the Adjustment (dB) (row 48), and enter the new value directly. However, they must provide additional support and documentation supporting this modification.

STEP 3: SOURCE-SPECIFIC INFORMATION

Sound Pressure Level (L_{rms}), specified at "x" meters (Cell B30)	166
Number of piles within 24-h period	1
Duration to drive a single pile (minutes)	360
Duration of Sound Production within 24-h period (seconds)	21600
10 Log (duration of sound production)	43.34
Transmission loss coefficient	15
Distance of sound pressure level (L_{rms}) measurement (meters)	10

NOTE: The User Spreadsheet tool provides a means to estimate distances associated with the Technical Guidance's PTS onset thresholds. Mitigation and monitoring requirements associated with a Marine Mammal Protection Act (MMPA) authorization or an

Endangered Species Act (ESA) consultation or permit are independent management decisions made in the context of the proposed activity and comprehensive effects analysis, and are beyond the scope of the Technical Guidance and the User Spreadsheet tool.

RESULTANT ISOPLETHS

Hearing Group	Low-Frequency Cetaceans	Mid-Frequency Cetaceans	High-Frequency Cetaceans	Phocid Pinnipeds	Otarid Pinnipeds
SEL _{cum} Threshold	199	198	173	201	219
PTS isopleth to threshold (meters)	48.6	4.3	71.8	29.5	2.1

WEIGHTING FUNCTION CALCULATIONS

Weighting Function Parameters	Low-Frequency Cetaceans	Mid-Frequency Cetaceans	High-Frequency Cetaceans	Phocid Pinnipeds	Otarid Pinnipeds
a	1	1.6	1.8	1	2
b	2	2	2	2	2
f ₁	0.2	8.8	12	1.9	0.94
f ₂	19	110	140	30	25
C	0.13	1.2	1.36	0.75	0.64
Adjustment (-dB)†	-0.05	-16.83	-23.50	-1.29	-0.60

NOTE: If user decided to override these Adjustment values, they need to make sure to download another copy to ensure the built-in calculations function properly.

$$W(f) = C + 10 \log_{10} \left\{ \frac{(f/f_1)^{2a}}{[1 + (f/f_1)^2]^a [1 + (f/f_2)^2]^b} \right\}$$

**Bellingham Shipping Terminal
Marine Infrastructure Maintenance & Rehabilitation**

Bellingham Bay, Bellingham, WA

Marine Mammal Monitoring

**DAILY MONITORING REPORT FOR:
Wednesday, 21 August 2024**

**Reference Project #s:
NMFS # WCRO-2022-00335
USFWS # 2022-0013489
USACE # NWS-2022-141, NWS-2022-147**

Compiled by Madalyn Walker



MARINE SURVEYS & ASSESSMENTS

**2601 Washington Street
Port Townsend WA 98368
360-385-4073**

info@msaenvironmental.com



Activity Overview

Today's monitoring activities aimed to protect marine mammals and ensure compliance with permit requirements to avoid serious injury or behavioral disturbance to marine mammals within the Bellingham Shipping Terminal (BST) infrastructure maintenance and repair action area. The protected species observers (PSOs), comprising scientists from Marine Surveys & Assessments (MSA), monitored the waters of Bellingham Bay at two locations (Figure 1) surrounding the project area before, during, and after construction activities occurred.

Marine mammal monitoring started at 06:15, and after 30 minutes of continuous monitoring in which no marine mammals were observed within the monitoring and exclusion zones, American Construction was informed that they could start work for the day. Monitoring continued off and on throughout the day as American Construction used a crane-mounted vibratory hammer to remove 12-inch creosote piles until 14:15. American Construction stayed onsite until 15:00. Approximately 38 minutes of vibratory pile removal occurred during this monitoring event with eight (8) 12-inch creosote piles removed.

To avoid Level A Take during vibratory pile removal, a 40-meter shutdown zone was utilized for harbor seals, a 50-meter shutdown zone for harbor porpoises, and a 20-meter shutdown zone for sea lions (Attachment A, Figure 1). Any of the above species observed within the 11,660-meter monitoring zone during active pile removal was considered a Level B take (Attachment A, Figure 2). An 11,660-meter exclusion zone was utilized to monitor for ESA-listed marine mammals to avoid Level A and Level B Take on these species (Attachment A, Figure 5).

No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded.

No distressed or dying fish were observed during this monitoring event.

Monitoring Crew

Last Name	First Name	Affiliation	Role
DeCaterina	Bryan	MSA	Lead PSO
Walker	Madalyn	MSA	PSO

Monitoring Methods

Prior to work starting for the day, PSOs communicate with the contractor, American Construction regarding the pile diameter and type of construction (i.e., impact hammer pile installation, vibratory pile installation, or vibratory pile removal) work that will occur. This informs the PSOs of the exclusion (i.e., shutdown) zone that will be used for the day and determines where the PSOs will be stationed for monitoring. Monitoring and exclusion zones for each species based on construction activity can be found in Attachment A.



The PSOs arrive onsite at the pre-determined monitoring stations and begin a 30-minute continuous monitoring cycle. If no species of concern enter or come near to their respective exclusion zones, then the onsite construction supervisor is informed that work may begin for the day. The PSOs monitor continuously during all pile installation and removal. Monitoring continues for 15 minutes after work has ceased to ensure no species of concern were within the Level A and Level B monitoring zones. If marine mammals enter or have been observed near the exclusion zone during or within 30 minutes of starting pile driving, the lead PSO will notify the onsite construction supervisor, and work must either stop or not begin until the animal(s) have moved outside of the respective zone.

Equipment utilized by PSOs during monitoring included the following: binoculars, spotting scopes, range finders, GPS units, compasses, phones, Whale Alert app, and data sheets to record when and where species of concern were observed.

Monitoring Locations

Two PSOs were stationed at pre-determined locations that allowed for full visibility of the entire exclusion zone between the two of them. Monitoring locations can be seen in Figure 1. The lead PSO was located adjacent to the in-water construction zone, monitoring the narrower Level A Take exclusion zone of the harbor seal, sea lions, and harbor porpoise and allowing for quick communication with the onsite construction supervisor. When impact driving occurs, this PSO will be a USFWS-certified marbled murrelet monitor. The second PSO was stationed farther away to the south in Boulevard Park (Figure 1) to monitor the broader exclusion zone for any ESA-listed marine mammals and for any Level B Take of the above mentioned species.

Weather Conditions during Monitoring

Weather was overcast and breezy, with intermittent rain showers at approximately 10:30 and 13:00. Visibility was 8+ miles. A Beaufort scale of 2-3 was observed on Bellingham Bay during monitoring with wind speeds between 5-8 knots. Temperature throughout the day ranged from mid-50°F to mid-60°F.

Daily Monitoring Summary

Marine mammals observed at the two monitoring stations during this monitoring event are listed in the monitoring log data sheets (Attachment B). No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) and one sea lion were recorded. The sea lion was recorded as a female Stellar sea lion (*Eumetopias jubatus*) due to its light coloring; however only the head was observed. No distressed or dying fish were observed during this monitoring event.

Level A Take

No Level A Takes were recorded during this monitoring event.

Level B Take

Level B Take was recorded for harbor seals and sea lions (Table 1); see monitoring data sheets for the full take information (Attachment B).

Table 1. Summary of Level B Take

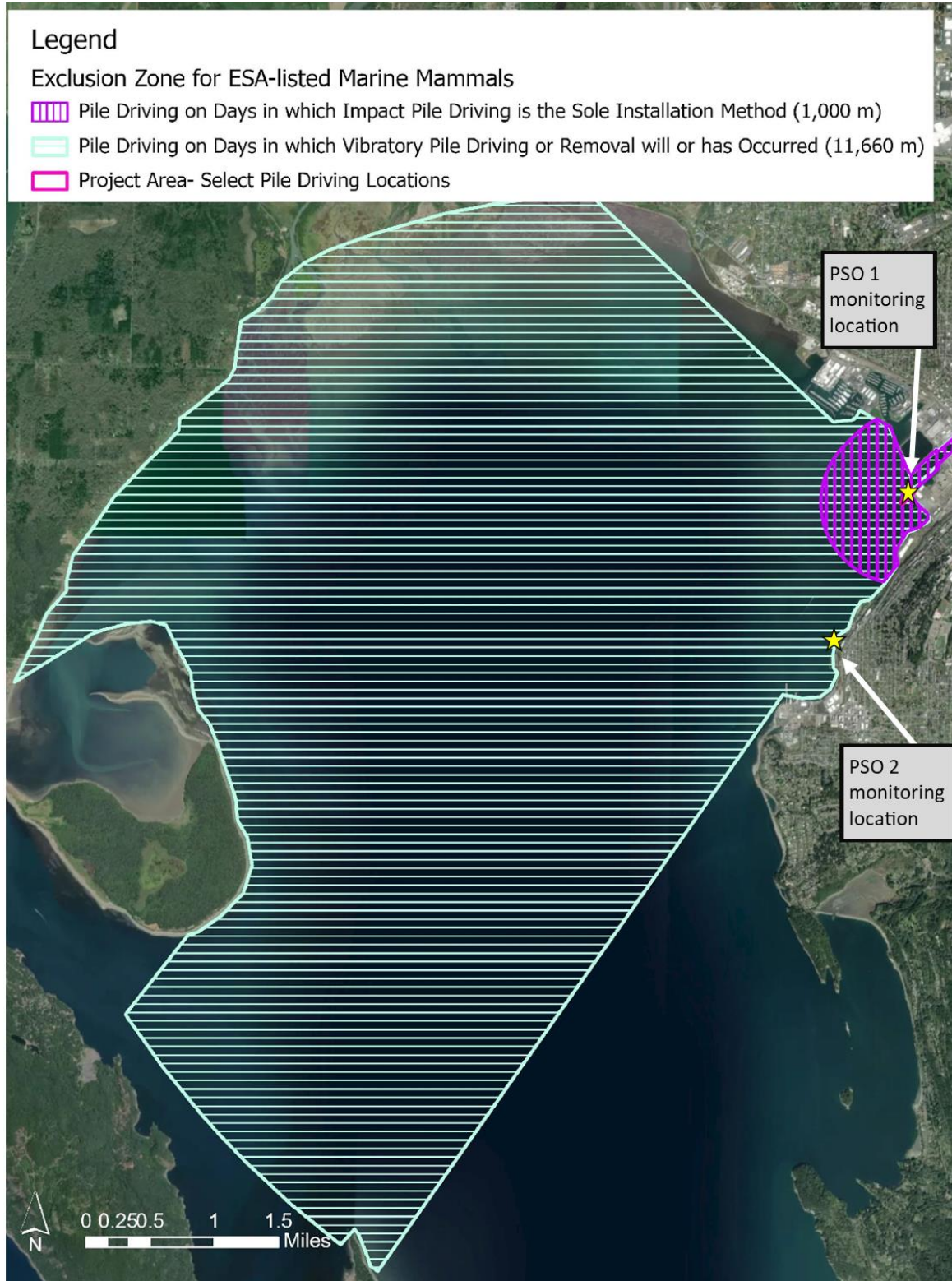


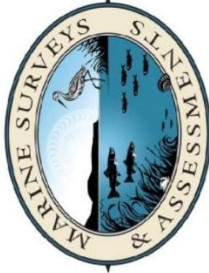
Species Observed within Level B Zone	Total Number of Species
Harbor seal (<i>Phoca vitulina</i>)	10
Stellar sea lion (<i>Eumetopias jubatus</i>)	1

Incorporated BMPs and Mitigation

No distressed or injured marine mammals or fish were observed as a result of the in-water pile removal and no Level A Takes occurred during the day's monitoring events. To aid in the prevention of harming these species, soft starts during pile removal were implemented as well as oil and debris containment booms were deployed surrounding the project site.

Figure 1. PSO monitoring locations shown on the ESA-listed marine mammal exclusion zone figure from the BST Marine Infrastructure Maintenance and Rehabilitation IHA (credit: Moffatt & Nichol).





Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 08/21/2024 Sheet 1 of 1 for this day

Monitor(s): Madalyn Walker Monitoring Location: Boulevard Park (PSO 2 Location)

Sighting #	Time of Day	Weather	Species	# of Individuals	Location *	Construction Activity/Behavior
1	11:14	overcast, breezy	Harbor Seal	1	1,571m, S of construction	Vibe removal 12in wood pile/ looking_ swimming away
2	11:14	overcast, breezy	Stellar Sea Lion	1	1,740m, SW of construction	Vibe removal 12in wood pile/ swimming away
3	11:15	overcast, breezy	Harbor Seal	1	1,900m, S of construction	Vibe removal 12in wood pile/ looking
4	11:18	overcast, breezy	Harbor Seal (same as previous)	1	1,870m, S of construction	vibe hammer off
5	11:24	overcast, breezy	Harbor Seal	1	2,110m, S of construction	vibe hammer off/ looking
6	11:30	overcast, breezy	Harbor Seal	1	1,700m, SW of construction	vibe hammer off/ looking
7	11:40	overcast, breezy	Harbor Seal	1	2,200m, SW of construction	vibe hammer off/ looking

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number



**Bellingham Shipping Terminal
Marine Infrastructure Maintenance & Rehabilitation**

Bellingham Bay, Bellingham, WA

Marine Mammal Monitoring

**DAILY MONITORING REPORT FOR:
Thursday, 22 August 2024**

**Reference Project #s:
NMFS # WCRO-2022-00335
USFWS # 2022-0013489
USACE # NWS-2022-141, NWS-2022-147**

Compiled by Bryan DeCaterina



MARINE SURVEYS & ASSESSMENTS

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Activity Overview

Today's monitoring activities aimed to protect marine mammals and ensure compliance with permit requirements to avoid serious injury or behavioral disturbance to marine mammals within the Bellingham Shipping Terminal (BST) infrastructure maintenance and repair action area. The protected species observers (PSOs), comprising scientists from Marine Surveys & Assessments (MSA), monitored the waters of Bellingham Bay at two locations (Figure 1) surrounding the project area before, during, and after construction activities occurred.

Marine mammal monitoring started at 07:00, and after 30 minutes of continuous monitoring in which no marine mammals were observed within the monitoring and exclusion zones, American Construction was informed that they could start work for the day. Monitoring continued off and on throughout the day as American Construction used a crane-mounted vibratory hammer to remove 12-inch creosote piles until 11:20. American Construction stayed onsite until 15:00. Approximately 18 minutes of vibratory pile removal occurred during this monitoring event with five (5) 12-inch creosote piles removed.

To avoid Level A Take during vibratory pile removal, a 40-meter shutdown zone was utilized for harbor seals, a 50-meter shutdown zone for harbor porpoises, and a 20-meter shutdown zone for sea lions (Attachment A, Figure 1). Any of the above species observed within the 11,660-meter monitoring zone during active pile removal was considered a Level B take. An 11,660-meter exclusion zone was utilized to monitor for ESA-listed marine mammals to avoid Level A and Level B Take on these species.

No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded.

No distressed or dying fish were observed during this monitoring event.

Monitoring Crew

Last Name	First Name	Affiliation	Role
DeCaterina	Bryan	MSA	Lead PSO
McClurg	Kimberly	MSA	PSO

Monitoring Methods

Prior to work starting for the day, PSOs communicate with the contractor, American Construction regarding the pile diameter and type of construction (i.e., impact hammer pile installation, vibratory pile installation, or vibratory pile removal) work that will occur. This informs the PSOs of the exclusion (i.e., shutdown) zone that will be used for the day and determines where the PSOs will be stationed for monitoring.

The PSOs arrive onsite at the pre-determined monitoring stations and begin a 30-minute continuous monitoring cycle. If no species of concern enter or come near to their respective



exclusion zones, then the onsite construction supervisor is informed that work may begin for the day. The PSOs monitor continuously during all pile installation and removal. Monitoring continues for 15 minutes after work has ceased to ensure no species of concern were within the Level A and Level B monitoring zones. If marine mammals enter or have been observed near the exclusion zone during or within 30 minutes of starting pile driving, the lead PSO will notify the onsite construction supervisor, and work must either stop or not begin until the animal(s) have moved outside of the respective zone.

Equipment utilized by PSOs during monitoring included the following: binoculars, spotting scopes, range finders, GPS units, compasses, phones, Whale Alert app, and data sheets to record when and where species of concern were observed.

Monitoring Locations

Two PSOs were stationed at pre-determined locations that allowed for full visibility of the entire exclusion zone between the two of them. Monitoring locations can be seen in Figure 1. The lead PSO was located adjacent to the in-water construction zone, monitoring the narrower Level A Take exclusion zone of the harbor seal, sea lions, and harbor porpoise and allowing for quick communication with the onsite construction supervisor. When impact driving occurs, this PSO will be a USFWS-certified marbled murrelet monitor. The second PSO was stationed farther away to the south in Boulevard Park (Figure 1) to monitor the broader exclusion zone for any ESA-listed marine mammals and for any Level B Take of the above-mentioned species.

Weather Conditions during Monitoring

Weather was overcast with a light breeze out of the northwest, with intermittent rain showers at approximately 11:00 and 12:00. Visibility was 8+ miles. A Beaufort scale of 1 was observed throughout most of the day on Bellingham Bay during monitoring with wind speeds between 5-8 knots. Temperature throughout the day ranged from mid-50°F to mid-60°F.

Daily Monitoring Summary

Marine mammals observed at the two monitoring stations during this monitoring event are listed in the monitoring data sheets (Attachment A). No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded near the project site. No distressed or dying fish were observed during this monitoring event.

Level A Take

No Level A Takes were recorded during this monitoring event.

Level B Take

Level B Take was recorded for harbor seals (Table 1); see monitoring data sheets for the full take information (Attachment A).



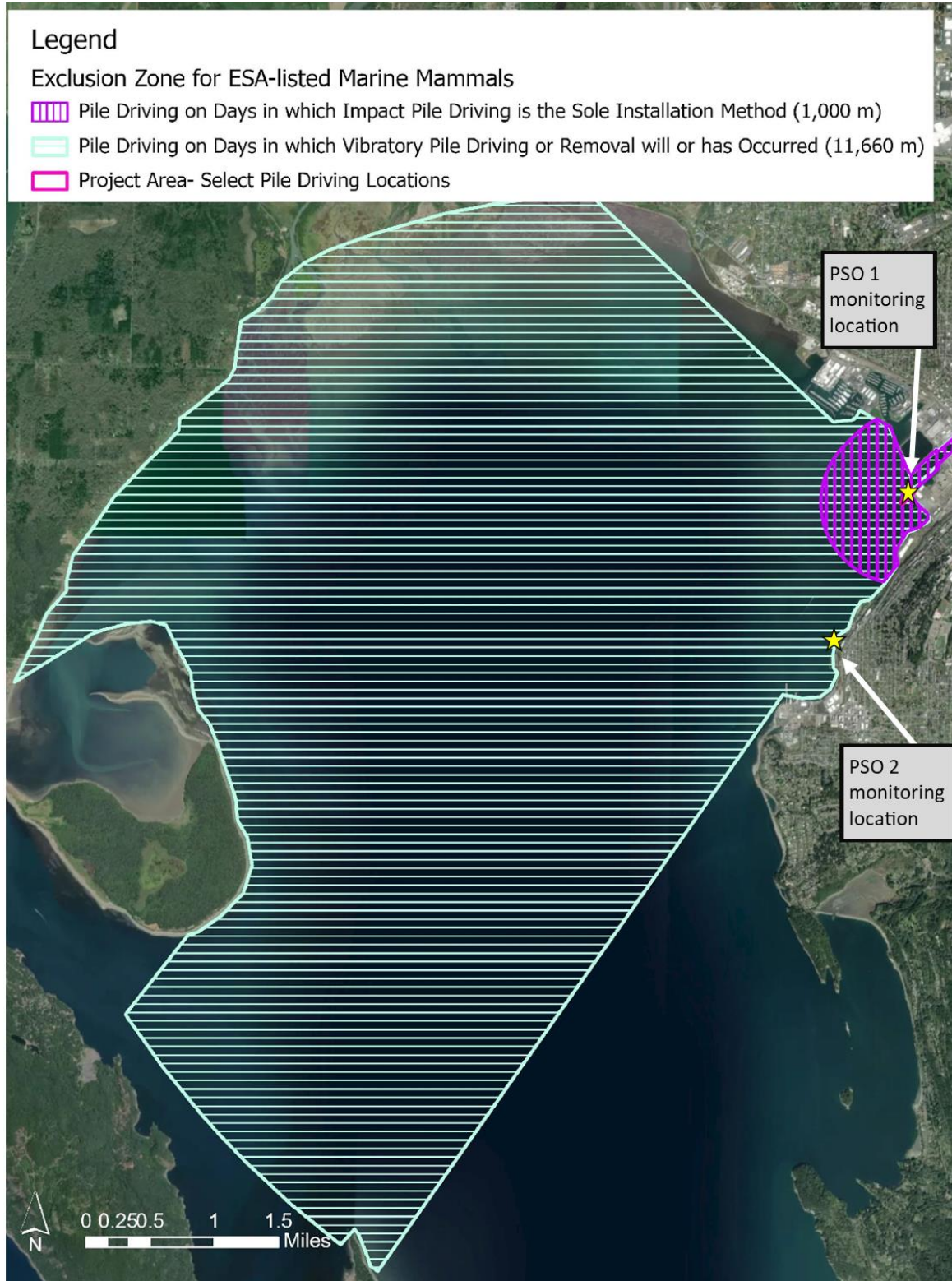
Table 1. Summary of Level B Take

Species Observed within Level B Zone	Total Number of Species
Harbor seal (<i>Phoca vitulina</i>)	8

Incorporated BMPs and Mitigation

No distressed or injured marine mammals or fish were observed as a result of the in-water pile removal and no Level A Takes occurred during the day's monitoring events. To aid in the prevention of harming these species, soft starts during pile removal were implemented as well as oil and debris containment booms were deployed surrounding the project site.

Figure 1. PSO monitoring locations shown on the ESA-listed marine mammal exclusion zone figure from the BST Marine Infrastructure Maintenance and Rehabilitation IHA (credit: Moffatt & Nichol).





Attachment A. Monitoring Data Sheets



Marine Mammal Observation Sheet:

Marine Mammal Observations
 Project Name: Bellingham Shipping Terminal

Date: 8.22.24 Sheet 1 of 1 for this day
 Monitor(s): Bryan DeCaterina Monitoring Location: Project Site

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	07:53	overcast	harbor seal	1	130M from Action Area	No vibratory happening
2	07:50	overcast	harbor seal	1	200M from action area	No vibratory happening
3	08:03	overcast	harbor seal	2	310M from action area	Actively Vibrating
4	08:11	overcast	harbor seal	1	110M from action area	Actively Vibrating
5	08:21	overcast	harbor seal	1	140M from action area	Actively Vibrating
6	11:05	overcast	harbor seal	1	300M from action area	Actively Vibrating
7	11:19	overcast	harbor seal	1	115M from action area	Actively Vibrating

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number



Bellingham Shipping Terminal Marine Infrastructure Maintenance & Rehabilitation

Bellingham Bay, Bellingham, WA

Marine Mammal Monitoring

**DAILY MONITORING REPORT FOR:
Friday, 23 August 2024**

**Reference Project #s:
NMFS # WCRO-2022-00335
USFWS # 2022-0013489
USACE # NWS-2022-141, NWS-2022-147**

Compiled by Kimberly McClurg



MARINE SURVEYS & ASSESSMENTS

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Activity Overview

Today's monitoring activities aimed to protect marine mammals and ensure compliance with permit requirements to avoid serious injury or behavioral disturbance to marine mammals within the Bellingham Shipping Terminal (BST) infrastructure maintenance and repair action area. The protected species observers (PSOs), comprising scientists from Marine Surveys & Assessments (MSA), monitored the waters of Bellingham Bay at two locations (Figure 1) surrounding the project area before, during, and after construction activities occurred.

Marine mammal monitoring started at 06:30, and after 30 minutes of continuous monitoring in which no marine mammals were observed within the monitoring and exclusion zones, American Construction was informed that they could start work for the day. Monitoring continued off and on throughout the day as American Construction used a crane-mounted vibratory hammer to remove 24-inch steel piles from 08:18 until 13:40. Approximately 90 minutes of vibratory pile removal occurred during this monitoring event with three (3) 24-inch steel piles being fully removed and two (2) more being loosened and pulled up approximately 20 ft, but not fully removed, since the allotted amount of time allowed for vibratory work was met for the day.

To avoid Level A take during vibratory pile removal, a 40-meter shutdown zone was utilized for harbor seals, a 50-meter shutdown zone for harbor porpoises, and a 20-meter shutdown zone for sea lions (IHA Figure 13). Any of the above species observed within the 11,660-meter monitoring zone during active pile removal was considered a Level B take (IHA Figure 14). An 11,660-meter exclusion zone was utilized to monitor for ESA-listed marine mammals to avoid Level A and Level B take on these species.

No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded.

No distressed or dying fish were observed during this monitoring event.

Monitoring Crew

Last Name	First Name	Affiliation	Role
McClurg	Kimberly	MSA	Lead PSO
DeCaterina	Bryan	MSA	PSO

Monitoring Methods

Prior to work starting for the day, PSOs communicate with the contractor, American Construction regarding the pile diameter and type of construction (i.e., impact hammer pile installation, vibratory pile installation, or vibratory pile removal) work that will occur. This informs the PSOs of the exclusion (i.e., shutdown) zone that will be used for the day and determines where the PSOs will be stationed for monitoring.



The PSOs arrive onsite at the pre-determined monitoring stations and begin a 30-minute continuous monitoring cycle. If no species of concern enter or come near to their respective exclusion zones, then the onsite construction supervisor is informed that work may begin for the day. The PSOs monitor continuously during all pile installation and removal. Monitoring continues for 15 minutes after work has ceased to ensure no species of concern were within the Level A and Level B monitoring zones. If marine mammals enter or have been observed near the exclusion zone during or within 30 minutes of starting pile driving, the lead PSO will notify the onsite construction supervisor, and work must either stop or not begin until the animal(s) have moved outside of the respective zone.

Equipment utilized by PSOs during monitoring included the following: binoculars, spotting scopes, range finders, GPS units, compasses, phones, Whale Alert app, and data sheets to record when and where species of concern were observed.

Monitoring Locations

Two PSOs were stationed at pre-determined locations that allowed for full visibility of the entire exclusion zone between the two of them. Monitoring locations can be seen in Figure 1. The lead PSO was located adjacent to the in-water construction zone, monitoring the narrower Level A take exclusion zone of the harbor seal, sea lions, and harbor porpoise and allowing for quick communication with the onsite construction supervisor. When impact driving occurs, this PSO will be a USFWS-certified marbled murrelet monitor. The second PSO was stationed farther away to the south in Boulevard Park (Figure 1) to monitor the broader exclusion zone for any ESA-listed marine mammals and for any Level B take of the above-mentioned species.

Weather Conditions during Monitoring

Weather was overcast with a light to moderate wind, intermittent rain showers throughout the monitoring period. Visibility was <7 miles. A Beaufort scale of 2 was observed throughout most of the day on Bellingham Bay during monitoring with wind speeds between 5-8 knots. Temperature throughout the day ranged from mid-50°F to mid-60°F.

Daily Monitoring Summary

Marine mammals observed at the two monitoring stations during this monitoring event are listed in the monitoring log data sheets (Attachment A). No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded. No distressed or dying fish were observed during this monitoring event.

Level A Take

No Level A takes were recorded during this monitoring event.

Level B Take

Level B take was recorded for harbor seals (Table 1); see monitoring data sheets for the full take information (Attachment A).



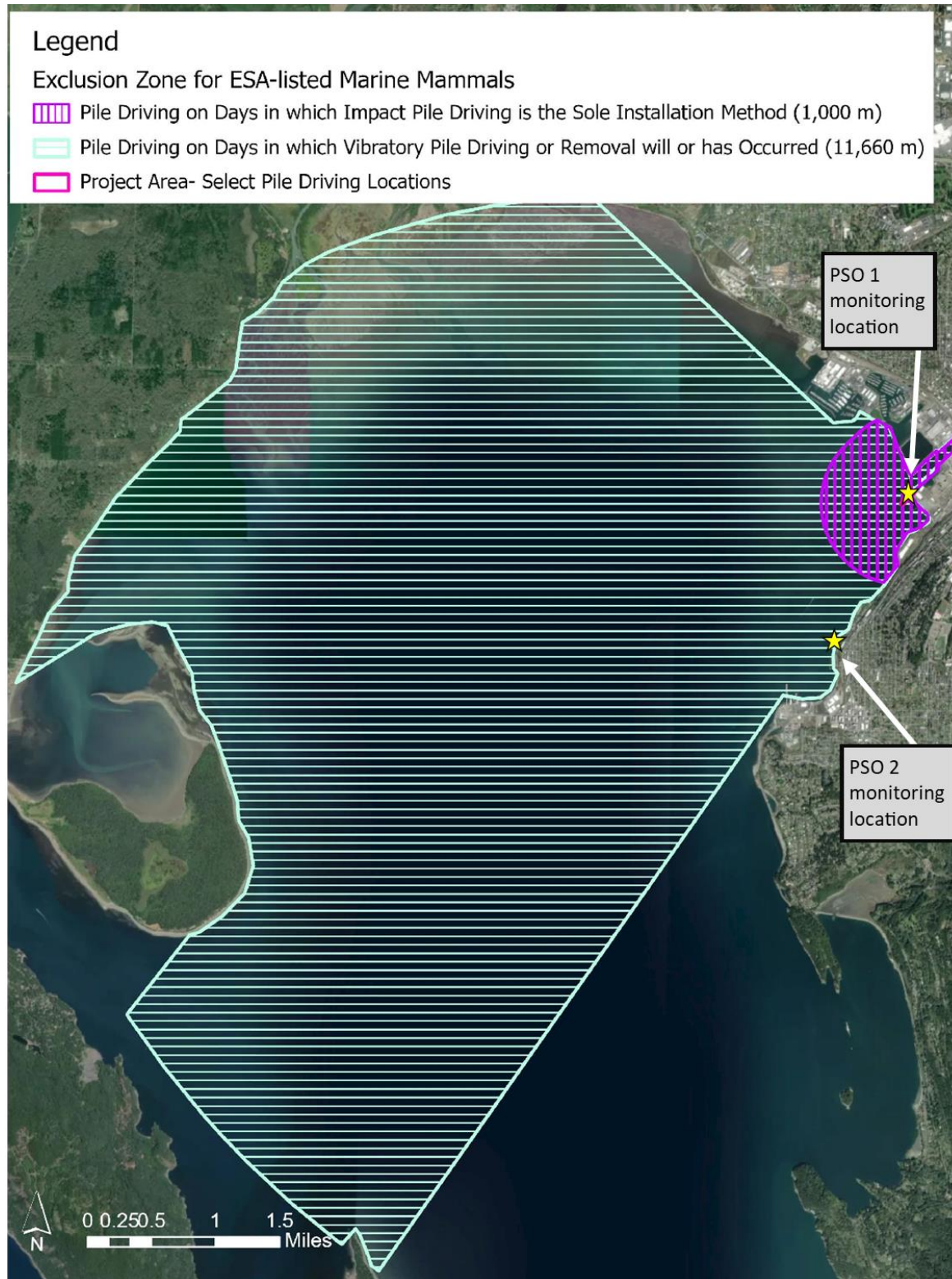
Table 1. Summary of Level B Take

Species Observed within Level B Zone	Total Number of Sightings
Harbor seal (<i>Phoca vitulina</i>)	8

Incorporated BMPs and Mitigation

No distressed or injured marine mammals or fish were observed as a result of the in-water pile removal and no Level A takes occurred during the day's monitoring events. To aid in the prevention of harming these species, soft starts during pile removal were implemented and oil and debris containment booms were deployed surrounding the project site.

Figure 1. PSO monitoring locations shown on the ESA-listed marine mammal exclusion zone figure from the BST Marine Infrastructure Maintenance and Rehabilitation IHA (credit: Moffatt & Nichol).





Appendix A. Monitoring Data Sheets



Marine Mammal Observation Sheet:

Marine Mammal Observations
 Project Name: Bellingham Shipping Terminal

Date: 08/23/2024 Sheet 1 of 1 for this day
 Monitor(s): Bryan DeCaterina Monitoring Location: Boulevard Park

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	08:10		Harbor Seal	1	aprox 1200M for Pile work	Not actively vibing
2	12:15		Harbor Seal	1	aprox 1200M for Pile work	Actively Vibing out 3rd 24in steel pile
3	13:27		Harbor Seal	1	aprox 1200M for Pile work	Actively Vibing out 4th 24in steel pile

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number



**Bellingham Shipping Terminal
Marine Infrastructure Maintenance & Rehabilitation**

Bellingham Bay, Bellingham, WA

Marine Mammal Monitoring

**DAILY MONITORING REPORT FOR:
Monday, 26 August 2024**

**Reference Project #s:
NMFS # WCRO-2022-00335
USFWS # 2022-0013489
USACE # NWS-2022-141, NWS-2022-147**

Compiled by Jill Cooper



MARINE SURVEYS & ASSESSMENTS

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Activity Overview

Today's monitoring activities aimed to protect marine mammals and ensure compliance with permit requirements to avoid serious injury or behavioral disturbance to marine mammals within the Bellingham Shipping Terminal (BST) infrastructure maintenance and repair action area. The protected species observers (PSOs), comprising scientists from Marine Surveys & Assessments (MSA), monitored the waters of Bellingham Bay at two locations (Figure 1) surrounding the project area before, during, and after construction activities occurred.

Marine mammal monitoring started at 06:30, and after 30 minutes of continuous monitoring in which no marine mammals were observed within the monitoring and exclusion zones, American Construction was informed that they could start work for the day. Monitoring continued off and on throughout the day as American Construction used a crane-mounted vibratory hammer to remove 24-inch steel piles from 08:00 until 13:55. Approximately 90 minutes of vibratory pile removal occurred during this monitoring event with three (3) 24-inch steel piles being fully removed and one (1) more being loosened and pulled up approximately 1 ft, but not fully removed, since the allotted amount of time allowed for vibratory work was met for the day.

To avoid Level A take during vibratory pile removal, a 40-meter shutdown zone was utilized for harbor seals, a 50-meter shutdown zone for harbor porpoises, and a 20-meter shutdown zone for sea lions (IHA Figure 13). Any of the above species observed within the 11,660-meter monitoring zone during active pile removal was considered a Level B take (IHA Figure 14). An 11,660-meter exclusion zone was utilized to monitor for ESA-listed marine mammals to avoid Level A and Level B take on these species.

No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded.

No distressed or dying fish were observed during this monitoring event.

Monitoring Crew

Last Name	First Name	Affiliation	Role
Cooper	Jill	MSA	Lead PSO
Amos	Meg	MSA	PSO

Monitoring Methods

Prior to work starting for the day, PSOs communicate with the contractor, American Construction regarding the pile diameter and type of construction (i.e., impact hammer pile installation, vibratory pile installation, or vibratory pile removal) work that will occur. This informs the PSOs of the exclusion (i.e., shutdown) zone that will be used for the day and determines where the PSOs will be stationed for monitoring.



The PSOs arrive onsite at the pre-determined monitoring stations and begin a 30-minute continuous monitoring cycle. If no species of concern enter or come near to their respective exclusion zones, then the onsite construction supervisor is informed that work may begin for the day. The PSOs monitor continuously during all pile installation and removal. Monitoring continues for 15 minutes after work has ceased to ensure no species of concern were within the Level A and Level B monitoring zones. If marine mammals enter or have been observed near the exclusion zone during or within 30 minutes of starting pile driving, the lead PSO will notify the onsite construction supervisor, and work must either stop or not begin until the animal(s) have moved outside of the respective zone.

Equipment utilized by PSOs during monitoring included the following: binoculars, spotting scopes, range finders, GPS units, compasses, phones, Whale Alert app, and data sheets to record when and where species of concern were observed.

Monitoring Locations

Two PSOs were stationed at pre-determined locations that allowed for full visibility of the entire exclusion zone between the two of them. Monitoring locations can be seen in Figure 1. The lead PSO was located adjacent to the in-water construction zone, monitoring the narrower Level A take exclusion zone of the harbor seal, sea lions, and harbor porpoise and allowing for quick communication with the onsite construction supervisor. When impact driving occurs, this PSO will be a USFWS-certified marbled murrelet monitor. The second PSO was stationed farther away to the south in Boulevard Park (Figure 1) to monitor the broader exclusion zone for any ESA-listed marine mammals and for any Level B take of the above-mentioned species.

Weather Conditions during Monitoring

Weather was cloudy and calm with a light intermittent breeze and occasional light rain showers throughout the monitoring period. Visibility was < 7 miles. A Beaufort scale of 0-2 was observed throughout most of the day on Bellingham Bay during monitoring with wind speeds between 0-5 knots. Temperature throughout the day ranged from 56°F to 62°F.

Daily Monitoring Summary

Marine mammals observed at the two monitoring stations during this monitoring event are listed in the monitoring log data sheets (Attachment A). No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded. No distressed or dying fish were observed during this monitoring event.

Level A Take

No Level A takes were recorded during this monitoring event.

Level B Take

Level B take was recorded for harbor seals (Table 1); see monitoring data sheets for the full take information (Attachment A).



Table 1. Summary of Level B Take

Species Observed within Level B Zone	Total Number of Sightings
Harbor seal (<i>Phoca vitulina</i>)	10*

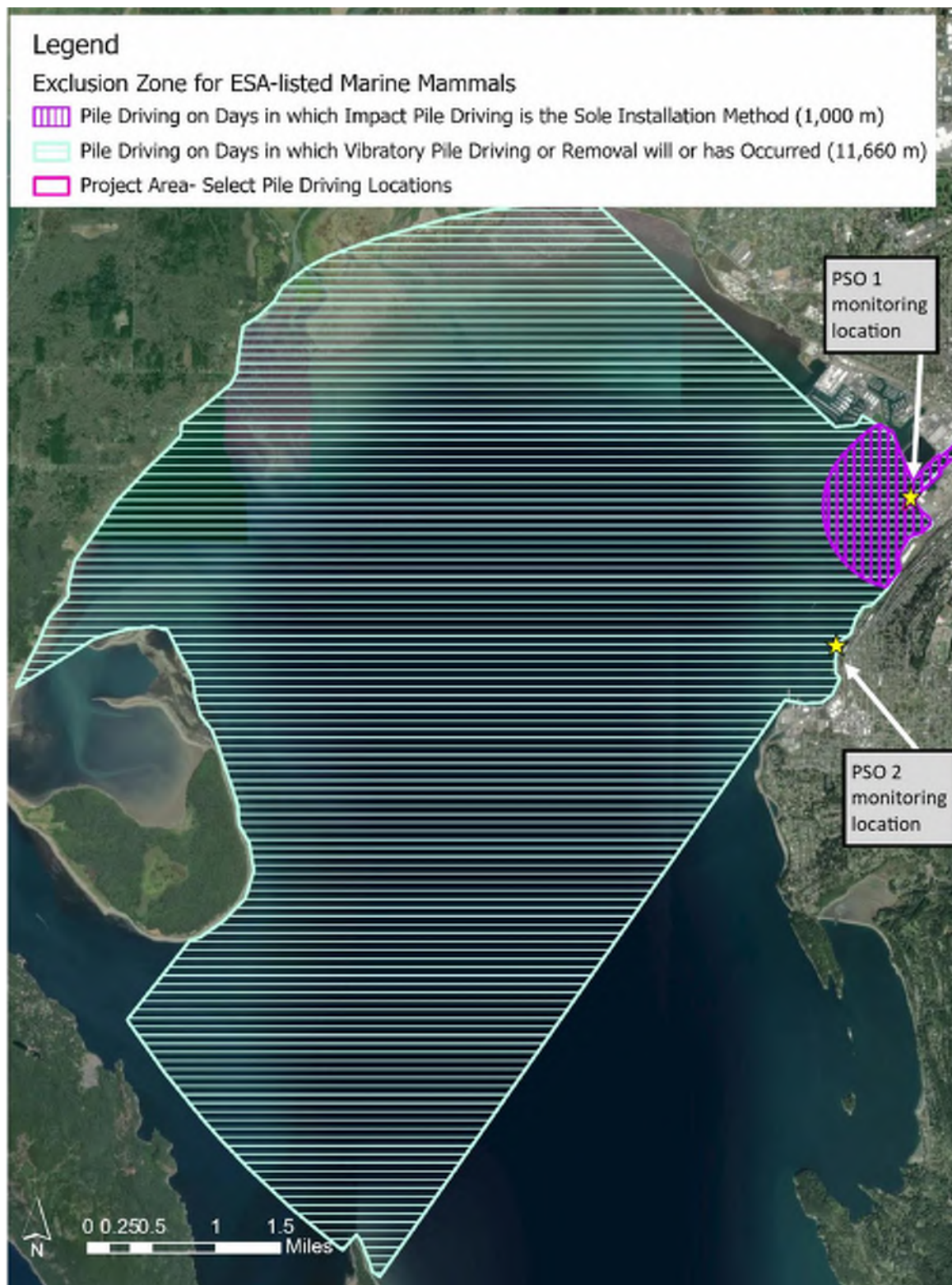
**These 10 sightings were likely the same few individual harbor seals.*

Incorporated BMPs and Mitigation

No distressed or injured marine mammals or fish were observed as a result of the in-water pile removal and no Level A takes occurred during the day's monitoring events. To aid in the prevention of harming these species, soft starts during pile removal were implemented and oil and debris containment booms were deployed surrounding the project site.



Figure 1. PSO monitoring locations shown on the ESA-listed marine mammal exclusion zone figure from the BST Marine Infrastructure Maintenance and Rehabilitation IHA (credit: Moffatt & Nichol).





Appendix A. Monitoring Data Sheets

Weather: Cloudy. Light Sprinkle of rain in early Morning & ~ noon,
Calm, ~56°F - 62°F, Beaufort Scale 0-2

Marine Mammal Observation Sheet:

Started monitoring @ 0630, ended @ 1415



Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 8/26/24

Sheet 1 of 2 for this day

Monitor(s): Till Cooper

Monitoring Location: Port Construction Loc.

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	0700	Cloudy, calm	HASE	1	90 m. from end of pier (south), 300 m from current	Barge Loc.
2	0730	"	"	2	one 200 m NW of pier Second 300 m. NW.	Swimming, no construction eating fish, swimming. No
3	0735	"	"	1	60 m. west of barge, curiously watching.	Dredge/Scrap No pile work
4	0745	"	"	1	100 m. west. likely same individual.	Hunting/Swimming. No pile driving yet. Prepping gear.
B-5	0800	"	"	1	300 m east of pier (400m from pile removal loc).	Head out of water. Pulling pile w/ Vibe. Hammer.
B-6	0803	"	"	1	150 m. NW of barge & pile pulling loc.	Head out of water, observing. Vibratory pile pulling.
B-7	0828	"	"	1	200 m NW of barge + pile pulling loc.	Swimming. Vibratory pile pulling.
B-8	0831	"	"	1	60 m. west of barge, ~100 m W. of	Swimming. pile construction - Vibe. pulling
9	0909	"	"	2	100 m. west of Barge	Swimming. No construction. Moving equip.
10	0947	"	"	1	150 m NW of barge,	Swimming. No Const. Making equip.
11	10:24	"	"	1	60 m NW of barge, ~90 m from pile pulling	Watching w/ head out of water. Currently paused construction.
B-12	11:04	"	"	1	50 m west of barge @ ~80 m from pile pulling	swimming away to ~200 m. Currently vibratory action.
13	11:17	"	"	2	150 m N/NW of barge, near other pier.	Head out of water, checking out my monitoring position. Currently no construction - paused.

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal



Date: 8/26/2024

Sheet 2 of 2 for this day

Monitor(s): Jill Cooper

Monitoring Location: Port Construction Loc.

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
14	12:05	cloudy, calm	HASE	2	One HASE ~ 20 m west of barge & one ~ 100 m west.	Likely same individuals all morning. Swimming, observing. A lot of pile driving.
B- 15	1319	"	"	1	North of barge ~ 100 m	Curiously checking the water + fishing - then dove when they started pile pulling.
B- 16	1321	"	"	1	West of barge ~ 90 m	Swimming w/ head out of water. Vibe. Pile pulling.
B- 17	1342	"	"	1	500 m west of barge	Swimming, observing. Likely same individual. Vibratory pile pulling.
B- 18	1352	"	"	1	350 m NW of barge	Swimming North. Vibratory pile pulling.

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal



Date: 26 August 2024

Sheet 1 of 1 for this day

Monitor(s): Ney AMOS

Monitoring Location: Boulevard Park

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	0713	Cloudy Calms, ~50%	HASE	1	200 M @ 330° from 48°43'52.8"	No activity at time of sighting
2	0735	" "	HASE	1	-122°30'11.6" 200 M @ 5° from same location	No activity @ time of sighting - animal heading east towards project site
3	0840	" "	HASE	1	@ 750 M @ 50° from same location	No activity @ time of sighting. Animal eating Salween behind tribou to skin boat near mouth of Whistler Creek. Assume same animal as #2.
B-TAKE 4	1328	" "	HASE	1	@ 375 M @ 330° from same location	Vibratory action during sighting that started 9 minutes prior to sighting.

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

**Bellingham Shipping Terminal
Marine Infrastructure Maintenance & Rehabilitation**

Bellingham Bay, Bellingham, WA

Marine Mammal Monitoring

**DAILY MONITORING REPORT FOR:
Tuesday, 27 August 2024**

**Reference Project #s:
NMFS # WCRO-2022-00335
USFWS # 2022-0013489
USACE # NWS-2022-141, NWS-2022-147**

Compiled by Meg Amos



MARINE SURVEYS & ASSESSMENTS

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Activity Overview

Today's monitoring activities aimed to protect marine mammals and ensure compliance with permit requirements to avoid serious injury or behavioral disturbance to marine mammals within the Bellingham Shipping Terminal (BST) infrastructure maintenance and repair action area. The protected species observers (PSOs), comprising scientists from Marine Surveys & Assessments (MSA), monitored the waters of Bellingham Bay at two locations (Figure 1) surrounding the project area before, during, and after construction activities occurred.

Pile driving activities associated with this project may result in incidental take of marine mammals through increased in-air and in-water noise levels. Level A take has the potential to injure or cause permanent threshold shifts, and Level B take may cause behavioral shifts in species. Four species have limited incidental takes that have been authorized for the duration of this project (Table 1); harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), Stellar sea lion (*Eumetopias jubatus*), and harbor porpoise (*Phocoena phocoena*).

Table 1. Authorized Incidental Take Allowed for each Species.

Species	Authorized Level A harassment	Authorized Level B harassment
Harbor seal	264	2,029
California sea lion	0	87
Stellar sea lion	0	87
Harbor porpoise	0	261

Marine mammal monitoring started at 06:30, and after 30 minutes of continuous monitoring in which no marine mammals were observed within the monitoring and exclusion zones, American Construction was informed that they could start work for the day. Monitoring continued off and on throughout the day as American Construction used a crane-mounted vibratory hammer to remove 24-inch steel piles from 0817 hours until 13:45 hours. Approximately 90 minutes of vibratory pile removal occurred during this monitoring event with three (3) 24-inch steel piles being fully removed.

To avoid Level A take during vibratory pile removal, a 40-meter shutdown zone was utilized for harbor seals, a 50-meter shutdown zone for harbor porpoises, and a 20-meter shutdown zone for sea lions (IHA Figure 13). Any of the above species observed within the 11,660-meter monitoring zone during active pile removal was considered a Level B take (IHA Figure 14). An 11,660-meter exclusion zone was utilized to monitor for ESA-listed marine mammals to avoid Level A and Level B take on these species.

No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded. No Level A takes have been associated with the project to date. **Level B takes for the project to date consist of 1 Stellar sea lion and 42 harbor seals.**



No distressed or dying fish were observed during this monitoring event.

Monitoring Crew

Last Name	First Name	Affiliation	Role
Amos	Meg	MSA	Lead PSO
Cooper	Jill	MSA	PSO

Monitoring Methods

Prior to work starting for the day, PSOs communicate with the contractor, American Construction regarding the pile diameter and type of construction (i.e., impact hammer pile installation, vibratory pile installation, or vibratory pile removal) work that will occur. This informs the PSOs of the exclusion (i.e., shutdown) zone that will be used for the day and determines where the PSOs will be stationed for monitoring.

The PSOs arrive onsite at the pre-determined monitoring stations and begin a 30-minute continuous monitoring cycle. If no species of concern enter or come near to their respective exclusion zones, then the onsite construction supervisor is informed that work may begin for the day. The PSOs monitor continuously during all pile installation and removal. Monitoring continues for 30 minutes after work has ceased to ensure no species of concern were within the Level A and Level B monitoring zones. If marine mammals enter or have been observed near the exclusion zone during or within 30 minutes of starting pile driving, the lead PSO will notify the onsite construction supervisor, and work must either stop or not begin until the animal(s) have moved outside of the respective zone.

Equipment utilized by PSOs during monitoring included the following: binoculars, spotting scopes, range finders, GPS units, compasses, phones, Whale Alert app, and data sheets to record when and where species of concern were observed.

Monitoring Locations

Two PSOs were stationed at pre-determined locations that allowed for full visibility of the entire exclusion zone between the two of them. Monitoring locations can be seen in Figure 1. The lead PSO was located adjacent to the in-water construction zone, monitoring the narrower Level A take exclusion zone of the harbor seal, sea lions, and harbor porpoise and allowing for quick communication with the onsite construction supervisor. When impact driving occurs, this PSO will be a USFWS-certified marbled murrelet monitor. The second PSO was stationed farther away to the south in Boulevard Park (Figure 1) to monitor the broader exclusion zone for any ESA-listed marine mammals and for any Level B take of the above-mentioned species.

Weather Conditions during Monitoring

Weather was cloudy and calm with a light intermittent breeze and occasional light rain showers throughout the monitoring period. Visibility was < 7 miles. A Beaufort scale of 0-2 was observed



throughout most of the day on Bellingham Bay during monitoring with wind speeds between 0-5 knots. Temperature throughout the day ranged from 50°F to 65°F.

Daily Monitoring Summary

Marine mammals observed at the two monitoring stations during this monitoring event are listed in the monitoring log data sheets (Attachment A). No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded. No distressed or dying fish were observed during this monitoring event.

Level A Take

No Level A takes were recorded during this monitoring event.

Level B Take

Level B take was recorded for harbor seals (Table 1); see monitoring data sheets for the full take information (Attachment A).

Table 2. Summary of Level B Take

Species Observed within Level B Zone	Daily Total Number of Sightings	Project Total Level B Takes
Harbor seal (<i>Phoca vitulina</i>)	*6	42

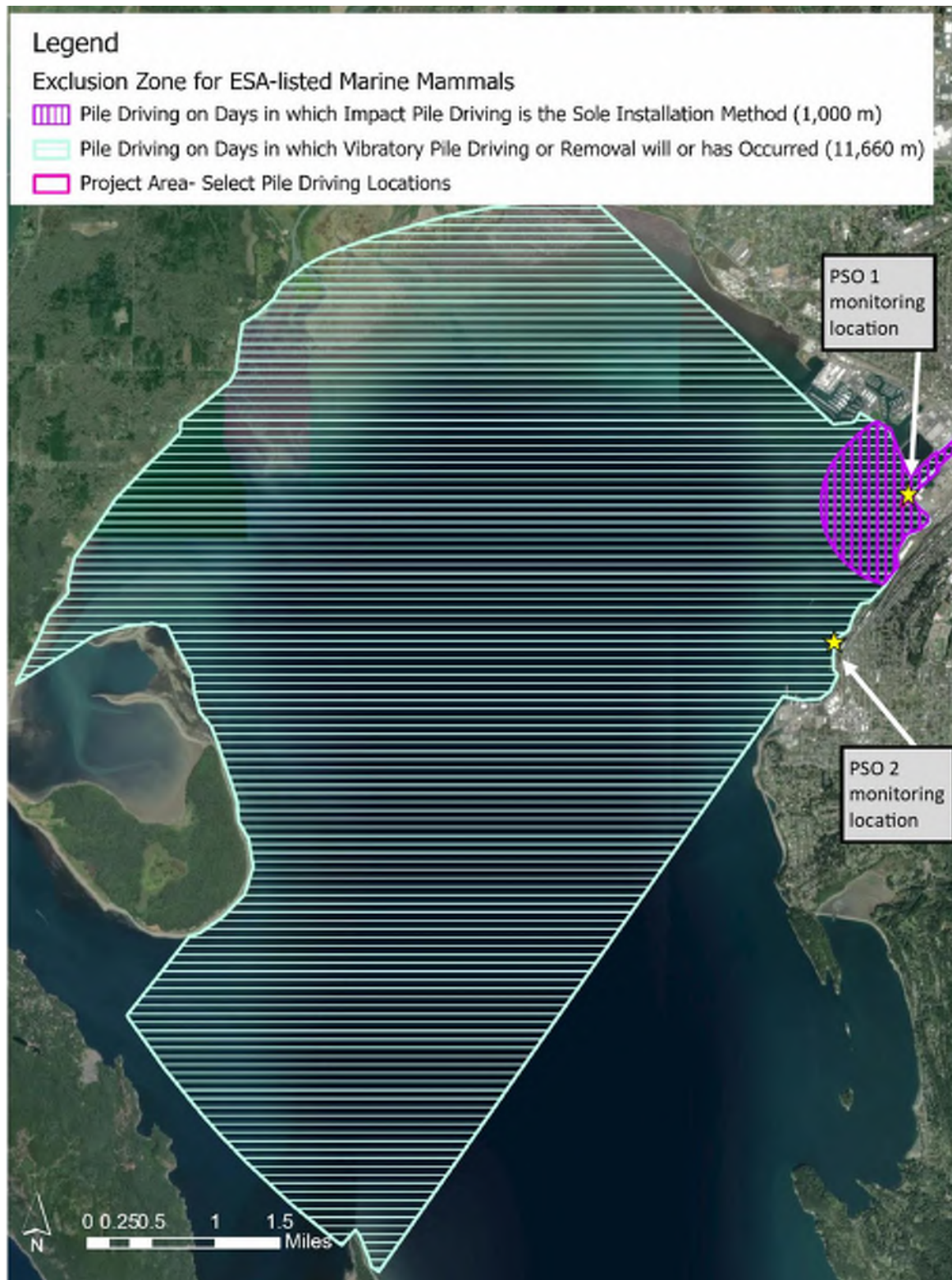
**These 6 sightings were likely the same few individual harbor seals.*

Incorporated BMPs and Mitigation

No distressed or injured marine mammals or fish were observed as a result of the in-water pile removal and no Level A takes occurred during the day's monitoring events. To aid in the prevention of harming these species, soft starts during pile removal were implemented and oil and debris containment booms were deployed surrounding the project site.

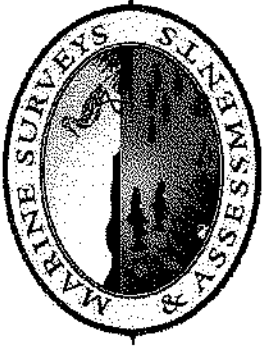


Figure 1. PSO monitoring locations shown on the ESA-listed marine mammal exclusion zone figure from the BST Marine Infrastructure Maintenance and Rehabilitation IHA (credit: Moffatt & Nichol).





Appendix A. Monitoring Data Sheets



Marine Mammal Observation Sheet:

Marine Mammal Observations

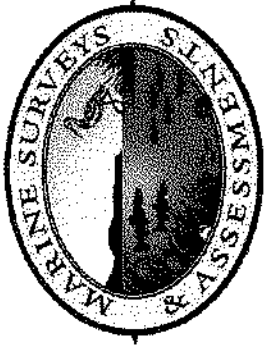
Project Name: Bellingham Shipping Terminal

Date: 27 August 2024 Sheet 1 of 1 for this day
 Monitor(s): Meg Annos Monitoring Location: Job Site

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	0630	Partly cloudy light breeze	HASE	2	50 ± 90 m from buoy @ 300° from monitoring location	NO construction activity seals cavities
2	0825	" "	HASE	1	100 m ± 291°	Vibe on but no movement from animal
3	1038	" "	HASE	1	50 m from buoy ± 175° from observation location	Vibe on but NO indication of movement
4	1253	Partly cloudy light breeze	HASE	1	150 m from buoy @ 285° from monitoring location	Animal in - No odd behavior observed
5	1324	" "	HASE	1	200 m from buoy @ 257° from monitoring location	Animal moving away from project observed 200 m ± 60 M - very close to 4. SO NOT counting as "take" - swimming slowly away from project.

Level B - 2
 Level B - 3
 Level B - 4

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

monitored 6:30 am - 4:00 pm

Date: 8/27/24 Sheet 1 of 1 for this day

Monitor(s): Jim Cooper Monitoring Location: Boulevard Park

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	0706	Partly Cloudy, Clear, calm	HASE	1	~60m from shoreline @ park (NW)	Swimming SW. Moving equipment. No pile driving yet.
2	0723	"	"	1	~500m south of Park Construction pier	Swimming, foraging. No pile driving.
3	0738	"	"	2	One ~160m NW of shoreline (likely same indiv. as above) + ~700m SE of Park pier	Foraging, swimming. No pile driving. No disturbance of structure.
4	0827	"	"	1	Construction pier	Foraging on existing existing boat, west side of water.
5	0912	"	"	1	~300m SW of shoreline @ park	Swimming. Foraging. Piling pile to 6 m high. No vibratory work.
6	1138	"	"	1	~200m North of Shoreline @ park	Foraging. No construction - moving equipment.
7	1301	"	"	1	~300m SW of Shoreline @ park	Swimming south. Vibratory pile piling.
8	1317-1319	"	"	1	~500m West of Shoreline @ park	Leaking a small leak about water. Vibratory pile piling. No construction - vibratory pile piling

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

**Bellingham Shipping Terminal
Marine Infrastructure Maintenance & Rehabilitation**

Bellingham Bay, Bellingham, WA

Marine Mammal Monitoring

**DAILY MONITORING REPORT FOR:
Wednesday, 28 August 2024**

**Reference Project #s:
NMFS # WCRO-2022-00335
USFWS # 2022-0013489
USACE # NWS-2022-141, NWS-2022-147**

Compiled by: Madalyn Walker



**MARINE SURVEYS & ASSESSMENTS
2601 Washington Street
Port Townsend WA 98368
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info@msaenvironmental.com**



Activity Overview

Today's monitoring activities aimed to protect marine mammals and ensure compliance with permit requirements to avoid serious injury or behavioral disturbance to marine mammals within the Bellingham Shipping Terminal (BST) infrastructure maintenance and repair action area. The protected species observers (PSOs), comprising scientists from Marine Surveys & Assessments (MSA), monitored the waters of Bellingham Bay at two locations (Figure 1) surrounding the project area before, during, and after construction activities occurred.

Pile driving activities associated with this project may result in incidental take of marine mammals through increased in-air and in-water noise levels. Level A take has the potential to injure or cause permanent threshold shifts, and Level B take may cause behavioral shifts in species. Four species have limited incidental takes that have been authorized for the duration of this project (Table 1); harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), Stellar sea lion (*Eumetopias jubatus*), and harbor porpoise (*Phocoena phocoena*).

Table 1. Authorized Incidental Take Allowed for each Species.

Species	Authorized Level A harassment	Authorized Level B harassment
Harbor seal	264	2,029
California sea lion	0	87
Stellar sea lion	0	87
Harbor porpoise	0	261

Marine mammal monitoring started at 06:30, and after 30 minutes of continuous monitoring in which no marine mammals were observed within the exclusion zones, American Construction was informed that they could start work for the day. Monitoring continued off and on throughout the day as American Construction used a crane-mounted vibratory hammer to remove 24-inch steel piles from 11:44 PST until 14:38 PST. Approximately 46 minutes of vibratory pile removal occurred during this monitoring event with three (3) 24-inch steel piles being partially removed.

To avoid Level A take during vibratory pile removal, a 40-meter shutdown zone was utilized for harbor seals, a 50-meter shutdown zone for harbor porpoises, and a 20-meter shutdown zone for sea lions (IHA Figure 13). Any of the above species observed within the 11,660-meter monitoring zone during active pile removal was considered a Level B take (IHA Figure 14). An 11,660-meter exclusion zone was utilized to monitor for ESA-listed marine mammals to avoid Level A and Level B take on these species.



No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded. No Level A takes have been associated with the project to date. **Level B takes for the project to date consist of 1 Stellar sea lion and 56 harbor seals.**

No distressed or dying fish were observed during this monitoring event.

Monitoring Crew

Last Name	First Name	Affiliation	Role
Walker	Madalyn	MSA	Lead PSO
Corniuk	Raquel	MSA	PSO

Monitoring Methods

Prior to work starting for the day, PSOs communicate with the contractor, American Construction, regarding the pile diameter and type of construction (i.e., impact hammer pile installation, vibratory pile installation, or vibratory pile removal) work that will occur. This informs the PSOs of the exclusion (i.e., shutdown) zone that will be used for the day and determines where the PSOs will be stationed for monitoring.

The PSOs arrive onsite at the pre-determined monitoring stations and begin a 30-minute continuous monitoring cycle. If no species of concern enter or come near to their respective exclusion zones, then the onsite construction supervisor is informed that work may begin for the day. The PSOs monitor continuously during all pile installation and removal. Monitoring continues for 30 minutes after work has ceased to ensure no species of concern were within the Level A and Level B monitoring zones. If marine mammals enter or have been observed near the exclusion zone, during or within 30 minutes of starting pile driving, the lead PSO will notify the onsite construction supervisor, and work must either stop or not begin until the animal(s) have moved outside of the respective zone.

Equipment utilized by PSOs during monitoring included the following: binoculars, spotting scopes, range finders, GPS units, compasses, phones, Whale Alert app, and data sheets to record when and where species of concern were observed.

Monitoring Locations

Two PSOs were stationed at pre-determined locations that allowed for full visibility of the entire exclusion zone between the two of them. Monitoring locations can be seen in Figure 1. The lead PSO was located adjacent to the in-water construction zone, monitoring the narrower



Level A take exclusion zone of the harbor seal, sea lions, and harbor porpoise and allowing for quick communication with the onsite construction supervisor. When impact driving occurs, this PSO will be a USFWS-certified marbled murrelet monitor. The second PSO was stationed farther away to the south in Boulevard Park (Figure 1) to monitor the broader exclusion zone for any ESA-listed marine mammals and for any Level B take of the above-mentioned species.

Weather Conditions during Monitoring

Weather started out as overcast with a light, intermittent breeze transitioning to sunny and breezy by noon. Visibility was < 7 miles. A Beaufort scale of 1-3 was observed on Bellingham Bay during monitoring with wind speeds starting at 1 knot in the morning and picking up to 6-8 knots by the afternoon. Temperature throughout the day ranged from 54°F to 65°F.

Daily Monitoring Summary

Marine mammals observed at the two monitoring stations during this monitoring event are listed in the monitoring log data sheets (Appendix A). No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded. No distressed or dying fish were observed during this monitoring event.

Level A Take

No Level A takes were recorded during this monitoring event.

Level B Take

Level B take was recorded for harbor seals (Table 2); see monitoring data sheets for the full take information (Appendix A).

Table 2. Summary of Level B Take

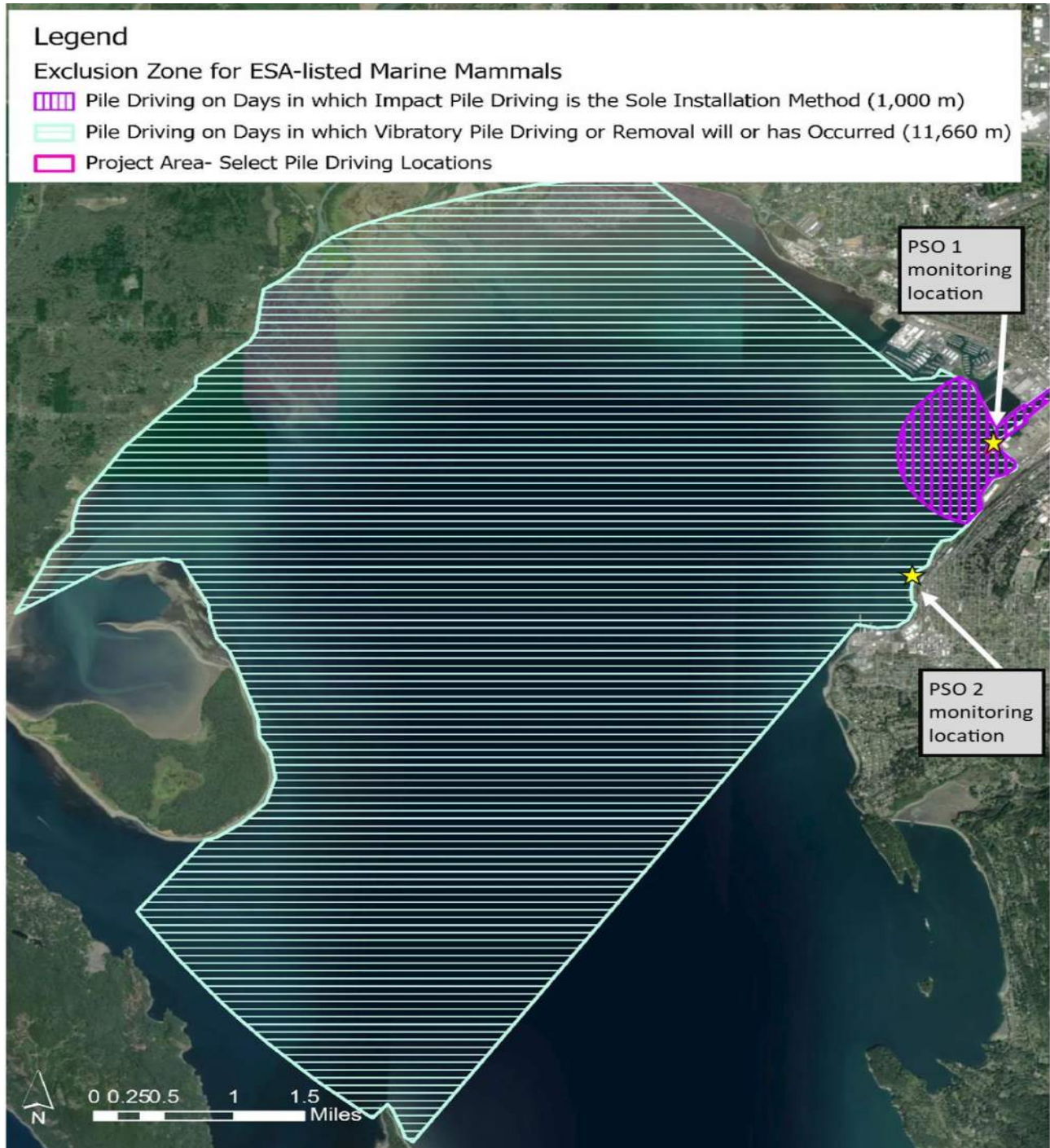
Species Observed within Level B Zone	Daily Total Number of Level B Takes	Project Total Level B Takes
Harbor seal (<i>Phoca vitulina</i>)	14*	56

*Some sightings were likely to be the same harbor seals seen throughout the day.

Incorporated BMPs and Mitigation

No distressed or injured marine mammals or fish were observed as a result of the in-water pile removal and no Level A takes occurred during the day’s monitoring events. To aid in the prevention of harming these species, soft starts during pile removal were implemented and oil and debris containment booms were deployed surrounding the project site.

Figure 1. PSO monitoring locations shown on the ESA-listed marine mammal exclusion zone figure from the BST Marine Infrastructure Maintenance and Rehabilitation IHA (credit: Moffatt & Nichol).



Appendix A. Monitoring Data Sheets



Level B Take Daily Total: 14 harbor seals
 Vibratory Pile Removal Daily Total: 46 minutes
 (3) 24-inch steel piles partially removed

Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 08.28.24 Sheet 1 of 3 for this day
 Monitor(s): Madalyn Walker Monitoring Location: Job site

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	06:45	overcast, 55F, 1 kt SW	Harbor seal	1	174 m NW of work	No active pile removal, foraging/swimming
2	06:48	overcast, 55F, 1 kt SW	Harbor seal	1	237 m SW of work	No active pile removal, foraging/swimming
3	06:50	overcast, 55F, 1 kt SW	Harbor seal	1	167 m NW of work	No active pile removal, foraging/swimming
4	06:55	overcast, 55F, 1 kt SW	Harbor seal	1	374 m SW of work	No active pile removal, foraging/swimming
5	07:02	overcast, 55F, 1 kt SW	Harbor seal	1	746 m SE of work	No active pile removal, foraging/swimming
6	07:14	overcast, 55F, 1 kt SW	Harbor seal	1	421 m W of work	No active pile removal, foraging/swimming
7	07:20	overcast, 55F, 1 kt SW	Harbor seal	1	246 m S of work	No active pile removal, foraging/swimming
8	07:22	overcast, 55F, 1 kt SW	Harbor seal	1	109 m S of work	No active pile removal, foraging/swimming
9	07:25	overcast, 55F, 1 kt SW	Harbor seal	1	567 m SE of work	No active pile removal, foraging/swimming
10	07:26	overcast, 55F, 1 kt SW	Harbor seal	1	201 m W of work	No active pile removal, foraging/swimming
11	07:30	overcast, 55F, 1 kt SW	Harbor seal	1	530 m SW of work	No active pile removal, foraging/swimming
12	07:33	overcast, 55F, 1 kt SW	Harbor seal	1	150 m W of work	No active pile removal, foraging/swimming
13	07:38	overcast, 55F, 1 kt SW	Harbor seal	1	181 m NW of work	No active pile removal, foraging/swimming
14	07:40	overcast, 55F, 1 kt SW	Harbor seal	1	253 m NW of work	No active pile removal, foraging/swimming

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

*B = Level B Takes



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 08.28.24 Sheet 2 of 3 for this day
 Monitor(s): Madalyn Walker Monitoring Location: Job site

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
15	07:40	overcast, 56F, 2 kt SW	Harbor seal	1	201 m NW of work	No active pile removal, foraging/swimming
16	07:43	overcast, 56F, 2 kt SW	Harbor seal	1	139 m SW of work	No active pile removal, foraging/swimming
17	07:44	overcast, 56F, 2 kt SW	Harbor seal	1	182 m NW of work	No active pile removal, foraging/swimming
18	07:47	overcast, 56F, 2 kt SW	Harbor seal	1	176 m W of work	No active pile removal, foraging/swimming
19	11:35	sunny, 60F, 4-5 kt W	Harbor seal	1	365 m SE of work	No active pile removal, foraging/swimming
20	11:40	sunny, 60F, 4-5 kt W	Harbor seal	1	182 m S of work	No active pile removal, foraging/swimming
21	11:47	sunny, 60F, 4-5 kt W	Harbor seal	1	95 m W of work	Active vibrate pile removal, looking/swimming
22	11:53	sunny, 60F, 4-5 kt W	Harbor seal	1	506 m SE of work	Active vibrate pile removal, looking/swimming
23	12:06	sunny, 60F, 4-5 kt W	Harbor seal	1	329 m W of work	No active pile removal, looking
24	12:08	sunny, 60F, 4-5 kt W	Harbor seal	1	146 m S of work	Active vibrate pile removal, looking/swimming
25	12:11	sunny, 60F, 4-5 kt W	Harbor seal	1	233 m W of work	Active vibrate pile removal, looking/swimming
26	12:12	sunny, 60F, 4-5 kt W	Harbor seal	1	274 m W of work	Active vibrate pile removal, looking/swimming
27	12:15	sunny, 60F, 4-5 kt W	Harbor seal	1	101 m W of work	No active pile removal, looking
28	12:15	sunny, 60F, 4-5 kt W	Harbor seal	1	110 m S of work	No active pile removal, looking

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

*B = Level B Takes



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 08.28.24 Sheet 3 of 3 for this day
 Monitor(s): Madalyn Walker Monitoring Location: Job site

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
29	11:17	sunny , 60F, 4-5 kt W	Harbor seal	1	114 m W of work	No active pile removal, looking
30	11:27	sunny , 60F, 4-5 kt W	Harbor seal	1	528 m WSW of work	No active pile removal, foraging/swimming
31	13:47	sunny , 60F, 6-8 kt W	Harbor seal	1	90 m WSW of work	Active vibe pile removal, looking/swimming
32	13:50	sunny , 60F, 6-8 kt W	Harbor seal	1	400 m W of work	Active vibe pile removal, looking/swimming
33	13:51	sunny , 60F, 6-8 kt W	Harbor seal	1	100 m SW of work	Active vibe pile removal, looking/swimming
34	13:54	sunny , 60F, 6-8 kt W	Harbor seal	1	690 m NW of work	Active vibe pile removal, looking/swimming
35	13:57	sunny , 60F, 6-8 kt W	Harbor seal	1	129 m W of work	Active vibe pile removal, looking/swimming
36	14:00	sunny , 60F, 6-8 kt W	Harbor seal	1	150 m E of work	Active vibe pile removal, looking/swimming
37	14:02	sunny , 60F, 6-8 kt W	Harbor seal	1	840 m W of work	Active vibe pile removal, looking/swimming
38	14:03	sunny , 60F, 6-8 kt W	Harbor seal	1	70 m SW of work	Active vibe pile removal, looking/swimming
39	14:16	sunny , 60F, 6-8 kt W	Harbor seal	1	124 m SW of work	No active pile removal, looking

*B *B *B *B *B *B *B *B *B

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number
 *B = Level B Takes

**Bellingham Shipping Terminal
Marine Infrastructure Maintenance & Rehabilitation**

Bellingham Bay, Bellingham, WA

Marine Mammal Monitoring

**DAILY MONITORING REPORT FOR:
Thursday, 29 August 2024**

**Reference Project #s:
NMFS # WCRO-2022-00335
USFWS # 2022-0013489
USACE # NWS-2022-141, NWS-2022-147**

Compiled by: Raquel Corniuk



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Activity Overview

Today's monitoring activities aimed to protect marine mammals and ensure compliance with permit requirements to avoid serious injury or behavioral disturbance to marine mammals within the Bellingham Shipping Terminal (BST) infrastructure maintenance and repair action area. The protected species observers (PSOs), comprising scientists from Marine Surveys & Assessments (MSA), monitored the waters of Bellingham Bay at two locations (Figure 1) surrounding the project area before, during, and after construction activities occurred.

Pile driving activities associated with this project may result in incidental take of marine mammals through increased in-air and in-water noise levels. Level A take has the potential to injure or cause permanent threshold shifts, and Level B take may cause behavioral shifts in species. Four species have limited incidental takes that have been authorized for the duration of this project (Table 1); harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), Stellar sea lion (*Eumetopias jubatus*), and harbor porpoise (*Phocoena phocoena*).

Table 1. Authorized Incidental Take Allowed for each Species.

Species	Authorized Level A harassment	Authorized Level B harassment
Harbor seal	264	2,029
California sea lion	0	87
Stellar sea lion	0	87
Harbor porpoise	0	261

Marine mammal monitoring started at 06:30, and after 30 minutes of continuous monitoring in which no marine mammals were observed within the exclusion zones, American Construction was informed that they could start work for the day. Monitoring continued off and on throughout the day as American Construction used a crane-mounted vibratory hammer to remove 24-inch steel piles from 7:39 PST until 15:10 PST. Approximately 90 minutes of vibratory pile removal occurred during this monitoring event with three (3) 24-inch steel piles being fully removed and two (2) 24-inch steel piles being partially removed.

To avoid Level A take during vibratory pile removal, a 40-meter shutdown zone was utilized for harbor seals, a 50-meter shutdown zone for harbor porpoises, and a 20-meter shutdown zone for sea lions (IHA Figure 13). Any of the above species observed within the 11,660-meter monitoring zone during active pile removal was considered a Level B take (IHA Figure 14). An 11,660-meter exclusion zone was utilized to monitor for ESA-listed marine mammals to avoid Level A and Level B take on these species.



No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded. No Level A takes have been associated with the project to date. **Level B takes for the project to date consist of 1 Stellar sea lion and 87 harbor seals.**

No distressed or dying fish were observed during this monitoring event.

Monitoring Crew

Last Name	First Name	Affiliation	Role
Walker	Madalyn	MSA	Lead PSO
Corniuk	Raquel	MSA	PSO

Monitoring Methods

Prior to work starting for the day, PSOs communicate with the contractor, American Construction, regarding the pile diameter and type of construction (i.e., impact hammer pile installation, vibratory pile installation, or vibratory pile removal) work that will occur. This informs the PSOs of the exclusion (i.e., shutdown) zone that will be used for the day and determines where the PSOs will be stationed for monitoring.

The PSOs arrive onsite at the pre-determined monitoring stations and begin a 30-minute continuous monitoring cycle. If no species of concern enter or come near to their respective exclusion zones, then the onsite construction supervisor is informed that work may begin for the day. The PSOs monitor continuously during all pile installation and removal. Monitoring continues for 30 minutes after work has ceased to ensure no species of concern were within the Level A and Level B monitoring zones. If marine mammals enter or have been observed near the exclusion zone, during or within 30 minutes of starting pile driving, the lead PSO will notify the onsite construction supervisor, and work must either stop or not begin until the animal(s) have moved outside of the respective zone.

Equipment utilized by PSOs during monitoring included the following: binoculars, spotting scopes, range finders, GPS units, compasses, phones, Whale Alert app, and data sheets to record when and where species of concern were observed.

Monitoring Locations

Two PSOs were stationed at pre-determined locations that allowed for full visibility of the entire exclusion zone between the two of them. Monitoring locations can be seen in Figure 1. The lead PSO was located adjacent to the in-water construction zone, monitoring the narrower



Level A take exclusion zone of the harbor seal, sea lions, and harbor porpoise and allowing for quick communication with the onsite construction supervisor. When impact driving occurs, this PSO will be a USFWS-certified marbled murrelet monitor. The second PSO was stationed farther away to the south in Boulevard Park (Figure 1) to monitor the broader exclusion zone for any ESA-listed marine mammals and for any Level B take of the above-mentioned species.

Weather Conditions during Monitoring

In the morning the weather conditions consisted of clear skies with a slight breeze that transitioned to sunny clear skies with upwards of 6 knots of wind. Visibility was < 7 miles. A Beaufort scale of 1-2 was observed on Bellingham Bay during monitoring with wind speeds starting at 1 knot in the morning and picking up to 6 knots by the afternoon. Temperature throughout the day ranged from 55°F to 68°F.

Daily Monitoring Summary

Marine mammals observed at the two monitoring stations during this monitoring event are listed in the monitoring log data sheets (Appendix A). No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded. No distressed or dying fish were observed during this monitoring event.

Level A Take

No Level A takes were recorded during this monitoring event.

Level B Take

Level B take was recorded for harbor seals (Table 2); see monitoring data sheets for the full take information (Appendix A).

Table 2. Summary of Level B Take

Species Observed within Level B Zone	Daily Total Number of Level B Takes	Project Total Level B Takes
Harbor seal (<i>Phoca vitulina</i>)	31*	87

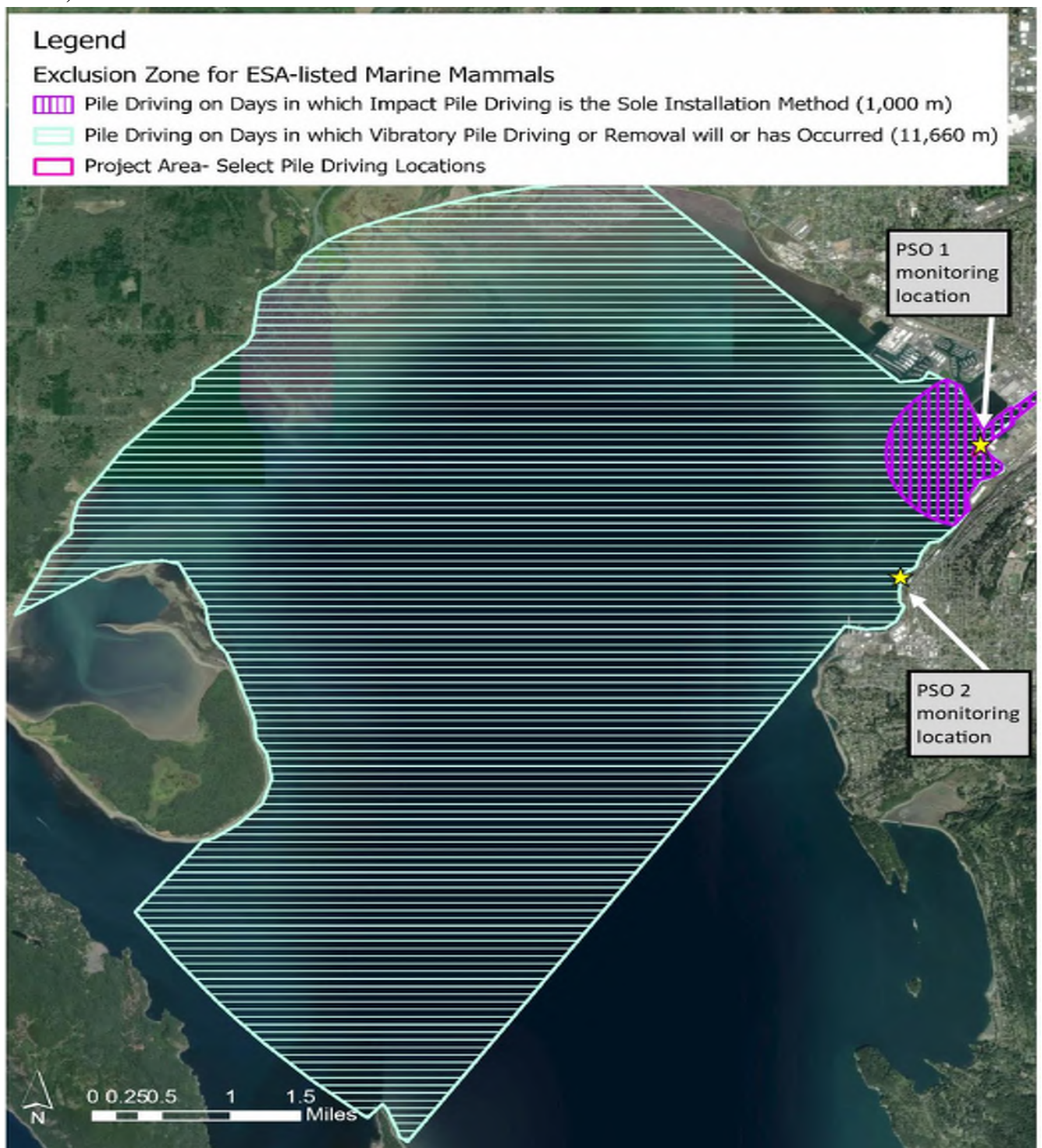
*Some sightings were likely to be the same harbor seals seen throughout the day.

Incorporated BMPs and Mitigation

No distressed or injured marine mammals or fish were observed as a result of the in-water pile removal and no Level A takes occurred during the day's monitoring events. To aid in the prevention of harming these species, soft starts during pile removal were implemented and oil and debris containment booms were deployed surrounding the project site.



Figure 1. PSO monitoring locations shown on the ESA-listed marine mammal exclusion zone figure from the BST Marine Infrastructure Maintenance and Rehabilitation IHA (credit: Moffatt & Nichol).



Appendix A. Monitoring Data Sheets

Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping TerminalDate: 08-29-24Sheet 1 of 7 for this dayMonitor(s): Madeline WalkerMonitoring Location: Job site

Level B Take Daily Total: 31 harbor seals
 Vibratory Pile Removal Daily Total: 90 minutes
 (3) 24-inch steel piles removed, 2 partially removed

Sighting #	Time of Day	Weather	Species	# of Individuals	Location* from work area	Construction Activity/Behavior
1	06:33	Clear, 55°F Slight breeze @ 2 kts.	Harbor Seal	1	720 m. W of work	No active construction, foraging
2	06:34			1	150 m SW	
3	06:37			1	110 m SW (same as above)	
4	06:37			1	90 m W	
5	06:41			1	110 m W	
6	06:44			2	160 m SW	
7	06:47			1	165 m SW	
8	06:49			2	170 m SW	
9	06:51			1	361 m W	
10	06:51			2	120 m SW	
11	06:54			1	1000 m NW	
12	06:54			2	90 m SW	
13	06:55			1	700 m W	

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

"4" = Level B Take



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 08.29.24 Sheet 2 of 7 for this day

Monitor(s): Madalyn Walker Monitoring Location: Job Site

Sighting #	Time of Day	Weather	Species	# of Individuals	Location* <small>from York site</small>	Construction Activity/Behavior
14	06:56	Sunny, 55°F Clear Skies	Harbor Seal	1	130 m SW	No active construction, foraging
15	06:59	Slight breeze @ 2 kts		1	169 m WSW	
16	07:00			1	400 m W	
17	07:06			1	208 m W	
18	07:06			1	356 m W	
19	07:15			1	175 m NW	
20	07:17			1	245 m W	
21	07:20			1	184 m W	
22	07:21			1	215 m NW	
23	07:24			1	193 m W	
24	07:24			1	141 m W	
25	07:30			1	213 m NW	
26	07:38			1	120 m W	↘

*B

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

"*B" = Level B Take



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 08.30.24

Sheet 3 of 7 for this day

Monitor(s): Madelyn Walker

Monitoring Location: Job Site

Sighting #	Time of Day	Weather	Species	# of Individuals	Location* <small>from work area</small>	Construction Activity/Behavior
*B 27	07:40	Sunny, 55°F Clear skies, breeze @ 2 kts	Harbor Seal	1	210 m W	Active vibe removal, looking/foraging
*B 28	07:40			1	250 m W	
*B 29	07:43			1	680 m WSW	
*B 30	07:44			1	278 m WSW	
*B 31	07:45			1	620 m W	
*B 32	07:46			1	570 m SW	
*B 33	07:49			1	234 m SW	
*B 34	07:49			1	171 m SW	
*B 35	07:49			1	126 m W	
*B 36	07:50			1	180 m W	
*B 37	07:51			1	604 m W	↘
*B 38	07:59			1	320 m WSW	No active vibe, foraging
*B 39	07:59			1	195 m SW	No active vibe, foraging

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

"*B" = Level B Take



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 08-29-24 Sheet 4 of 7 for this day
 Monitor(s): Madelyn Walker Monitoring Location: Job Site

Sighting #	Time of Day	Weather	Species	# of Individuals	Location* <small>from north area</small>	Construction Activity/Behavior
40	08:00	Clear, Sunny, Slight breeze @ 2 kts.	Harbor Seal	1	189 m W	No active vibs, foraging
41	08:05			1	617 m W	No active vibs, foraging
42	08:09			1	237 m NW	Active Vibe removal, looking/foraging
43	08:09			1	536 m NW	
44	08:15			1	113 m WSW	
45	08:17			1	308 m WSW	
46	08:26			1	277 m W	
47	08:29			1	293 m NW	No active vibs, foraging/looking
48	08:33			1	300 m NW	
49	08:44			1	220 m N	
50	08:57			1	260 m NW	
51	09:13			1	313 m W	
52	09:15			1	545 m N	

*B

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

"#B" = Level B Take



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 08-29-24

Sheet 5 of 7 for this day

Monitor(s): Madelyn Walker

Monitoring Location: Job Site

Sighting #	Time of Day	Weather	Species	# of Individuals	Location* From work area	Construction Activity/Behavior
53	09:17	Clear, sunny 58°F, slight breeze @ 3kts	Harbor Seal	1	280 m NW	No active vibc, foraging
54	09:19			1	300 m W	
55	09:27			1	275 m W	
56	09:38			1	134 m NW	
57	09:44			1	109 m NW	
58	10:15			2	750 m W	
59	10:20			1	150 m N	
60	10:32			1	157 m N	
61	10:32			2	810 m N	
62	10:45			1	143 m N	
63	10:50			1	207 m NW	
64	10:52			1	250 m N	Active pile removal, looking
65	10:55			2	749 m W	Active pile removal, looking/foraging

*G

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

*"G" = Level B Taka



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 08-29-24 Sheet 6 of 7 for this day
 Monitor(s): Madehya Walker Monitoring Location: Job Site

Sighting #	Time of Day	Weather	Species	# of Individuals	Location* <small>from look area</small>	Construction Activity/Behavior	
*B 66	11:05	Sunny, clear Skies, 68°F, Breezy @ 4 kts	Harbor Seal	1	730 m W	Active vibe removal, looking/foraging	
*B 67	11:05	↓	↓	1	610 m W	↓	
*B 68	11:06			1	166 m N		
*B 69	11:06			1	201 m N		
*B 70	11:15			1	800 m W		
*B 71	11:18	↓	↓	1	187 m NW	↓	
*B 72	11:28			1	300 m N		
*B 73	11:43	↓	↓	1	98 m N	↓	
*B 74	13:49			Sunny, clear Skies, 68°F, Breezy @ 6 kts W	1		142 m N
*B 75	14:11			1	138 m NW		
*B 76	14:24	↓	↓	1	112 m NE	Active Vibe removed, looking	
*B 77	14:33			1	109 m N	No active vibe, foraging	
*B 78	14:46	↓	↓	1	140 m N	Active vibe removal, looking	

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 08.29.24 Sheet 7 of 7 for this day

Monitor(s): Nadeya Walker Monitoring Location: Job Site

Sighting #	Time of Day	Weather	Species	# of Individuals	Location ^{*from work area}	Construction Activity/Behavior
<u>79</u>	<u>14:57</u>	<u>Sunny, breeze</u>	<u>Harbor Seal</u>	<u>1</u>	<u>171 m NW</u>	<u>Active vibe removal, looking</u>
<u>80</u>	<u>15:01</u>	<u>Sunny, breeze</u>	<u>Harbor Seal</u>	<u>1</u>	<u>240 m N</u>	<u>Active vibe removal, looking</u>

*B

*B

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

"*B" = Level B Take

**Bellingham Shipping Terminal
Marine Infrastructure Maintenance & Rehabilitation**

Bellingham Bay, Bellingham, WA

Marine Mammal Monitoring

**DAILY MONITORING REPORT FOR:
Friday, 30 August 2024**

**Reference Project #s:
NMFS # WCRO-2022-00335
USFWS # 2022-0013489
USACE # NWS-2022-141, NWS-2022-147**

Compiled by: Raquel Corniuk



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Activity Overview

Today's monitoring activities aimed to protect marine mammals and ensure compliance with permit requirements to avoid serious injury or behavioral disturbance to marine mammals within the Bellingham Shipping Terminal (BST) infrastructure maintenance and repair action area. The protected species observers (PSOs), comprising scientists from Marine Surveys & Assessments (MSA), monitored the waters of Bellingham Bay at two locations (Figure 1) surrounding the project area before, during, and after construction activities occurred.

Pile driving activities associated with this project may result in incidental take of marine mammals through increased in-air and in-water noise levels. Level A take has the potential to injure or cause permanent threshold shifts, and Level B take may cause behavioral shifts in species. Four species have limited incidental takes that have been authorized for the duration of this project (Table 1); harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), Stellar sea lion (*Eumetopias jubatus*), and harbor porpoise (*Phocoena phocoena*).

Table 1. Authorized Incidental Take Allowed for each Species.

Species	Authorized Level A harassment	Authorized Level B harassment
Harbor seal	264	2,029
California sea lion	0	87
Stellar sea lion	0	87
Harbor porpoise	0	261

Marine mammal monitoring started at 07:40, and after 30 minutes of continuous monitoring in which no marine mammals were observed within the exclusion zones, American Construction was informed that they could start work for the day. Monitoring continued off and on throughout the day as American Construction used a crane-mounted vibratory hammer to remove 24-inch steel piles from 9:05 PST until 15:10 PST. Approximately 90 minutes of vibratory pile removal occurred during this monitoring event with three (3) 24-inch steel piles being fully removed and three (3) 24-inch steel piles being partially removed.

To avoid Level A take during vibratory pile removal, a 40-meter shutdown zone was utilized for harbor seals, a 50-meter shutdown zone for harbor porpoises, and a 20-meter shutdown zone for sea lions (IHA Figure 13). Any of the above species observed within the 11,660-meter monitoring zone during active pile removal was considered a Level B take (IHA Figure 14). An 11,660-meter exclusion zone was utilized to monitor for ESA-listed marine mammals to avoid Level A and Level B take on these species.



No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded. No Level A takes have been associated with the project to date. **Level B takes for the project to date consist of 1 Stellar sea lion and 113 harbor seals.**

No distressed or dying fish were observed during this monitoring event.

Monitoring Crew

Last Name	First Name	Affiliation	Role
Corniuk	Raquel	MSA	Lead PSO
Walker	Madalyn	MSA	PSO

Monitoring Methods

Prior to work starting for the day, PSOs communicate with the contractor, American Construction, regarding the pile diameter and type of construction (i.e., impact hammer pile installation, vibratory pile installation, or vibratory pile removal) work that will occur. This informs the PSOs of the exclusion (i.e., shutdown) zone that will be used for the day and determines where the PSOs will be stationed for monitoring.

The PSOs arrive onsite at the pre-determined monitoring stations and begin a 30-minute continuous monitoring cycle. If no species of concern enter or come near to their respective exclusion zones, then the onsite construction supervisor is informed that work may begin for the day. The PSOs monitor continuously during all pile installation and removal. Monitoring continues for 30 minutes after work has ceased to ensure no species of concern were within the Level A and Level B monitoring zones. If marine mammals enter or have been observed near the exclusion zone, during or within 30 minutes of starting pile driving, the lead PSO will notify the onsite construction supervisor, and work must either stop or not begin until the animal(s) have moved outside of the respective zone.

Equipment utilized by PSOs during monitoring included the following: binoculars, spotting scopes, range finders, GPS units, compasses, phones, Whale Alert app, and data sheets to record when and where species of concern were observed.

Monitoring Locations

Two PSOs were stationed at pre-determined locations that allowed for full visibility of the entire exclusion zone between the two of them. Monitoring locations can be seen in Figure 1. The lead PSO was located adjacent to the in-water construction zone, monitoring the narrower



Level A take exclusion zone of the harbor seal, sea lions, and harbor porpoise and allowing for quick communication with the onsite construction supervisor. When impact driving occurs, this PSO will be a USFWS-certified marbled murrelet monitor. The second PSO was stationed farther away to the south in Boulevard Park (Figure 1) to monitor the broader exclusion zone for any ESA-listed marine mammals and for any Level B take of the above-mentioned species.

Weather Conditions during Monitoring

The weather conditions consisted of sunny clear skies with a slight breeze throughout the day. Visibility was < 7 miles. A Beaufort scale of 1-2 was observed on Bellingham Bay during monitoring with wind speeds starting at 1 knot in the morning and picking up to 4 knots by the afternoon. Temperature throughout the day ranged from 57°F to 70°F.

Daily Monitoring Summary

Marine mammals observed at the two monitoring stations during this monitoring event are listed in the monitoring log data sheets (Appendix A). No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded. No distressed or dying fish were observed during this monitoring event.

Level A Take

No Level A takes were recorded during this monitoring event.

Level B Take

Level B take was recorded for harbor seals (Table 2); see monitoring data sheets for the full take information (Appendix A).

Table 2. Summary of Level B Take

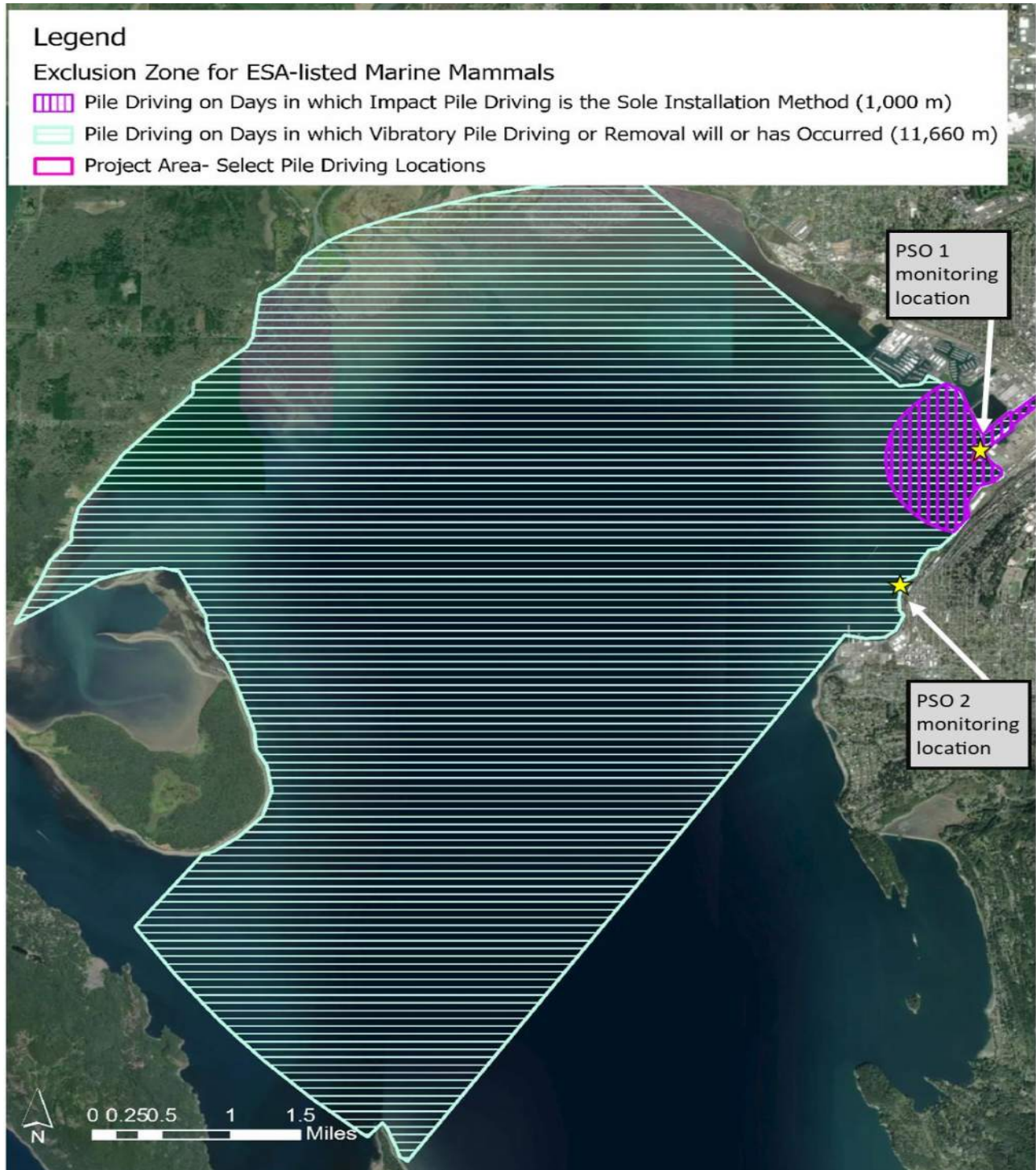
Species Observed within Level B Zone	Daily Total Number of Level B Takes	Project Total Level B Takes
Harbor seal (<i>Phoca vitulina</i>)	26*	113

*Some sightings were likely to be the same harbor seals seen throughout the day.

Incorporated BMPs and Mitigation

No distressed or injured marine mammals or fish were observed as a result of the in-water pile removal and no Level A takes occurred during the day’s monitoring events. To aid in the prevention of harming these species, soft starts during pile removal were implemented and oil and debris containment booms were deployed surrounding the project site.

Figure 1. PSO monitoring locations shown on the ESA-listed marine mammal exclusion zone figure from the BST Marine Infrastructure Maintenance and Rehabilitation IHA (credit: Moffatt & Nichol).



Appendix A. Monitoring Data Sheets



Level B Take Daily Total: 26 harbor seals
 Vibratory Pile Removal Daily Total: 90 minutes
 (3) 24-inch steel piles removed, 3 partially removed

Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: Sheet of for this day

Monitor(s): Monitoring Location:

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	7:45	Clear	Harbor Seal	1	300m E	Pre-monitoring/surface swimming
2	7:50	Clear	Harbor Seal	2	200m & 150m NE	Pre-monitoring/surface swimming
3	7:53	Clear	Harbor Seal	1	100m NE	Pre-monitoring/surface swimming
4	8:18	Clear	Harbor Seal	2	400m NW	No vibratory work/surface swim
5	9:06	Clear, sunny	Harbor Seal	1	100m NE	Vibratory work/surface swimming
6	9:08	Clear, sunny	Harbor Seal	1	200m NW	Vibratory work/surface swimming
7	9:09	Clear, sunny	Harbor Seal	1	200m N	Vibratory work/surface swimming
8	9:25	Clear, sunny	Harbor Seal	1	300m NE	Vibratory work/surface swimming
9	9:28	Clear, sunny	Harbor Seal	1	70m NE	Vibratory work/surface swimming
10	9:33	Clear, sunny	Harbor Seal	1	200m N	Vibratory work/surface swimming
11	9:39	Clear, sunny	Harbor Seals	2	250 NE	No vibratory work/surface swimming
12	10:05	Clear, sunny	Harbor Seals	2	150m NE	No vibratory work/surface swimming
13	11:02	Clear, sunny	Harbor Seal	1	200m NE	No vibratory work/surface swimming
14	11:38	Clear, sunny	Harbor Seal	1	150m NE	No vibratory work/surface swimming

*B *B *B *B *B *B

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number
 *B = Level B Takes



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: Sheet of for this day
 Monitor(s): Monitoring Location:

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
15	12:22	Clear, sunny	Harbor Seal	1	70m NE	No vibratory work/popped up
16	12:41	Clear, sunny	Harbor Seals	2	90m NE, 210m NE	Vibratory Work/bobbing
17	14:36	Clear, sunny	Harbor Seal	2	200m NE, 300 NE	Vibratory work/surface swimming
18	14:57	Clear, sunny	Harbor Seal	1	250m NE	Vibratory work/bobbing
19	15:00	Clear, sunny	Harbor Seals	2	70m NE, 350m NE	Vibratory work/surface swimming
20	15:18	Clear, sunny	Harbor Seal	1	120 NE	Post-monitoring/bobbing

*B *B *B *B

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number
 *B = Level B Takes



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 08.30.24 Sheet 1 of 4 for this day

Monitor(s): Madalyn Walker Monitoring Location: Boulevard Park (PSO 2 Location)

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	08:04	sunny, 57F, 1 kt NE	Harbor seal	1	2159 m SW of work	No active pile removal, foraging/swimming
2	08:04	sunny, 57F, 1 kt NE	Harbor seal	1	1950 m SW of work	No active pile removal, foraging/swimming
3	08:12	sunny, 57F, 1 kt NE	Harbor seal	1	2089 m SW of work	No active pile removal, foraging/swimming
4	08:13	sunny, 57F, 1 kt NE	Harbor seal	1	1107 m S of work	No active pile removal, foraging/swimming
5	08:21	sunny, 57F, 1 kt NE	Harbor seal	1	2100 m SW of work	No active pile removal, foraging/swimming
6	08:22	sunny, 57F, 1 kt NE	Harbor seal	1	1079 m S of work	No active pile removal, foraging/swimming
7	08:24	sunny, 57F, 1 kt NE	Harbor seal	1	2256 m SW of work	No active pile removal, foraging/swimming
8	08:24	sunny, 57F, 1 kt NE	Harbor seal	1	3099 m SW of work	No active pile removal, foraging/swimming
9	08:25	sunny, 57F, 1 kt NE	Harbor seal	1	1983 m SW of work	No active pile removal, foraging/swimming
10	08:25	sunny, 57F, 1 kt NE	Harbor seal	1	977 m W of work	No active pile removal, foraging/swimming
11	08:28	sunny, 57F, 1 kt NE	Harbor seal	1	2375 m SW of work	No active pile removal, foraging/swimming
12	08:28	sunny, 57F, 1 kt NE	Harbor seal	1	2102 m SSW of work	No active pile removal, foraging/swimming
13	08:29	sunny, 57F, 1 kt NE	Harbor seal	1	1271 m W of work	No active pile removal, foraging/swimming
14	08:34	sunny, 57F, 1 kt NE	Harbor seal	1	2205 m S of work	No active pile removal, foraging/swimming

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

*B = Level B Takes



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 08.30.24 Sheet 2 of 4 for this day
 Monitor(s): Madalyn Walker Monitoring Location: Boulevard Park

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
15	08:40	sunny, 60F, 1 kt NE	Harbor seal	1	1877 m SW of work	No active pile removal, foraging/swimming
16	08:41	sunny, 60F, 1 kt NE	Harbor seal	1	2383 m SW of work	No active pile removal, foraging/swimming
17	08:42	sunny, 60F, 1 kt NE	Harbor seal	1	1294 m W of work	No active pile removal, foraging/swimming
18	08:42	sunny, 60F, 1 kt NE	Harbor seal	1	516 m SW of work	No active pile removal, foraging/swimming
19	08:47	sunny, 60F, 1 kt NE	Harbor seal	1	3827 m W of work	No active pile removal, foraging/swimming
20	08:50	sunny, 60F, 1 kt NE	Harbor seal	1	1776 m S of work	No active pile removal, foraging/swimming
21	08:51	sunny, 60F, 1 kt NE	Harbor seal	1	2161 m S of work	No active pile removal, foraging/swimming
22	08:51	sunny, 60F, 1 kt NE	Harbor seal	1	1717 m SW of work	No active pile removal, foraging/swimming
23	08:58	sunny, 60F, 1 kt NE	Harbor seal	2	1420 m SW of work	No active pile removal, foraging/swimming
24	09:03	sunny, 60F, 1 kt NE	Harbor seal	1	2500 m SW of work	No active pile removal, foraging/swimming
25	09:03	sunny, 60F, 1 kt NE	Harbor seal	1	1465 m W of work	No active pile removal, foraging/swimming
26	09:04	sunny, 60F, 1 kt NE	Harbor seal	1	1356 m WNW of work	No active pile removal, foraging/swimming
27	09:08	sunny, 60F, 1 kt NE	Harbor seal	1	1674 m SSW of work	Active vibrate pile removal, foraging/swimming
28	09:10	sunny, 60F, 1 kt NE	Harbor seal	1	774 m S of work	Active vibrate pile removal, foraging/swimming

*B *B

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number
 *B = Level B Takes



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 08.30.24 Sheet 3 of 4 for this day
 Monitor(s): Madalyn Walker Monitoring Location: Boulevard Park

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
*B 29	09:11	sunny, 65F, 2 kt NW	Harbor seal	1	1205 m SW of work	Active vibe pile removal, foraging/swimming
*B 30	09:13	sunny, 65F, 2 kt NW	Harbor seal	1	1700 m WSW of work	Active vibe pile removal, foraging/swimming
*B 31	09:25	sunny, 65F, 2 kt NW	Harbor seal	1	1640 m SW of work	Active vibe pile removal, foraging/swimming
*B 32	09:30	sunny, 65F, 2 kt NW	Harbor seal	1	1700 m SSW of work	Active vibe pile removal, foraging/swimming
*B 33	09:33	sunny, 65F, 2 kt NW	Harbor seal	1	1144 m W of work	Active vibe pile removal, foraging/swimming
34	09:44	sunny, 65F, 2 kt NW	Harbor seal	1	1900 m W of work	Active vibe pile removal, looking/swimming
35	09:45	sunny, 65F, 2 kt NW	Harbor seal	1	2580 m SW of work	Active vibe pile removal, looking/swimming
36	09:45	sunny, 65F, 2 kt NW	Harbor seal	1	2682 m SW of work	Active vibe pile removal, looking/swimming
37	09:51	sunny, 65F, 2 kt NW	Harbor seal	1	1925 m SW of work	Active vibe pile removal, looking/swimming
38	10:57	sunny, 65F, 2 kt NW	Harbor seal	1	1720 m SW of work	Active vibe pile removal, looking/swimming
39	11:03	sunny, 65F, 2 kt NW	Harbor seal	1	1630 m S of work	No active pile removal, foraging/swimming
*B 40	11:13	sunny, 65F, 2 kt NW	Harbor seal	1	1568 m S of work	Active vibe pile removal, foraging/swimming
41	11:30	sunny, 67F, 3 kt NW	Harbor seal	1	1811 m S of work	No active pile removal, foraging/swimming
42	12:34	sunny, 68F, 4 kt NW	Harbor seal	1	1688 m S of work	No active pile removal, foraging/swimming

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

*B = Level B Takes



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 08.30.24 Sheet 4 of 4 for this day

Monitor(s): Madalyn Walker Monitoring Location: Boulevard Park

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
43	14:29	sunny, 70F, slight breeze	Harbor seal	1	2047 m S of work	Active vibe pile removal, looking/foraging
44	14:30	sunny, 70F, slight breeze	Harbor seal	1	1889 m SW of work	Active vibe pile removal, looking/foraging
45	14:30	sunny, 70F, slight breeze	Harbor seal	1	2105 m SW of work	Active vibe pile removal, looking/foraging
46	14:56	sunny, 70F, slight breeze	Harbor seal	1	1648 m SSW of work	Active vibe pile removal, looking/foraging
47	14:56	sunny, 70F, slight breeze	Harbor seal	1	1795 m SW of work	Active vibe pile removal, looking/foraging

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number
 *B = Level B Takes

**Bellingham Shipping Terminal
Marine Infrastructure Maintenance & Rehabilitation**

Bellingham Bay, Bellingham, WA

Marine Mammal Monitoring

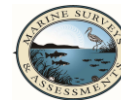
**DAILY MONITORING REPORT FOR:
Tuesday, 03 September 2024**

**Reference Project #s:
NMFS # WCRO-2022-00335
USFWS # 2022-0013489
USACE # NWS-2022-141, NWS-2022-147**

Compiled by: Madalyn Walker



**MARINE SURVEYS & ASSESSMENTS
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Activity Overview

Today’s monitoring activities aimed to protect marine mammals and ensure compliance with permit requirements to avoid serious injury or behavioral disturbance to marine mammals within the Bellingham Shipping Terminal (BST) infrastructure maintenance and repair action area. The protected species observers (PSOs), comprising scientists from Marine Surveys & Assessments (MSA), monitored the waters of Bellingham Bay at two locations (Figure 1) surrounding the project area before, during, and after construction activities occurred.

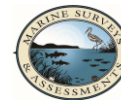
Pile driving activities associated with this project may result in incidental take of marine mammals through increased in-air and in-water noise levels. Level A take has the potential to injure or cause permanent threshold shifts, and Level B take may cause behavioral shifts in species. Four species have limited incidental takes that have been authorized for the duration of this project (Table 1); harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), Stellar sea lion (*Eumetopias jubatus*), and harbor porpoise (*Phocoena phocoena*).

Table 1. Authorized Incidental Take Allowed for each Species.

Species	Authorized Level A harassment	Authorized Level B harassment
Harbor seal	264	2,029
California sea lion	0	87
Stellar sea lion	0	87
Harbor porpoise	0	261

Marine mammal monitoring started at 06:30, and after 30 minutes of continuous monitoring in which no marine mammals were observed within the exclusion zones, American Construction was informed that they could start work for the day. Monitoring continued off and on throughout the day as American Construction used a crane-mounted vibratory hammer to remove 24-inch steel piles from 9:21 PST until 14:08 PST. Approximately 80 minutes of vibratory pile removal occurred during this monitoring event with three (3) 24-inch steel piles being fully removed.

To avoid Level A take during vibratory pile removal, a 10-meter shutdown zone was utilized for harbor seals, a 20-meter shutdown zone for harbor porpoises, and a 10-meter shutdown zone for sea lions. Any of the above species observed within the 11,660-meter monitoring zone during active pile removal was considered a Level B take (IHA Figure 14). An 11,660-meter exclusion zone was utilized to monitor for ESA-listed marine mammals to avoid Level A and Level B take on these species.



No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded. No Level A takes have been associated with the project to date. **Level B takes for the project to date consist of 1 Stellar sea lion and 117 harbor seals.**

No distressed or dying fish were observed during this monitoring event.

Monitoring Crew

Last Name	First Name	Affiliation	Role
DeCaterina	Bryan	MSA	Lead PSO
Walker	Madalyn	MSA	PSO

Monitoring Methods

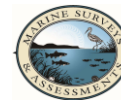
Prior to work starting for the day, PSOs communicate with the contractor, American Construction, regarding the pile diameter and type of construction (i.e., impact hammer pile installation, vibratory pile installation, or vibratory pile removal) work that will occur. This informs the PSOs of the exclusion (i.e., shutdown) zone that will be used for the day and determines where the PSOs will be stationed for monitoring.

The PSOs arrive onsite at the pre-determined monitoring stations and begin a 30-minute continuous monitoring cycle. If no species of concern enter or come near to their respective exclusion zones, then the onsite construction supervisor is informed that work may begin for the day. The PSOs monitor continuously during all pile installation and removal. Monitoring continues for 30 minutes after work has ceased to ensure no species of concern were within the Level A and Level B monitoring zones. If marine mammals enter or have been observed near the exclusion zone, during or within 30 minutes of starting pile driving, the lead PSO will notify the onsite construction supervisor, and work must either stop or not begin until the animal(s) have moved outside of the respective zone.

Equipment utilized by PSOs during monitoring included the following: binoculars, spotting scopes, range finders, GPS units, compasses, phones, Whale Alert app, and data sheets to record when and where species of concern were observed.

Monitoring Locations

Two PSOs were stationed at pre-determined locations that allowed for full visibility of the entire exclusion zone between the two of them. Monitoring locations can be seen in Figure 1. The lead PSO was located adjacent to the in-water construction zone, monitoring the narrower Level A take exclusion zone of the harbor seal, sea lions, and harbor porpoise and allowing for



quick communication with the onsite construction supervisor. When impact driving occurs, this PSO will be a USFWS-certified marbled murrelet monitor. The second PSO was stationed farther away to the south in Boulevard Park (Figure 1) to monitor the broader exclusion zone for any ESA-listed marine mammals and for any Level B take of the above-mentioned species.

Weather Conditions during Monitoring

The weather conditions consisted of overcast skies and a consistent wind speed of 6 knots during the morning before transitioning to sunny clear skies with a variable wind speed of 4-8 knots during the afternoon. A Beaufort scale of 1-2 was observed on Bellingham Bay during monitoring. Visibility was < 7 miles. Temperature throughout the day ranged from 57°F to 61°F.

Daily Monitoring Summary

Marine mammals observed at the two monitoring stations during this monitoring event are listed in the monitoring log data sheets (Appendix A). No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded. No distressed or dying fish were observed during this monitoring event.

Level A Take

No Level A takes were recorded during this monitoring event.

Level B Take

Level B take was recorded for harbor seals (Table 2); see monitoring data sheets for the full take information (Appendix A).

Table 2. Summary of Level B Take

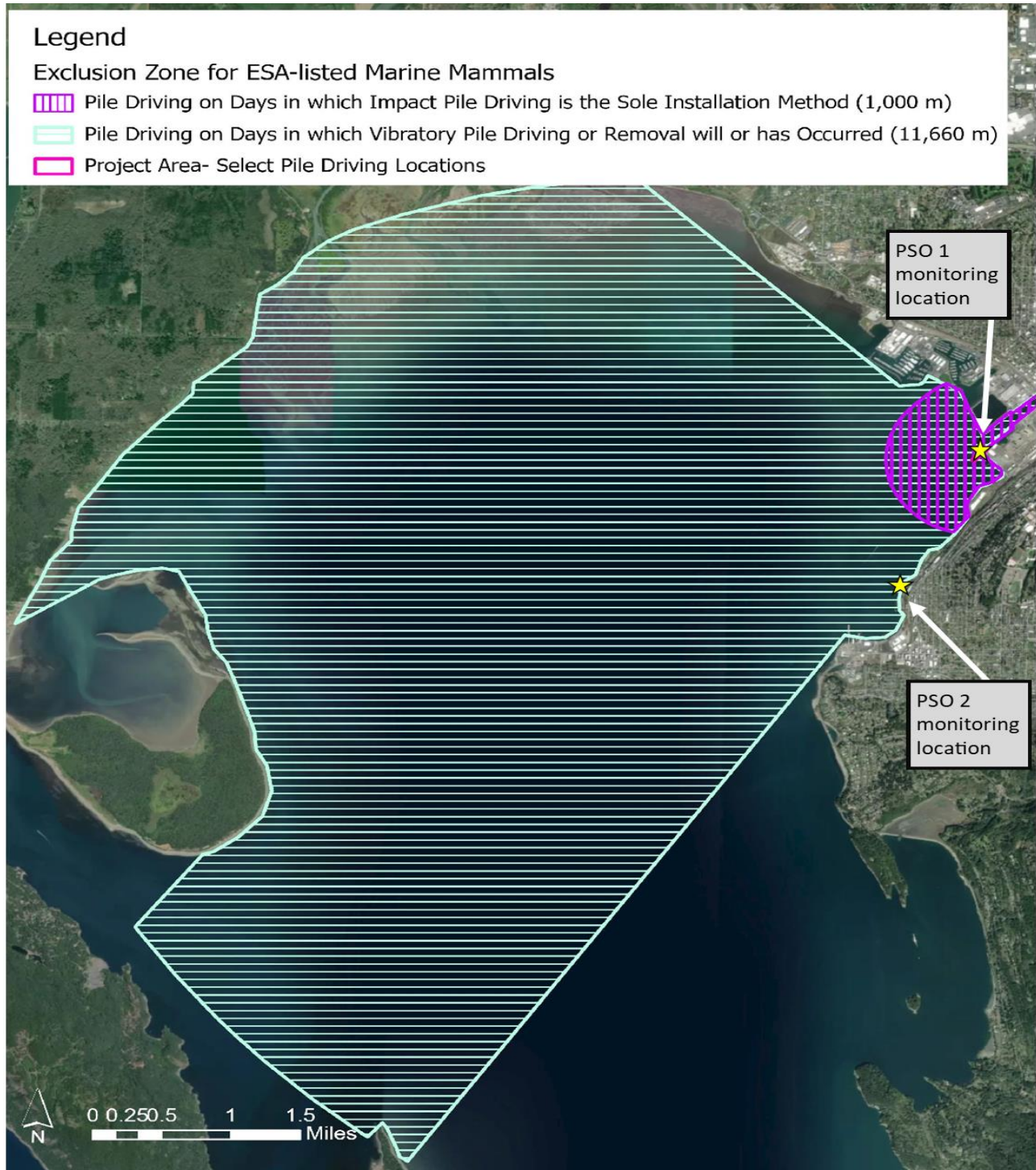
Species Observed within Level B Zone	Daily Total Number of Level B Takes	Project Total Level B Takes
Harbor seal (<i>Phoca vitulina</i>)	4*	117

**Some sightings were likely to be the same harbor seals seen throughout the day.*

Incorporated BMPs and Mitigation

No distressed or injured marine mammals or fish were observed as a result of the in-water pile removal and no Level A takes occurred during the day's monitoring events. To aid in the prevention of harming these species, soft starts during pile removal were implemented and oil and debris containment booms were deployed surrounding the project site.

Figure 1. PSO monitoring locations shown on the ESA-listed marine mammal exclusion zone figure from the BST Marine Infrastructure Maintenance and Rehabilitation IHA (credit: Moffatt & Nichol).



Appendix A. Monitoring Data Sheets

Level B Take Daily Total: 4 harbor seals
 Vibratory Pile Removal Daily Total: 80 minutes
 (3) 24-inch steel piles removed



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: _____ Sheet _____ of _____ for this day
 Monitor(s): _____ Monitoring Location: _____

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior

*B
 *B

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number
 *B = Level B Takes

**Bellingham Shipping Terminal
Marine Infrastructure Maintenance & Rehabilitation**

Bellingham Bay, Bellingham, WA

Marine Mammal Monitoring

**DAILY MONITORING REPORT FOR:
Wednesday, 04 September 2024**

**Reference Project #s:
NMFS # WCRO-2022-00335
USFWS # 2022-0013489
USACE # NWS-2022-141, NWS-2022-147**

Compiled by: Madalyn Walker



**MARINE SURVEYS & ASSESSMENTS
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Activity Overview

Today's monitoring activities aimed to protect marine mammals and ensure compliance with permit requirements to avoid serious injury or behavioral disturbance to marine mammals within the Bellingham Shipping Terminal (BST) infrastructure maintenance and repair action area. The protected species observers (PSOs), comprising scientists from Marine Surveys & Assessments (MSA), monitored the waters of Bellingham Bay at two locations (Figure 1) surrounding the project area before, during, and after construction activities occurred.

Pile driving activities associated with this project may result in incidental take of marine mammals through increased in-air and in-water noise levels. Level A take has the potential to injure or cause permanent threshold shifts, and Level B take may cause behavioral shifts in species. Four species have limited incidental takes that have been authorized for the duration of this project (Table 1); harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), Stellar sea lion (*Eumetopias jubatus*), and harbor porpoise (*Phocoena phocoena*).

Table 1. Authorized Incidental Take Allowed for each Species.

Species	Authorized Level A harassment	Authorized Level B harassment
Harbor seal	264	2,029
California sea lion	0	87
Stellar sea lion	0	87
Harbor porpoise	0	261

Marine mammal monitoring started at 06:30, and after 30 minutes of continuous monitoring in which no marine mammals were observed within the exclusion zones, American Construction was informed that they could start work for the day. Monitoring continued off and on throughout the day as American Construction used a crane-mounted vibratory hammer to remove 24-inch steel piles from 07:44 PST until 16:06 PST. Approximately 103 minutes of vibratory pile removal occurred during this monitoring event with three (3) 24-inch steel piles being fully removed and (2) 24-inch steel piles partially removed.

To avoid Level A take during vibratory pile removal, a 10-meter shutdown zone was utilized for harbor seals, a 20-meter shutdown zone for harbor porpoises, and a 10-meter shutdown zone for sea lions. Any of the above species observed within the 11,660-meter monitoring zone during active pile removal was considered a Level B take (IHA Figure 14). An 11,660-meter exclusion zone was utilized to monitor for ESA-listed marine mammals to avoid Level A and Level B take on these species.



No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded. No Level A takes have been associated with the project to date. **Level B takes for the project to date consist of 1 Stellar sea lion and 141 harbor seals.**

No distressed or dying fish were observed during this monitoring event.

Monitoring Crew

Last Name	First Name	Affiliation	Role
Walker	Madalyn	MSA	Lead PSO
McClurg	Kimberly	MSA	PSO

Monitoring Methods

Prior to work starting for the day, PSOs communicate with the contractor, American Construction, regarding the pile diameter and type of construction (i.e., impact hammer pile installation, vibratory pile installation, or vibratory pile removal) work that will occur. This informs the PSOs of the exclusion (i.e., shutdown) zone that will be used for the day and determines where the PSOs will be stationed for monitoring.

The PSOs arrive onsite at the pre-determined monitoring stations and begin a 30-minute continuous monitoring cycle. If no species of concern enter or come near to their respective exclusion zones, then the onsite construction supervisor is informed that work may begin for the day. The PSOs monitor continuously during all pile installation and removal. Monitoring continues for 30 minutes after work has ceased to ensure no species of concern were within the Level A and Level B monitoring zones. If marine mammals enter or have been observed near the exclusion zone, during or within 30 minutes of starting pile driving, the lead PSO will notify the onsite construction supervisor, and work must either stop or not begin until the animal(s) have moved outside of the respective zone.

Equipment utilized by PSOs during monitoring included the following: binoculars, spotting scopes, range finders, GPS units, compasses, phones, Whale Alert app, and data sheets to record when and where species of concern were observed.

Monitoring Locations

Two PSOs were stationed at pre-determined locations that allowed for full visibility of the entire exclusion zone between the two of them. Monitoring locations can be seen in Figure 1. The lead PSO was located adjacent to the in-water construction zone, monitoring the narrower Level A take exclusion zone of the harbor seal, sea lions, and harbor porpoise and allowing for



quick communication with the onsite construction supervisor. When impact driving occurs, this PSO will be a USFWS-certified marbled murrelet monitor. The second PSO was stationed farther away to the south in Boulevard Park (Figure 1) to monitor the broader exclusion zone for any ESA-listed marine mammals and for any Level B take of the above-mentioned species.

Weather Conditions during Monitoring

During the first two hours of monitoring, there was a marine layer residing in the upper troposphere, but monitoring visibility was not hindered. This marine layer burned off by 08:00 PST. Weather conditions for the rest of the day were sunny with a consistent breeze between 4-7 knots. A Beaufort scale of 1-2 was observed on Bellingham Bay during monitoring. Visibility was < 7 miles. Temperature throughout the day ranged from 55°F to 70°F.

Daily Monitoring Summary

Marine mammals observed at the two monitoring stations during this monitoring event are listed in the monitoring log data sheets (Appendix A). No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded. No distressed or dying fish were observed during this monitoring event.

Level A Take

No Level A takes were recorded during this monitoring event.

Level B Take

Level B take was recorded for harbor seals (Table 2); see monitoring data sheets for the full take information (Appendix A).

Table 2. Summary of Level B Take

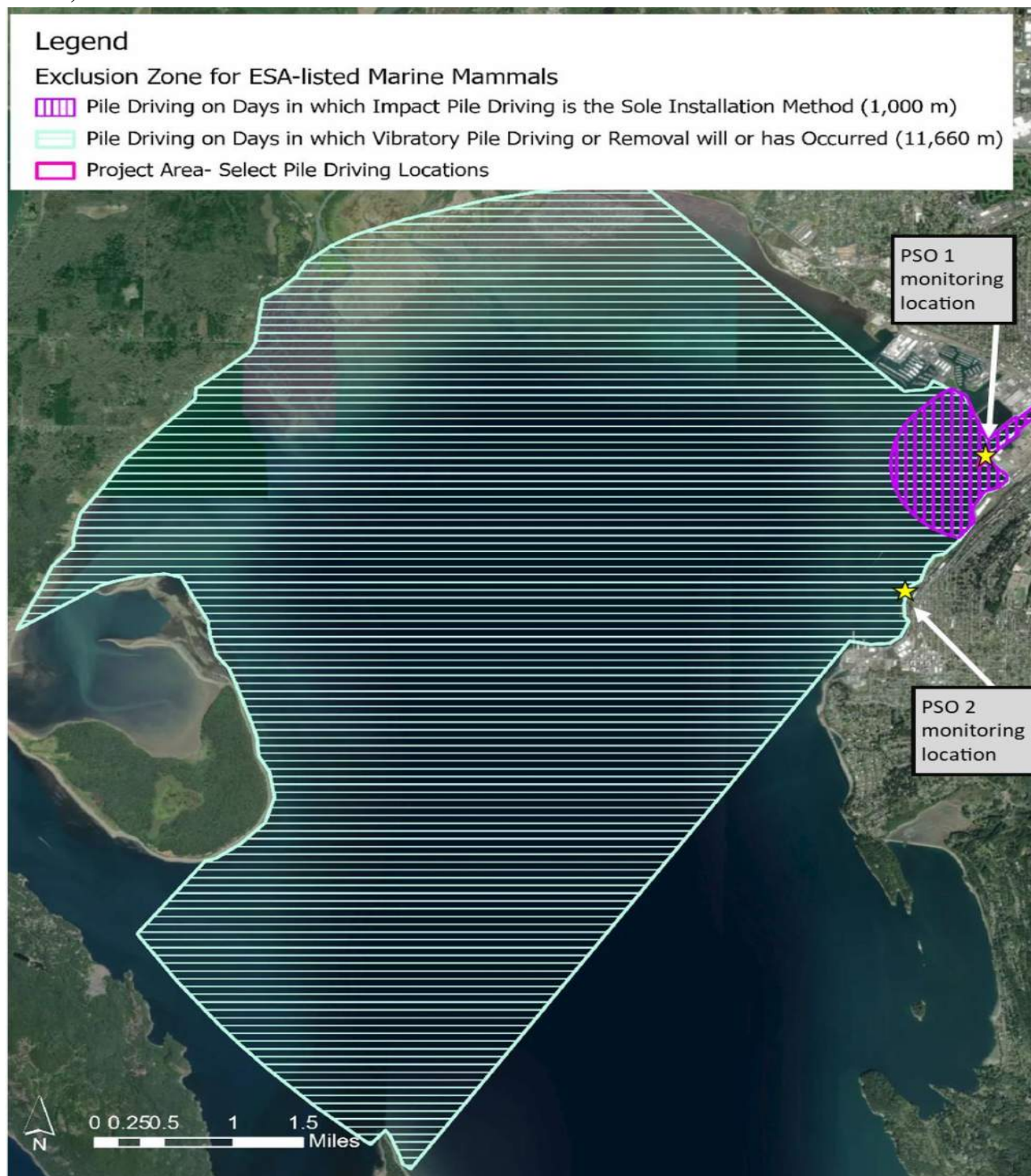
Species Observed within Level B Zone	Daily Total Number of Level B Takes	Project Total Level B Takes
Harbor seal (<i>Phoca vitulina</i>)	24*	141

*Some sightings were likely to be the same harbor seals seen throughout the day.

Incorporated BMPs and Mitigation

No distressed or injured marine mammals or fish were observed as a result of the in-water pile removal and no Level A takes occurred during the day’s monitoring events. To aid in the prevention of harming these species, soft starts during pile removal were implemented and oil and debris containment booms were deployed surrounding the project site.

Figure 1. PSO monitoring locations shown on the ESA-listed marine mammal exclusion zone figure from the BST Marine Infrastructure Maintenance and Rehabilitation IHA (credit: Moffatt & Nichol).



Appendix A. Monitoring Data Sheets



Level B Take Daily Total: 24 harbor seals
 Vibratory Pile Removal Daily Total: 103 minutes
 (3) 24-inch steel piles removed, 2 partially removed

Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: Sheet of for this day
 Monitor(s): Monitoring Location:

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	06:46	Light fog, 55F	Harbor seal	1	869m WNW of work	No active vibratory work, foraging
2	06:49	Beaufort 0-1	Harbor seal	1	186 m NW of work	No active vibratory work, foraging
3	06:50	Light fog, 2kt	Harbor seal	1	1033 m W of work	No active vibratory work, foraging
4	06:52	Partial cloud	Harbor seal	1	715 m WSW	No active vibratory work, foraging
5	06:52	Partial cloud	Harbor seal	2	950 m SW	No active vibratory work, foraging
6	07:00	Partial cloud	Harbor seal	1	324 m WNW	No active vibratory work, foraging
7	07:06	Partial cloud	Harbor seal	2	628 m NW	No active vibratory work, foraging
8	07:10	Partial cloud	Harbor seal	1	107 m N of work	No active vibratory work, foraging
9	07:10	Partial cloud	Harbor seal	1	117 m WSW	No active vibratory work, foraging
10	07:20	Sunny	Harbor seal	1	979 m SSW	No active vibratory work, foraging
11	07:24	Sunny	Harbor seal	1	127 m W of work	No active vibratory work, foraging
12	07:24	Sunny	Harbor seal	1	81 m W of work	No active vibratory work, foraging
13	07:58	Sunny, lite fog	Harbor seal	1	288 m S of work	Active vbe removal, foraging
14	08:49	Sunny, lite fog	Harbor seal	10	145 m W of work	No active vbe, herd swimming SW

*B

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

*B = Level B Takes



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: Sheet of for this day
 Monitor(s): Monitoring Location:

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
*B 15	09:13	Sun, 3kts NW	Harbor seal	1	529 m NW of work	No active vibratory work, eating
16	09:34	Sunny	Harbor seal	1	110 m NW of work	No active vibratory work, foraging
17	09:45	Sunny	Harbor seal	1	493 m W of work	No active vibratory work, foraging
18	09:58	Sun, 4kts NW	Harbor seal	1	150 m W of work	No active vibratory work, foraging
19	10:04	Sunny	Harbor seal	1	221 m SW of work	No active vibratory work, looking
20	10:10	Sun, breeze	Harbor seal	1	214 m S of work	No active vibratory work, foraging
*B 21	10:18	Sunny, 62F	Harbor seal	1	93 m W of work	Active vibe removal, swimming
*B 22	10:18	Sunny	Harbor seal	1	62 m W of work	Active vibe removal, swimming
*B 23	10:19	Sunny	Harbor seal	9	257 m NNW	Active vibe removal, swimming SW
*B 24	10:27	Sunny	Harbor seal	1	288 m S of work	Active vibe removal, swimming SW
25	11:23	Sun, 4kts W	Harbor seal	1	88 m N or work	No active vibratory work, foraging
*B 26	11:40	Sun, Beau. 2	Harbor seal	1	683 m WSW	Active vibe removal, looking
27	13:22	Sun, 68F, 5kts	Harbor seal	1	70 m W of work	No active vibratory work, looking
*B 28	14:06	Sun, 4kts	Harbor seal	1	99 m W of work	Active vibe removal, looking

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

*B = Level B Takes



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: Sheet of for this day

Monitor(s): Monitoring Location:

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
29	14:24	Sun, breeze	Harbor seal	1	62 m NW of work	Active vibe removal, looking
30	14:38	Sun, breeze	Harbor seal	1	87 m W of work	No active vibratory work, swimming
31	14:51	Sun, 71F, wind	Harbor seal	1	353 m NNW	No active vibratory work, foraging
32	15:22	Sun, breeze	Harbor seal	1	67 m W of work	No active vibratory work, foraging
33	15:23	Sun, 6 kts S	Harbor seal	1	156 m SW off work	No active vibratory work, foraging
34	15:40	Sun, breeze	Harbor seal	1	173 m S of work	Active vibe removal, looking
35	15:50	Sun, 70F	Harbor seal	1	95 m NW of work	Active vibe removal, looking
36	15:50	Sun, breeze	Harbor seal	1	118 m NW of work	Active vibe removal, looking
37	15:50	Sun, breeze	Harbor seal	1	65 m W of work	Active vibe removal, foraging
38	16:22	Sun, breeze	Harbor seal	1	112 m SW of work	No active vibratory work, foraging
39	16:28	Sun, breeze	Harbor seal	1	139 m W of work	No active vibratory work, foraging

*B

*B

*B

*B

*B

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number
 *B = Level B Takes



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 09/04/2024 Sheet 1 of 1 for this day

Monitor(s): Kimberly McClurg Monitoring Location: Boulevard Park

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	07:05	Calm, low fog	Harbor Seal	1	25 m to north	pre-monitor / swimming
2	10:00	calm, sunny	Harbor Seal	1	50 m to south	between removals / swimming around fishing net
3	10:15	calm, sunny	Harbor Seal	1	100 m to west	between removals / swimming south
4	10:19	calm, sunny	Harbor Seal	2	50 m to south	vibratory removal / swimming around fishing net
5	11:52	sunny, light wind	Harbor Seal	1	60 m to west	vibratory removal / swimming north
6	14:09	sunny, light wind	Harbor Seal	1	50 m to west	vibratory removal / swimming north

*B *B *B

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number
 *B = Level B Takes

**Bellingham Shipping Terminal
Marine Infrastructure Maintenance & Rehabilitation**

Bellingham Bay, Bellingham, WA

Marine Mammal Monitoring

**DAILY MONITORING REPORT FOR:
Thursday, 5 September 2024**

**Reference Project #s:
NMFS # WCRO-2022-00335
USFWS # 2022-0013489
USACE # NWS-2022-141, NWS-2022-147**

Compiled by: Raquel Corniuk



**MARINE SURVEYS & ASSESSMENTS
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Activity Overview

Today’s monitoring activities aimed to protect marine mammals and ensure compliance with permit requirements to avoid serious injury or behavioral disturbance to marine mammals within the Bellingham Shipping Terminal (BST) infrastructure maintenance and repair action area. The protected species observers (PSOs), comprising scientists from Marine Surveys & Assessments (MSA), monitored the waters of Bellingham Bay at two locations (Figure 1) surrounding the project area before, during, and after construction activities occurred.

Pile driving activities associated with this project may result in incidental take of marine mammals through increased in-air and in-water noise levels. Level A take has the potential to injure or cause permanent threshold shifts, and Level B take may cause behavioral shifts in species. Four species have limited incidental takes that have been authorized for the duration of this project (Table 1); harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), Stellar sea lion (*Eumetopias jubatus*), and harbor porpoise (*Phocoena phocoena*).

Table 1. Authorized Incidental Take Allowed for each Species.

Species	Authorized Level A harassment	Authorized Level B harassment
Harbor seal	264	2,029
California sea lion	0	87
Stellar sea lion	0	87
Harbor porpoise	0	261

Marine mammal monitoring started at 06:30, and after 30 minutes of continuous monitoring in which no marine mammals were observed within the exclusion zones, American Construction was informed that they could start work for the day. Monitoring continued off and on throughout the day as American Construction used a crane-mounted vibratory hammer to remove 24-inch steel piles from 7:46 PST until 11:11 PST. Approximately 74 minutes of vibratory pile removal occurred during this monitoring event with two (2) 24-inch steel piles being fully removed and one (1) 24-inch steel piles being partially removed.

To avoid Level A take during vibratory pile removal, a 10-meter shutdown zone was utilized for harbor seals, a 20-meter shutdown zone for harbor porpoises, and a 10-meter shutdown zone for sea lions. Any of the above species observed within the 11,660-meter monitoring zone during active pile removal was considered a Level B take (IHA Figure 14). An 11,660-meter exclusion zone was utilized to monitor for ESA-listed marine mammals to avoid Level A and Level B take on these species.



No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded. No Level A takes have been associated with the project to date. **Level B takes for the project to date consist of 1 Stellar sea lion and 154 harbor seals.**

No distressed or dying fish were observed during this monitoring event.

Monitoring Crew

Last Name	First Name	Affiliation	Role
McClurg	Kimberly	MSA	Lead PSO
Corniuk	Raquel	MSA	PSO

Monitoring Methods

Prior to work starting for the day, PSOs communicate with the contractor, American Construction, regarding the pile diameter and type of construction (i.e., impact hammer pile installation, vibratory pile installation, or vibratory pile removal) work that will occur. This informs the PSOs of the exclusion (i.e., shutdown) zone that will be used for the day and determines where the PSOs will be stationed for monitoring.

The PSOs arrive onsite at the pre-determined monitoring stations and begin a 30-minute continuous monitoring cycle. If no species of concern enter or come near to their respective exclusion zones, then the onsite construction supervisor is informed that work may begin for the day. The PSOs monitor continuously during all pile installation and removal. Monitoring continues for 30 minutes after work has ceased to ensure no species of concern were within the Level A and Level B monitoring zones. If marine mammals enter or have been observed near the exclusion zone, during or within 30 minutes of starting pile driving, the lead PSO will notify the onsite construction supervisor, and work must either stop or not begin until the animal(s) have moved outside of the respective zone.

Equipment utilized by PSOs during monitoring included the following: binoculars, spotting scopes, range finders, GPS units, compasses, phones, Whale Alert app, and data sheets to record when and where species of concern were observed.

Monitoring Locations

Two PSOs were stationed at pre-determined locations that allowed for full visibility of the entire exclusion zone between the two of them. Monitoring locations can be seen in Figure 1. The lead PSO was located adjacent to the in-water construction zone, monitoring the narrower



Level A take exclusion zone of the harbor seal, sea lions, and harbor porpoise and allowing for quick communication with the onsite construction supervisor. When impact driving occurs, this PSO will be a USFWS-certified marbled murrelet monitor. The second PSO was stationed farther away to the south in Boulevard Park (Figure 1) to monitor the broader exclusion zone for any ESA-listed marine mammals and for any Level B take of the above-mentioned species.

Weather Conditions during Monitoring

The weather conditions for the morning consisted of clear skies and no wind and, after a few hours, that transitioned to sunny clear skies with minimal wind for the remainder of the day. Visibility was < 7 miles. A Beaufort scale of 1 was observed on Bellingham Bay during monitoring with wind speeds starting at 0 knots in the morning and picking up to 2 knots by the afternoon. The temperature throughout the day ranged from 55°F to 80°F.

Daily Monitoring Summary

Marine mammals observed at the two monitoring stations during this monitoring event are listed in the monitoring log data sheets (Appendix A). No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded. No distressed or dying fish were observed during this monitoring event.

Level A Take

No Level A takes were recorded during this monitoring event.

Level B Take

Level B take was recorded for harbor seals (Table 2); see monitoring data sheets for the full take information (Appendix A).

Table 2. Summary of Level B Take

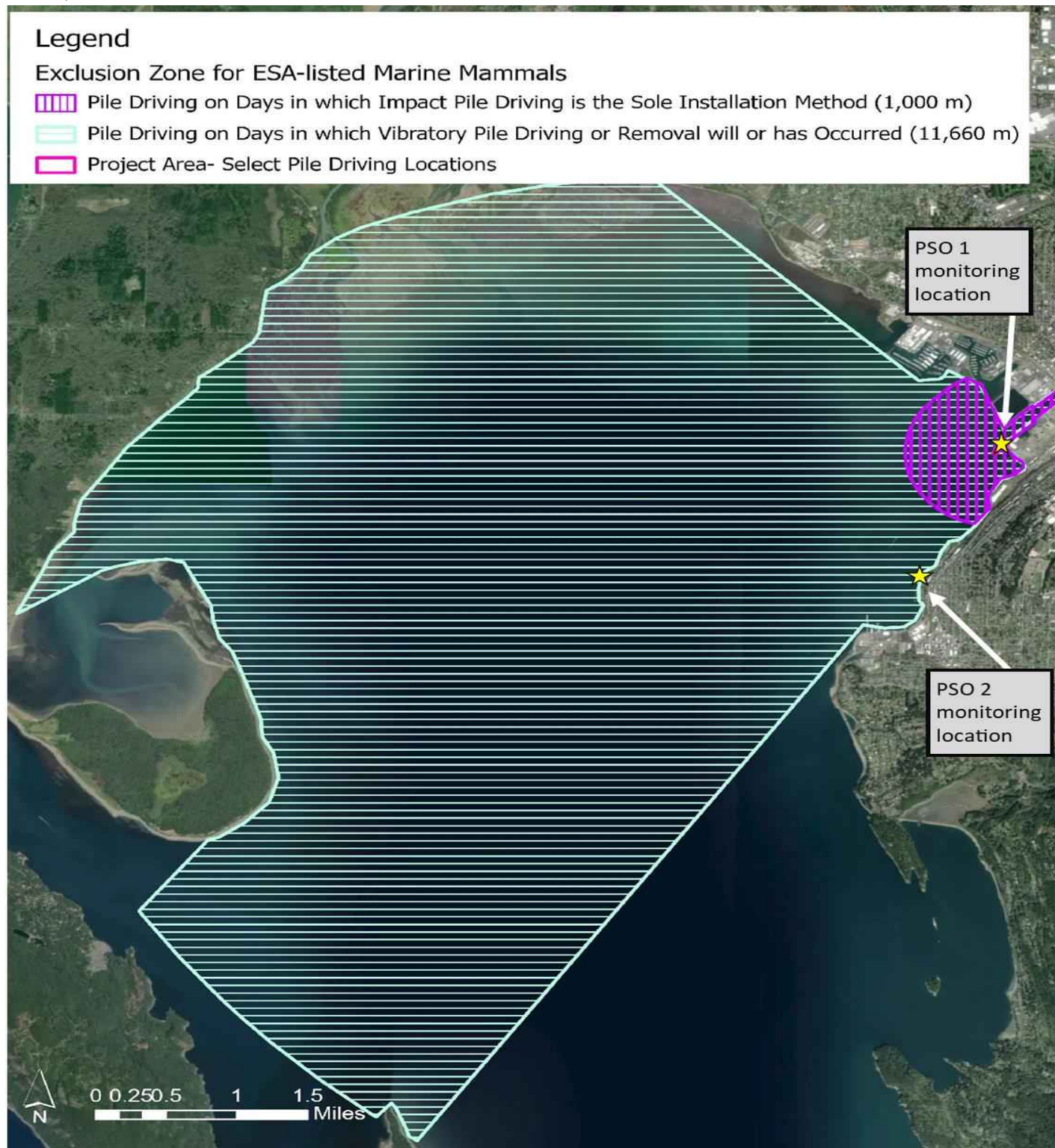
Species Observed within Level B Zone	Daily Total Number of Level B Takes	Project Total Level B Takes
Harbor seal (<i>Phoca vitulina</i>)	13*	154

*Some sightings were likely to be the same harbor seals seen throughout the day.

Incorporated BMPs and Mitigation

No distressed or injured marine mammals or fish were observed as a result of the in-water pile removal and no Level A takes occurred during the day's monitoring events. To aid in the prevention of harming these species, soft starts during pile removal were implemented and oil and debris containment booms were deployed surrounding the project site.

Figure 1. PSO monitoring locations shown on the ESA-listed marine mammal exclusion zone figure from the BST Marine Infrastructure Maintenance and Rehabilitation IHA (credit: Moffatt & Nichol).



Appendix A. Monitoring Data Sheets



Level B Take Daily Total: 13 harbor seals
 Vibratory Pile Removal Daily Total: 74 minutes
 (2) 24-inch steel piles removed, 1 partially removed

Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 09/05/2024 Sheet 1 of 1 for this day
 Monitor(s): Kimberly McClurg Monitoring Location: on site

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	06:50	clear, calm	Harbor Seal	1	90 m west	pre-work monitor / swimming around
2	07:08	clear, calm	Harbor Seal	1	200 m west	pre-work monitor / swimming south
3	07:44	clear, calm	Harbor Seal	1	200 m west	pre-work monitor / swimming south
4	07:47	clear, calm	Harbor Seal	1	180 m west	vibratory removal / swimming around
5	07:53	clear, calm	Harbor Seal	1	320 m south	vibratory removal / swimming around
6	08:16	clear, calm	Harbor Seal	1	300 m west	vibratory removal / swimming around
7	10:15	clear, calm	Harbor Seal	1	400 m south	vibratory removal / swimming north
8	10:32	clear, calm	Harbor Seal	1	200 m west	vibratory removal / swimming around beyond barge
9	10:40	clear, calm	Harbor Seal	2	300 m west	vibratory removal / swimming & playing**
10	10:47	clear, calm	Harbor Seal	1	500 m south	vibratory removal / swimming south
11	10:50	clear, calm	Harbor Seal	1	300 m south	no vibratory / swimming south

*B *B *B *B *B *B *B

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

*B = Level B Takes

**likely the same seals from sightings #7 and #8



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: Sheet of for this day
 Monitor(s): Monitoring Location:

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	6:45	Clear	Harbor Seal	1	2400m S of site	Pre-monitoring/surface swimming
2	6:47	Clear	Harbor Seal	1	2600m S of site	Pre-monitoring/surface swimming
3	7:50	Clear	Harbor Seal	3	750-1500m S	Vibratory work/bobbing & swimming
4	9:33	Clear, Sunny	Harbor Seal	1	1700m S of site	No vibratory work/surface swimming
5	10:09	Clear, Sunny	Harbor Seal	1	1750m S of site	No vibratory work/surface swimming
6	10:30	Clear, Sunny	Harbor Seal	1	1450m SE of site	Vibratory work/surface swimming
7	10:56	Clear, Sunny	Harbor Seal	1	1930m S of site	Vibratory work/surface swimming

*B *B *B

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number
 *B = Level B Takes

**Bellingham Shipping Terminal
Marine Infrastructure Maintenance & Rehabilitation**

Bellingham Bay, Bellingham, WA

Marine Mammal Monitoring

**DAILY MONITORING REPORT FOR:
Monday, 9 September 2024**

**Reference Project #s:
NMFS # WCRO-2022-00335
USFWS # 2022-0013489
USACE # NWS-2022-141, NWS-2022-147**

Compiled by: Kimberly McClurg



**MARINE SURVEYS & ASSESSMENTS
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Activity Overview

Today's monitoring activities aimed to protect marine mammals and ensure compliance with permit requirements to avoid serious injury or behavioral disturbance to marine mammals within the Bellingham Shipping Terminal (BST) infrastructure maintenance and repair action area. The protected species observers (PSOs), comprising scientists from Marine Surveys & Assessments (MSA), monitored the waters of Bellingham Bay at two locations (Figure 1) surrounding the project area before, during, and after construction activities occurred.

Pile driving activities associated with this project may result in incidental take of marine mammals through increased in-air and in-water noise levels. Level A take has the potential to injure or cause permanent threshold shifts, and Level B take may cause behavioral shifts in species. Four species have limited incidental takes that have been authorized for the duration of this project (Table 1); harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), Stellar sea lion (*Eumetopias jubatus*), and harbor porpoise (*Phocoena phocoena*).

Table 1. Authorized Incidental Take Allowed for each Species.

Species	Authorized Level A harassment	Authorized Level B harassment
Harbor seal	264	2,029
California sea lion	0	87
Stellar sea lion	0	87
Harbor porpoise	0	261

Marine mammal monitoring started at 06:45, and after 30 minutes of continuous monitoring in which no marine mammals were observed within the exclusion zones, American Construction was informed that they could start work for the day. Monitoring continued for the very short duration that American Construction used a crane-mounted vibratory hammer to attempt to remove a 24-inch steel pile from 09:50 PST until 09:54 PST. Approximately 4 minutes of vibratory pile removal occurred during this monitoring event with zero (0) 24-inch steel piles being fully removed. Monitoring concluded for the day at 12:30 due to an equipment breakdown.

To avoid Level A take during vibratory pile removal, a 10-meter shutdown zone was utilized for harbor seals and sea lions, and a 20-meter shutdown zone was utilized for harbor porpoises. Any of the above species observed within the 11,660-meter monitoring zone during active pile removal was considered a Level B take (IHA Figure 14). An 11,660-meter exclusion zone was utilized to monitor for ESA-listed marine mammals to avoid Level A and Level B take on these species.



No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded. No Level A takes have been associated with the project to date. **Level B takes for the project to date consist of 1 Stellar sea lion and 156 harbor seals.**

No distressed or dying fish were observed during this monitoring event.

Monitoring Crew

Last Name	First Name	Affiliation	Role
McClurg	Kimberly	MSA	Lead PSO
Amos	Meg	MSA	PSO

Monitoring Methods

Prior to work starting for the day, PSOs communicate with the contractor, American Construction, regarding the pile diameter and type of construction (i.e., impact hammer pile installation, vibratory pile installation, or vibratory pile removal) work that will occur. This informs the PSOs of the exclusion (i.e., shutdown) zone that will be used for the day and determines where the PSOs will be stationed for monitoring.

The PSOs arrive onsite at the pre-determined monitoring stations and begin a 30-minute continuous monitoring cycle. If no species of concern enter or come near to their respective exclusion zones, then the onsite construction supervisor is informed that work may begin for the day. The PSOs monitor continuously during all pile installation and removal. Monitoring continues for 30 minutes after work has ceased to ensure no species of concern were within the Level A and Level B monitoring zones. If marine mammals enter or have been observed near the exclusion zone, during or within 30 minutes of starting pile driving, the lead PSO will notify the onsite construction supervisor, and work must either stop or not begin until the animal(s) have moved outside of the respective zone.

Equipment utilized by PSOs during monitoring included the following: binoculars, spotting scopes, range finders, GPS units, compasses, phones, Whale Alert app, and data sheets to record when and where species of concern were observed.

Monitoring Locations

Two PSOs were stationed at pre-determined locations that allowed for full visibility of the entire exclusion zone between the two of them. Monitoring locations can be seen in Figure 1. The lead PSO was located adjacent to the in-water construction zone, monitoring the narrower



Level A take exclusion zone of the harbor seal, sea lions, and harbor porpoise and allowing for quick communication with the onsite construction supervisor. When impact driving occurs, this PSO will be a USFWS-certified marbled murrelet monitor. The second PSO was stationed farther away to the south in Boulevard Park (Figure 1) to monitor the broader exclusion zone for any ESA-listed marine mammals and for any Level B take of the above-mentioned species.

Weather Conditions during Monitoring

The weather conditions during today’s monitoring period consisted of cloudy skies and a moderate breeze. Visibility was < 7 miles. A Beaufort scale of 3 was observed on Bellingham Bay during monitoring with wind speeds at 3-5 knots. The temperature was around 58°F.

Daily Monitoring Summary

Marine mammals observed at the two monitoring stations during this monitoring event are listed in the monitoring log data sheets (Appendix A). No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) were recorded. No distressed or dying fish were observed during this monitoring event.

Level A Take

No Level A takes were recorded during this monitoring event.

Level B Take

Level B take was recorded for harbor seals (Table 2); see monitoring data sheets for the full take information (Appendix A).

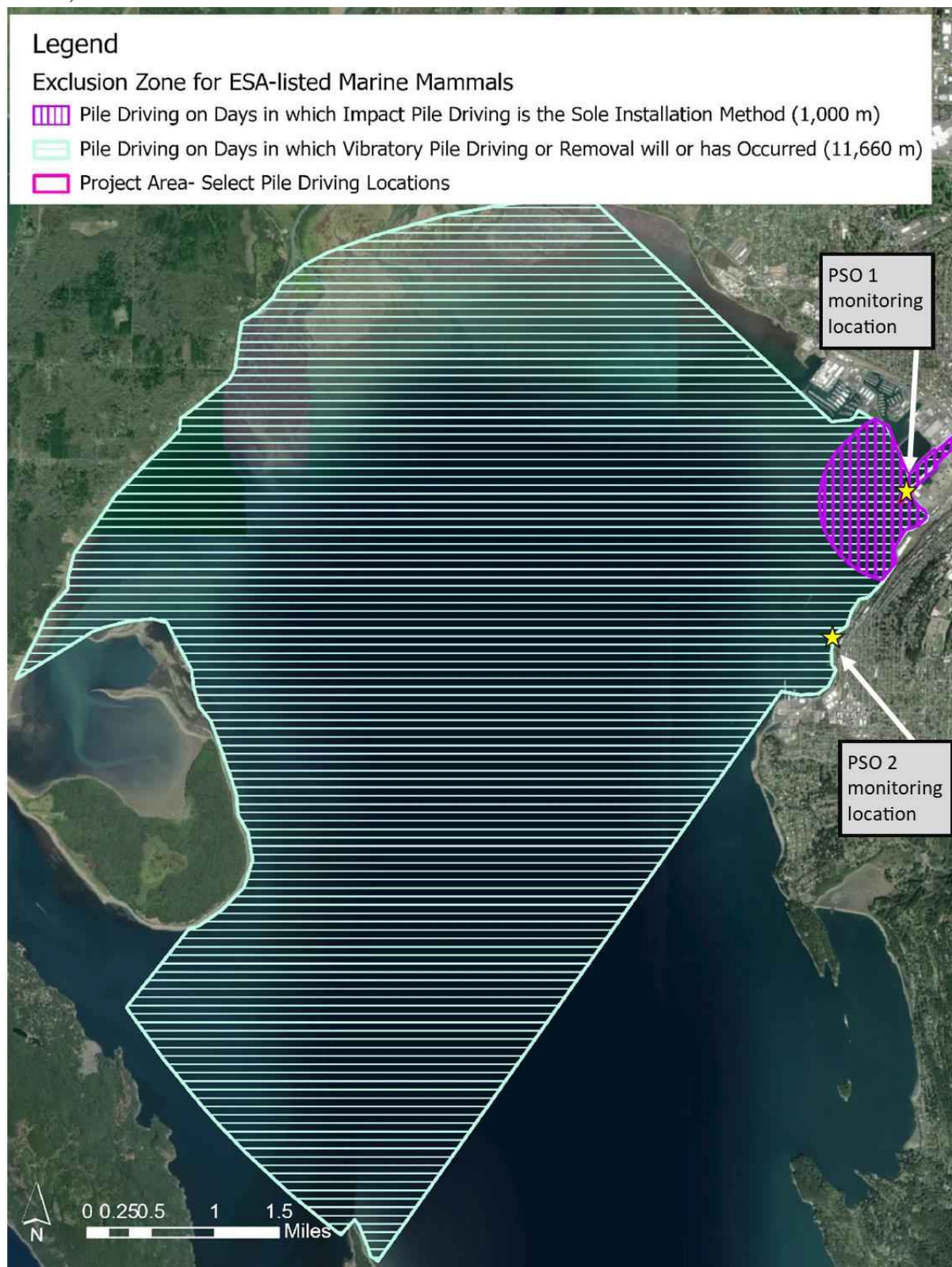
Table 2. Summary of Level B Take

Species Observed within Level B Zone	Daily Total Number of Level B Takes	Project Total Level B Takes
Harbor seal (<i>Phoca vitulina</i>)	2	156

Incorporated BMPs and Mitigation

No distressed or injured marine mammals or fish were observed as a result of the in-water pile removal and no Level A takes occurred during the day’s monitoring events. To aid in the prevention of harming these species, soft starts during pile removal were implemented and oil and debris containment booms were deployed surrounding the project site.

Figure 1. PSO monitoring locations shown on the ESA-listed marine mammal exclusion zone figure from the BST Marine Infrastructure Maintenance and Rehabilitation IHA (credit: Moffatt & Nichol).



Appendix A. Monitoring Data Sheets

**Bellingham Shipping Terminal
Marine Infrastructure Maintenance & Rehabilitation**

Bellingham Bay, Bellingham, WA

Marine Mammal Monitoring

**DAILY MONITORING REPORT FOR:
Tuesday, 10 September 2024**

**Reference Project #s:
NMFS # WCRO-2022-00335
USFWS # 2022-0013489
USACE # NWS-2022-141, NWS-2022-147**

Compiled by: Kimberly McClurg



**MARINE SURVEYS & ASSESSMENTS
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Activity Overview

Today’s monitoring activities aimed to protect marine mammals and ensure compliance with permit requirements to avoid serious injury or behavioral disturbance to marine mammals within the Bellingham Shipping Terminal (BST) infrastructure maintenance and repair action area. The protected species observers (PSOs), comprising scientists from Marine Surveys & Assessments (MSA), monitored the waters of Bellingham Bay at two locations (Figure 1) surrounding the project area before, during, and after construction activities occurred.

Pile driving activities associated with this project may result in incidental take of marine mammals through increased in-air and in-water noise levels. Level A take has the potential to injure or cause permanent threshold shifts, and Level B take may cause behavioral shifts in species. Four species have limited incidental takes that have been authorized for the duration of this project (Table 1); harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), Stellar sea lion (*Eumetopias jubatus*), and harbor porpoise (*Phocoena phocoena*).

Table 1. Authorized Incidental Take Allowed for each Species.

Species	Authorized Level A harassment	Authorized Level B harassment
Harbor seal	264	2,029
California sea lion	0	87
Stellar sea lion	0	87
Harbor porpoise	0	261

Marine mammal monitoring started at 06:40, and after 30 minutes of continuous monitoring in which no marine mammals were observed within the exclusion zones, American Construction was informed that they could start work for the day. Monitoring continued on and off throughout the day as American Construction used a crane-mounted vibratory hammer to remove 24-inch steel piles from 07:48 PST until 15:49 PST. Approximately 111 minutes of vibratory pile removal occurred during this monitoring event with five (5) 24-inch steel piles being fully removed. Monitoring concluded for the day at 16:20.

To avoid Level A take during vibratory pile removal, a 10-meter shutdown zone was utilized for harbor seals and sea lions, and a 20-meter shutdown zone was utilized for harbor porpoises. Any of the above species observed within the 11,660-meter monitoring zone during active pile removal was considered a Level B take (IHA Figure 14). An 11,660-meter exclusion zone was utilized to monitor for ESA-listed marine mammals to avoid Level A and Level B take on these species.

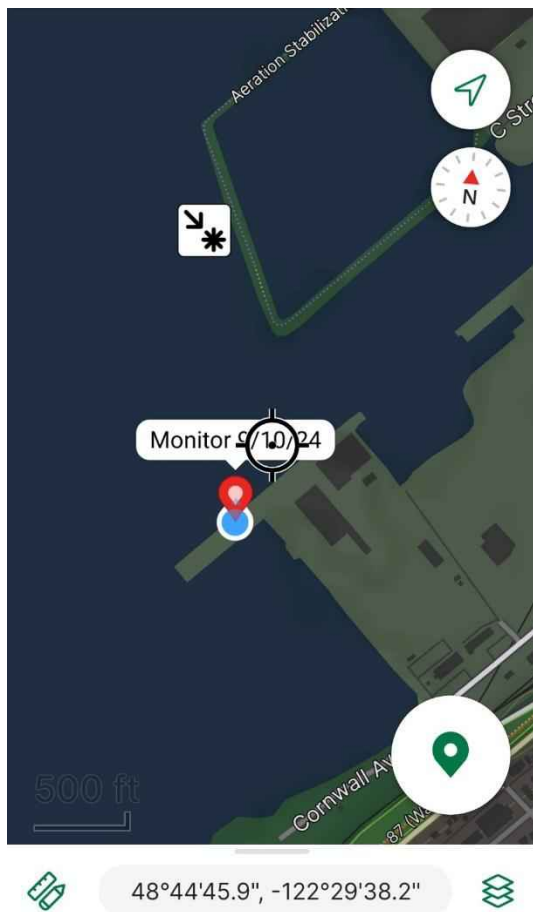


No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) and harbor porpoises (*Phocoena phocoena*) were recorded (Table 2, Appendix A). No Level A takes have been associated with the project to date. Level B takes for the project to date are summarized in Table 2 near the end of this report.

No distressed or dying fish were observed during this monitoring event.

At 10:00, Meg Amos observed a dead harbor seal floating on the surface approximately 400-500 m from her position on the pier between the construction barge and the rock jetty to the north (see figure below). It was far enough away that a clear picture could not be taken. Throughout the day, fishing boats were deploying nets around the northern part of the bay and near the mouth of Whatcom Creek, and Meg Amos believes she might have heard a gunshot earlier that morning before the dead harbor seal was spotted. An effort was made to find the body in the afternoon, but it was not found. None of the harbor seals that were spotted near the project site today showed any signs of distress or injury.

Approximate location of where dead seal was last seen





Monitoring Crew

Last Name	First Name	Affiliation	Role
Amos	Meg	MSA	Lead PSO
McClurg	Kimberly	MSA	PSO

Monitoring Methods

Prior to work starting for the day, PSOs communicate with the contractor, American Construction, regarding the pile diameter and type of construction (i.e., impact hammer pile installation, vibratory pile installation, or vibratory pile removal) work that will occur. This informs the PSOs of the exclusion (i.e., shutdown) zone that will be used for the day and determines where the PSOs will be stationed for monitoring.

The PSOs arrive onsite at the pre-determined monitoring stations and begin a 30-minute continuous monitoring cycle. If no species of concern enter or come near to their respective exclusion zones, then the onsite construction supervisor is informed that work may begin for the day. The PSOs monitor continuously during all pile installation and removal. Monitoring continues for 30 minutes after work has ceased to ensure no species of concern were within the Level A and Level B monitoring zones. If marine mammals enter or have been observed near the exclusion zone, during or within 30 minutes of starting pile driving, the lead PSO will notify the onsite construction supervisor, and work must either stop or not begin until the animal(s) have moved outside of the respective zone.

Equipment utilized by PSOs during monitoring included the following: binoculars, spotting scopes, range finders, GPS units, compasses, phones, Whale Alert app, and data sheets to record when and where species of concern were observed.

Monitoring Locations

Two PSOs were stationed at pre-determined locations that allowed for full visibility of the entire exclusion zone between the two of them. Monitoring locations can be seen in Figure 1. The lead PSO was located adjacent to the in-water construction zone, monitoring the narrower Level A take exclusion zone of the harbor seal, sea lions, and harbor porpoise and allowing for quick communication with the onsite construction supervisor. If impact driving occurs, this PSO will be a USFWS-certified marbled murrelet monitor. The second PSO was stationed farther away to the south in Boulevard Park (Figure 1) to monitor the broader exclusion zone for any ESA-listed marine mammals and for any Level B take of the above-mentioned species.



Weather Conditions during Monitoring

The weather conditions during today’s monitoring period consisted of cloudy skies and a light breeze in the morning transitioning to partly cloudy skies and a moderate breeze in the afternoon. Visibility was < 7 miles. A maximum Beaufort scale of 3 was observed on Bellingham Bay during monitoring with wind speeds around 5 knots. The temperature ranged from 55°F to 63°F.

Daily Monitoring Summary

Marine mammals observed at the two monitoring stations during this monitoring event are listed in the monitoring log data sheets (Appendix A). No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals (*Phoca vitulina*) and harbor porpoises (*Phocoena phocoena*) were recorded. No distressed or dying fish were observed during this monitoring event.

A dead harbor seal was observed floating in the water 400-500 m outside of the project area, far enough away that it was difficult to determine how long it had been dead and what the cause of death might have been. The live harbor seals seen throughout the day did not show any signs of injury or distress.

Level A Take

No Level A takes were recorded during this monitoring event.

Level B Take

Level B take was recorded for harbor seals and harbor porpoises (Table 2); see monitoring data sheets for the full take information (Appendix A).

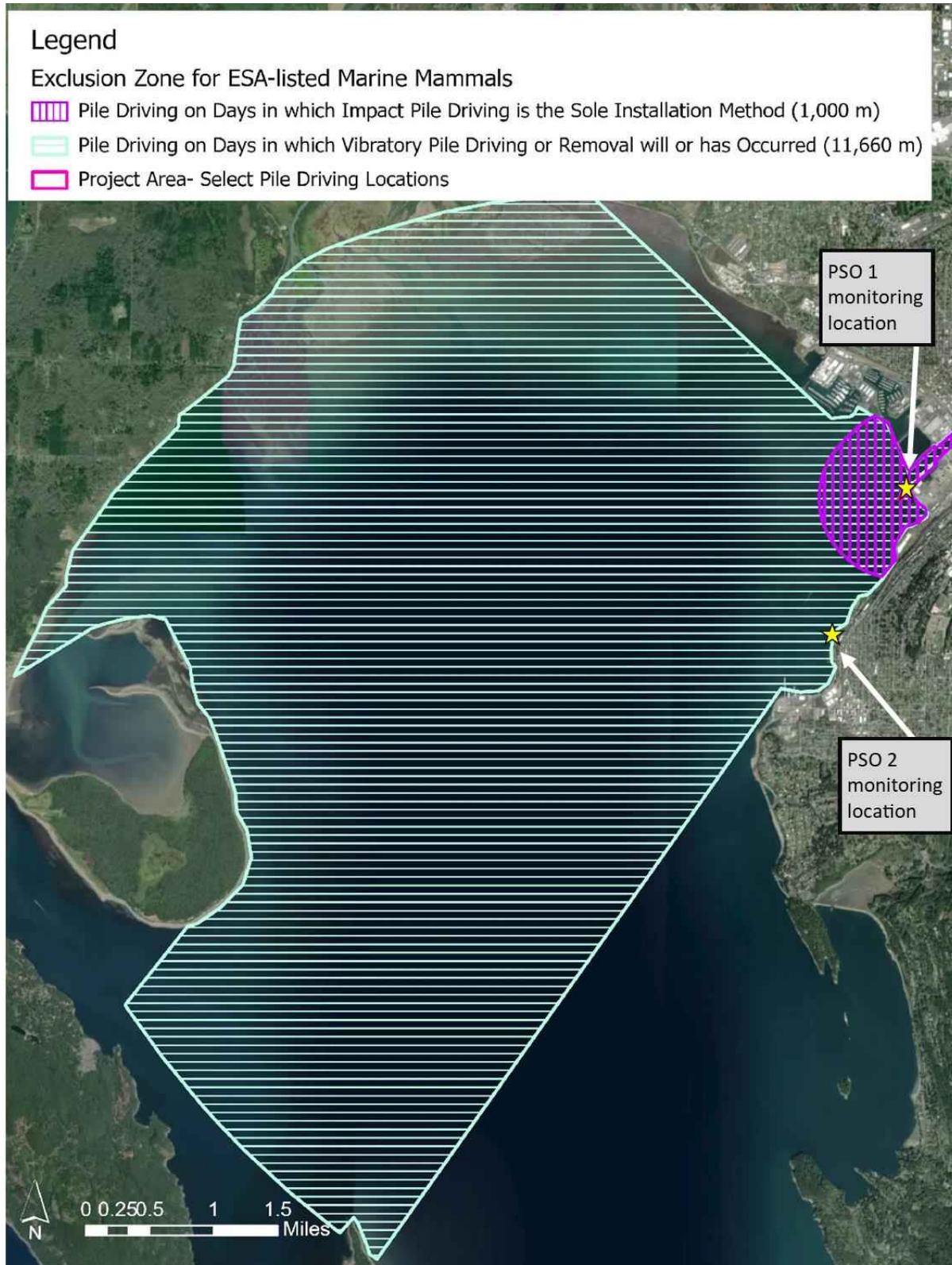
Table 2. Summary of Level B Take

Species Observed within Level B Zone	Daily Total Number of Level B Takes	Project Total Level B Takes
Harbor seal (<i>Phoca vitulina</i>)	9	165
Harbor porpoise (<i>Phocoena phocoena</i>)	4	4
Stellar sea lion (<i>Eumetopias jubatus</i>)	0	1

Incorporated BMPs and Mitigation

No distressed or injured marine mammals or fish were observed as a result of the in-water pile removal and no Level A takes occurred during the day’s monitoring events. To aid in the prevention of harming these species, soft starts during pile removal were implemented and oil and debris containment booms were deployed surrounding the project site.

Figure 1. PSO monitoring locations shown on the ESA-listed marine mammal exclusion zone figure from the BST Marine Infrastructure Maintenance and Rehabilitation IHA (credit: Moffatt & Nichol).



Appendix A. Monitoring Data Sheets



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 09/10/2024 Sheet 1 of 1 for this day

Monitor(s): Meg Amos Monitoring Location: project site

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	07:14	calm, cloudy	Harbor Seal	1	320 deg @ 100 m	pre-monitor / popping up all over
2	07:30	calm, cloudy	Harbor Seal	2	241 deg @ 200 m	no vibratory / might be same seal as #1
3	07:53	calm, cloudy	Harbor Seal	1	344 deg @ 100 m	vibratory removal / curious, slowly swimming
4	07:56	calm, cloudy	Harbor Seal	1	282 deg @ 500 m	vibratory removal / might be same seal as #3
5	08:12	calm, cloudy	Harbor Seal	2	348 deg @ 100 m	vibratory removal / 2 more seals join #4
6	08:24	calm, cloudy	Harbor Seal	1	115 deg @ 150 m	no vibratory / likely one of seals above that is opposite pier
7	09:55	calm, cloudy	Harbor Seal	1	122 deg @ 500 m	vibratory removal / curious, slowly swimming
8	10:26	cloudy, light breeze	Harbor Seal	1	357 deg @ 100 m	no vibratory / same, likely a previously sighted seal
9	11:54	cloudy, light breeze	Harbor Seal	1	261 deg @ 200 m	vibratory removal / curious, swims toward barge
10	15:24	sunny, moderate breeze	Harbor Seal	1	331 deg @ 150 m	no vibratory / swimming towards barge
11	15:31	sunny, moderate breeze	Harbor Seal	1	210 deg @ 325 m	vibratory removal / casual swimming, might be same as #10
12	15:57	sunny, moderate breeze	Harbor Porpoise	2	250 deg @ 200 m	no vibratory / swimming in tandem to the south/SW

*B *B *B *B *B *B *B

NOTE: At 10:00, a dead harbor seal was observed @ 400-500 m from the monitoring location (between construction barge and rock jetty), floating towards rock jetty. Fishing boats were deploying nets in the bay and there is a small boat with nets at the mouth of Whatcom Creek. A gunshot might have been heard earlier.

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number
 *B = Level B Take



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 09/10/2024 Sheet 1 of 1 for this day
 Monitor(s): Kimberly McClurg Monitoring Location: Boulevard Park

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	06:49	cloudy, calm	Harbor Seal	1	100 m to southwest	pre-monitor / swimming around
2	07:10	cloudy, calm	Harbor Porpoise	2	1,000 m to west	pre-monitor / swimming north
3	07:51	cloudy, calm	Harbor Porpoise	4	900 m to west	vibratory removal / swimming north
4	07:55	cloudy, calm	Harbor Seal	1	100 m to northwest	vibratory removal / eating a fish
5	07:58	cloudy, calm	Harbor Seal	1	500 m west	vibratory removal / swimming around

*B *B *B

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number
 *B = Level B Take

**Bellingham Shipping Terminal
Marine Infrastructure Maintenance & Rehabilitation**

Bellingham Bay, Bellingham, WA

Marine Mammal Monitoring

**DAILY MONITORING REPORT FOR:
Wednesday, 11 September 2024**

**Reference Project #s:
NMFS # WCRO-2022-00335
USFWS # 2022-0013489
USACE # NWS-2022-141, NWS-2022-147**

Compiled by: Madalyn Walker



MARINE SURVEYS & ASSESSMENTS

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Activity Overview

Today's monitoring activities aimed to protect marine mammals and ensure compliance with permit requirements to avoid serious injury or behavioral disturbance to marine mammals within the Bellingham Shipping Terminal (BST) infrastructure maintenance and repair action area. The protected species observers (PSOs), comprising scientists from Marine Surveys & Assessments (MSA), monitored the waters of Bellingham Bay at two locations (Figure 1) surrounding the project area before, during, and after construction activities occurred.

Pile driving activities associated with this project may result in incidental take of marine mammals through increased in-air and in-water noise levels. Level A take has the potential to injure or cause permanent threshold shifts, and Level B take may cause behavioral shifts in species. Four species have limited incidental takes that have been authorized for the duration of this project (Table 1); harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), Stellar sea lion (*Eumetopias jubatus*), and harbor porpoise (*Phocoena phocoena*).

Table 1. Authorized Incidental Take Allowed for each Species.

Species	Authorized Level A harassment	Authorized Level B harassment
Harbor seal	264	2,029
California sea lion	0	87
Stellar sea lion	0	87
Harbor porpoise	0	261

Marine mammal monitoring started at 06:30, and after 30 minutes of continuous monitoring in which no marine mammals were observed within the exclusion zones, American Construction was informed that they could start work for the day. Monitoring continued on and off throughout the day as American Construction used a crane-mounted vibratory hammer to remove 24-inch steel piles from 07:53 PST until 14:45 PST. Approximately 103 minutes of vibratory pile removal occurred during this monitoring event with four (4) 24-inch steel piles being fully removed. Monitoring concluded for the day at 15:30.

To avoid Level A take during vibratory pile removal, a 10-meter shutdown zone was utilized for harbor seals and sea lions, and a 20-meter shutdown zone was utilized for harbor porpoises. Any of the above species observed within the 11,660-meter monitoring zone during active pile removal was considered a Level B take (IHA Figure 14). An 11,660-meter exclusion zone was utilized to monitor for ESA-listed marine mammals to avoid Level A and Level B take on these species.

No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals, harbor porpoises, and a California sea lion were recorded (Table 2). No Level



A takes have been associated with the project to date. Level B takes for the project to date are summarized in Table 2 near the end of this report.

No distressed or dying fish were observed during this monitoring event.

Monitoring Crew

Last Name	First Name	Affiliation	Role
Walker	Madalyn	MSA	Lead PSO
DeCaterina	Bryan	MSA	PSO

Monitoring Methods

Prior to work starting for the day, PSOs communicate with the contractor, American Construction, regarding the pile diameter and type of construction (i.e., impact hammer pile installation, vibratory pile installation, or vibratory pile removal) work that will occur. This informs the PSOs of the exclusion (i.e., shutdown) zone that will be used for the day and determines where the PSOs will be stationed for monitoring.

The PSOs arrive onsite at the pre-determined monitoring stations and begin a 30-minute continuous monitoring cycle. If no species of concern enter or come near to their respective exclusion zones, then the onsite construction supervisor is informed that work may begin for the day. The PSOs monitor continuously during all pile installation and removal. Monitoring continues for 30 minutes after work has ceased to ensure no species of concern were within the Level A and Level B monitoring zones. If marine mammals enter or have been observed near the exclusion zone, during or within 30 minutes of starting pile driving, the lead PSO will notify the onsite construction supervisor, and work must either stop or not begin until the animal(s) have moved outside of the respective zone.

Equipment utilized by PSOs during monitoring included the following: binoculars, spotting scopes, range finders, GPS units, compasses, phones, Whale Alert app, and data sheets to record when and where species of concern were observed.

Monitoring Locations

Two PSOs were stationed at pre-determined locations that allowed for full visibility of the entire exclusion zone between the two of them. Monitoring locations can be seen in Figure 1. The lead PSO was located adjacent to the in-water construction zone, monitoring the narrower Level A take exclusion zone of the harbor seal, sea lions, and harbor porpoise and allowing for quick communication with the onsite construction supervisor. If impact driving occurs, this PSO will be



a USFWS-certified marbled murrelet monitor. The second PSO was stationed farther away to the south in Boulevard Park (Figure 1) to monitor the broader exclusion zone for any ESA-listed marine mammals and for any Level B take of the above-mentioned species.

Weather Conditions during Monitoring

The weather conditions during today's monitoring period consisted of cloudy skies with light rain throughout the day. Visibility was < 7 miles. A Beaufort scale of 1-2 was observed on Bellingham Bay during monitoring with wind speeds between 2-4 knots. The temperature ranged from 50°F to 60°F.

Daily Monitoring Summary

Marine mammals observed at the two monitoring stations during this monitoring event are listed in the monitoring log data sheets (Appendix A). No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals, harbor porpoises, and a California sea lion were recorded. No distressed or dying fish were observed during this monitoring event.

Level A Take

No Level A takes were recorded during this monitoring event.

Level B Take

Level B take was recorded for harbor seals, harbor porpoises, and California sea lion (Table 2); see monitoring data sheets for the full take information (Appendix A).

Table 2. Summary of Level B Take

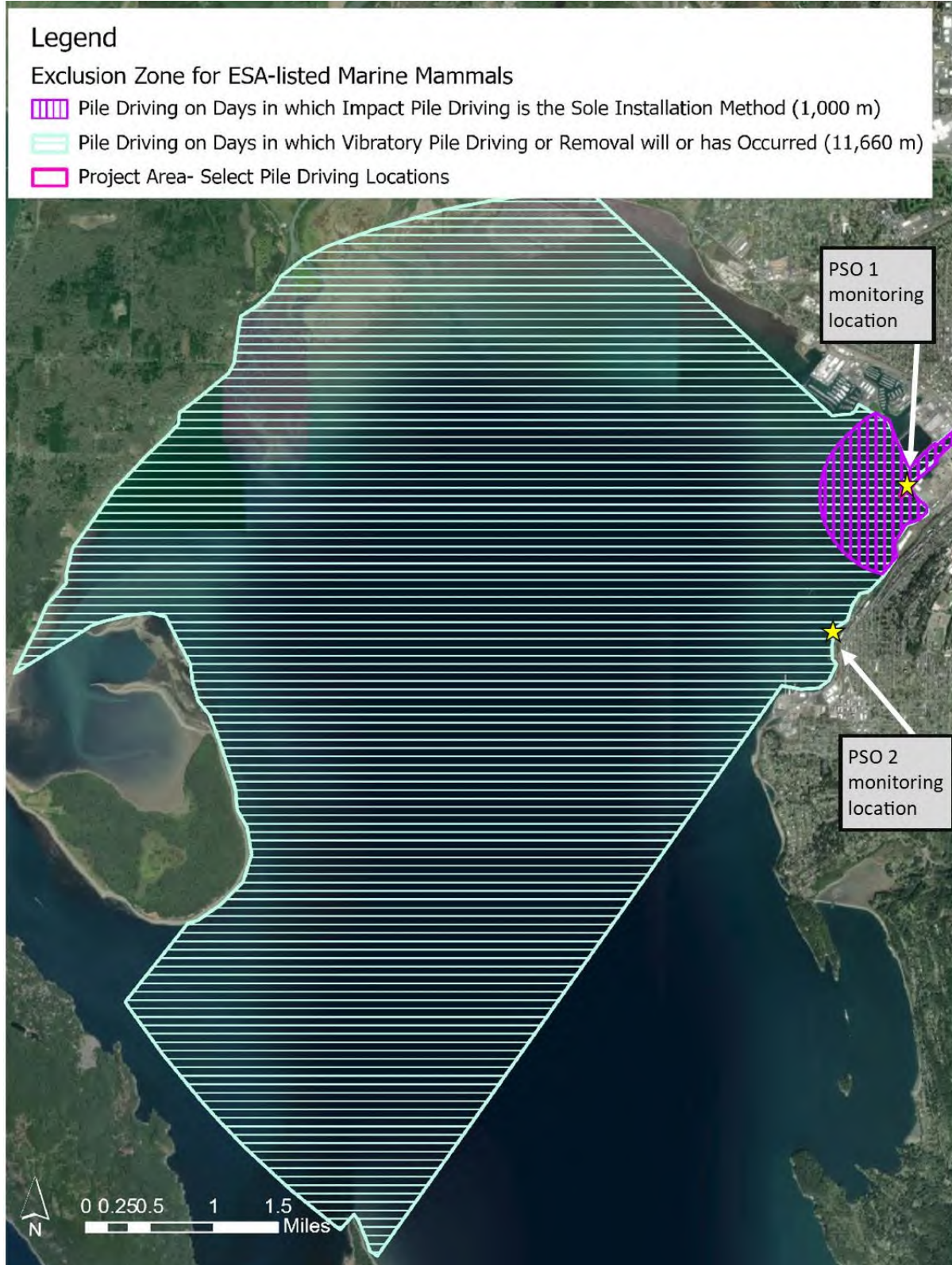
Species Observed within Level B Zone	Daily Total Number of Level B Takes	Project Total Level B Takes
Harbor seal (<i>Phoca vitulina</i>)	27	192
Harbor porpoise (<i>Phocoena phocoena</i>)	2	6
Stellar sea lion (<i>Eumetopias jubatus</i>)	0	1
California sea lion (<i>Zalophus californianus</i>)	1	1

Incorporated BMPs and Mitigation

No distressed or injured marine mammals or fish were observed as a result of the in-water pile removal and no Level A takes occurred during the day's monitoring events. To aid in the prevention of harming these species, soft starts during pile removal were implemented and oil and debris containment booms were deployed surrounding the project site.



Figure 1. PSO monitoring locations shown on the ESA-listed marine mammal exclusion zone figure from the BST Marine Infrastructure Maintenance and Rehabilitation IHA (credit: Moffatt & Nichol).



Appendix A. Monitoring Data Sheets



Level B Take Daily Total: 27 harbor seals, 2 harbor porpoises, 1 California sea lion
 Vibratory Pile Removal Daily Total: 103 minutes
 (4) 24-inch steel piles removed

Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 09.11.24 Sheet 1 of 3 for this day
 Monitor(s): Madalyn Walker Monitoring Location: Job site

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	06:45	rain, 56F, 2 kts N	Harbor seal	1	180 m SW of work	No active pile removal, foraging/swimming
2	06:45	rain, Beaufort 1	Harbor seal	1	115 m SW of work	No active pile removal, foraging/swimming
3	06:50	rain, 2 kts	Harbor seal	1	68 m SW of work	No active pile removal, foraging/swimming
4	06:57	rain, 2 kts	Harbor seal	1	116 m SW of work	No active pile removal, foraging/swimming
5	07:01	rain, 2 kts	Harbor seal	1	185 m WSW of work	No active pile removal, foraging/swimming
6	07:01	rain, 2 kts	Harbor seal	1	190 m WSW of work	No active pile removal, foraging/swimming
7	07:02	rain, 2 kts	Harbor seal	1	237 m N or work	No active pile removal, foraging/swimming
8	07:02	rain, 2 kts	Harbor seal	1	310 m NNW of work	No active pile removal, foraging/swimming
9	07:17	rain, 2 kts	Harbor seal	1	109 m W of work	No active pile removal, foraging/swimming
10	07:18	rain, 2 kts	Harbor seal	2	287m NW of work	No active pile removal, foraging/swimming
11	07:18	rain, 2 kts	Harbor seal	6	375 m W of work	No active pile removal, foraging/swimming
12	07:29	rain, 2 kts	Harbor porpoises	2	452 m WNW of work	No active pile removal, foraging/swimming
13	07:44	rain, 2 kts	Harbor seal	2	160 m SW of work	No active pile removal, foraging/swimming
14	07:53	rain, 2 kts	Harbor porpoises	2	200 m NW of work	Active vibe pile removal, looking/swimming

*B

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

*B = Level B Takes



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 09.11.24 Sheet 2 of 3 for this day

Monitor(s): Madalyn Walker Monitoring Location: Job site

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
*B 15	07:54	rain, 2 kts	Harbor seal	1	361 m W of work	Active vibe pile removal, looking/swimming
*B 16	07:54	rain, 2 kts	Harbor seal	1	349 m N of work	Active vibe pile removal, looking/swimming
*B 17	07:55	rain, 2 kts	Harbor seal	1	180 m WSW of work	Active vibe pile removal, looking/swimming
*B 18	07:55	rain, 2 kts	Harbor seal	2	317 m NW of work	Active vibe pile removal, looking/swimming
*B 19	07:56	rain, 2 kts	Harbor seal	1	150 m W of work	Active vibe pile removal, looking/swimming
*B 20	07:56	rain, 2 kts	Harbor seal	2	220 m N of work	Active vibe pile removal, looking/swimming
*B 21	07:57	rain, 2 kts	Harbor seal	1	110 m NW of work	Active vibe pile removal, looking/swimming
*B 22	07:57	rain, 2 kts	Harbor seal	2	800 m NW of work	Active vibe pile removal, foraging
23	09:00	rain, 2 kts	Harbor seal	2	233 m N of work	No active pile removal, swimming
24	09:00	rain, 2 kts	Harbor seal	1	128 m W of work	No active pile removal, swimming
25	09:20	rain, 2 kts	Harbor porpoises	2	330 m SW of work	No active pile removal, same ones from earlier
26	09:20	rain, 2 kts	Harbor seal	3	289 m NW of work	No active pile removal, swimming
*B 27	10:20	rain, 3 kts	Harbor seal	1	86 m NW of work	Active vibe pile removal, looking/swimming
*B 28	10:20	rain, 3 kts	Harbor seal	1	113 m SW of work	Active vibe pile removal, looking/swimming

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

*B = Level B Takes



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 09.11.24 Sheet 3 of 3 for this day
 Monitor(s): Madalyn Walker Monitoring Location: Job site

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
*B 29	10:20	rain, 3 kts	Harbor seal	1	131 m SW of work	Active vibrate pile removal, looking/swimming
*B 30	10:20	rain, 3 kts	Harbor seal	1	187 m W of work	Active vibrate pile removal, looking/swimming
*B 31	10:20	rain, 3 kts	Harbor seal	1	160 m N of work	Active vibrate pile removal, looking/swimming
*B 32	10:21	rain, 3 kts	Harbor seal	1	151 m SW of work	Active vibrate pile removal, looking/swimming
*B 33	10:25	rain, 3 kts	California Sea Lion	1	441 m W of work	Active vibrate pile removal, looking/swimming
*B 34	12:20	overcast, 60F	Harbor seal	1	80 m NW of work	Active vibrate pile removal, looking/swimming
*B 35	12:20	overcast	Harbor seal	1	190 m NW of work	Active vibrate pile removal, looking/swimming
*B 36	14:21	rain, 58F, 4 kts	Harbor seal	1	137 m NW of work	Active vibrate pile removal, looking/swimming
*B 37	14:21	rain, Beaufort 2	Harbor seal	1	113 m W of work	Active vibrate pile removal, looking/swimming
*B 38	14:54	overcast, 2 kts	Harbor seal	1	101 m SW of work	No active pile removal, looking/swimming

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

*B = Level B Takes



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 09.11.24 Sheet 1 of 2 for this day
 Monitor(s): Bryan DeCaterina Monitoring Location: Boulevard Park

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	07:34	Rain	Harbor seal	1	500 m E	No active work; swimming
2	07:46	Cloudy	Harbor seal	1	78 m SE	No active work; hunting
*B 3	07:58	Rain	Harbor seal	1	175 m SE	Active vibratory, swimming
*B 4	08:07	Rain	Harbor seal	1	80 m SE	Active vibratory, swimming
5	08:20	Cloudy	Harbor seal	2	110 m SE	No active work; swimming
*B 6	08:25	Rain	Harbor seal	1	100 m SE	Active vibratory, swimming
7	09:29	Drizzle	Harbor seal	1	81 m SE	No active work; swimming
8	09:35	Drizzle	Harbor seal	1	35 m SE	No active work; bobbing
9	09:58	Cloudy	Harbor porpoises	2	850 m S	No active work; surfacing
10	10:15	Cloudy	California Sea Lion	1	80 m SE	No active work; swimming
*B 11	10:47	Cloudy	Harbor seal	1	200 m SE	Active vibratory, swimming
*B 12	11:06	Cloudy	Harbor seal	1	100 m SE	Active vibratory, swimming
13	11:20	Cloudy	Harbor seal	1	400 m SE	No active work; swimming
14	11:55	Cloudy	Harbor seal	1	400 m SSE	No active work; bobbing

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number

*B = Level B Takes

**Bellingham Shipping Terminal
Marine Infrastructure Maintenance & Rehabilitation**

Bellingham Bay, Bellingham, WA

Marine Mammal Monitoring

**DAILY MONITORING REPORT FOR:
Monday, 23 September 2024**

**Reference Project #s:
NMFS # WCRO-2022-00335
USFWS # 2022-0013489
USACE # NWS-2022-141, NWS-2022-147**

Compiled by: Bryan DeCaterina



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Activity Overview

Today's monitoring activities aimed to protect marine mammals and ensure compliance with permit requirements to avoid serious injury or behavioral disturbance to marine mammals within the Bellingham Shipping Terminal (BST) infrastructure maintenance and repair action area. The protected species observers (PSOs), comprising scientists from Marine Surveys & Assessments (MSA), monitored the waters of Bellingham Bay at two locations (Figure 1) surrounding the project area before, during, and after construction activities occurred.

Pile driving activities associated with this project may result in incidental take of marine mammals through increased in-air and in-water noise levels. Level A take has the potential to injure or cause permanent threshold shifts, and Level B take may cause behavioral shifts in species. Four species have limited incidental takes that have been authorized for the duration of this project (Table 1); harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), Stellar sea lion (*Eumetopias jubatus*), and harbor porpoise (*Phocoena phocoena*).

Table 1. Authorized Incidental Take Allowed for each Species.

Species	Authorized Level A harassment	Authorized Level B harassment
Harbor seal	264	2,029
California sea lion	0	87
Stellar sea lion	0	87
Harbor porpoise	0	261

Marine mammal monitoring started at 08:15 PST, and after 30 minutes of continuous monitoring in which no marine mammals were observed within the exclusion zones, American Construction was informed that they could start work for the day. Monitoring continued on and off throughout the day as American Construction used a crane-mounted vibratory hammer to install (3) 24-inch steel piles from 10:40 PST until 15:30 PST. Approximately 58 total minutes of vibratory pile installation occurred during this monitoring event. Monitoring concluded for the day at 16:00 PST.

To avoid Level A take during vibratory pile installation, the following shutdown zones were utilized on site:

- 20-meter shutdown zone for harbor seals,
- 10-meter shutdown zone for sea lions, and
- 30-meter shutdown zone for harbor porpoises.

Any of the above species observed within the 11,660-meter monitoring zone during active pile installation was considered a Level B take (IHA Figure 14). An 11,660-meter exclusion zone was



utilized to monitor for ESA-listed marine mammals to avoid Level A and Level B take on these species.

No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals and harbor porpoise were recorded (Table 2). No Level A takes have been associated with the project to date. Level B takes for the project to date are summarized in Table 2 near the end of this report.

No distressed or dying fish were observed during this monitoring event.

Monitoring Crew

Last Name	First Name	Affiliation	Role
DeCaterina	Bryan	MSA	Lead PSO
McClurg	Kimberly	MSA	PSO

Monitoring Methods

Prior to work starting for the day, PSOs communicate with the contractor, American Construction, regarding the pile diameter and type of construction (i.e., impact hammer pile installation, vibratory pile installation, or vibratory pile removal) work that will occur. This informs the PSOs of the exclusion (i.e., shutdown) zone that will be used for the day and determines where the PSOs will be stationed for monitoring.

The PSOs arrive onsite at the pre-determined monitoring stations and begin a 30-minute continuous monitoring cycle. If no species of concern enter or come near to their respective exclusion zones, then the onsite construction supervisor is informed that work may begin for the day. The PSOs monitor continuously during all pile installation and removal. Monitoring continues for 30 minutes after work has ceased to ensure no species of concern were within the Level A and Level B monitoring zones. If marine mammals enter or have been observed near the exclusion zone, during or within 30 minutes of starting pile driving, the lead PSO will notify the onsite construction supervisor, and work must either stop or not begin until the animal(s) have moved outside of the respective zone.

Equipment utilized by PSOs during monitoring included the following: binoculars, spotting scopes, range finders, GPS units, compasses, phones, Whale Alert app, and data sheets to record when and where species of concern were observed.



Monitoring Locations

Two PSO's were stationed at pre-determined locations that allowed for full visibility of the entire exclusion zone between the two of them. Monitoring locations can be seen in Figure 1. The lead PSO was located adjacent to the in-water construction zone, monitoring the narrower Level A take exclusion zones for harbor seals, sea lions, and harbor porpoises, and allowing for quick communication with the onsite construction supervisor. If impact driving occurs, this PSO will be a USFWS-certified marbled murrelet monitor. The second PSO was stationed farther away to the south in Boulevard Park (Figure 1) to monitor the broader exclusion zone for any ESA-listed marine mammals and for any Level B take of the above-mentioned species.

Weather Conditions during Monitoring

The weather conditions during today's monitoring period consisted of cloudy skies with no wind in the morning and partly cloudy skies with a light breeze in the afternoon. Visibility was < 7 miles. A Beaufort scale of 1-2 was observed on Bellingham Bay during monitoring with wind speeds between 2-3 knots. The temperature ranged from 55°F to 65°F.

Daily Monitoring Summary

Marine mammals observed at the two monitoring stations during this monitoring event are listed in the monitoring log data sheets (Appendix A). No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals and harbor porpoise were recorded. No distressed or dying fish were observed during this monitoring event.

Level A Take

No Level A takes were recorded during this monitoring event.

Level B Take

Level B take was recorded for harbor seals and harbor porpoise (Table 2); see monitoring data sheets for the full take information (Appendix A).

Table 2. Summary of Level B Take

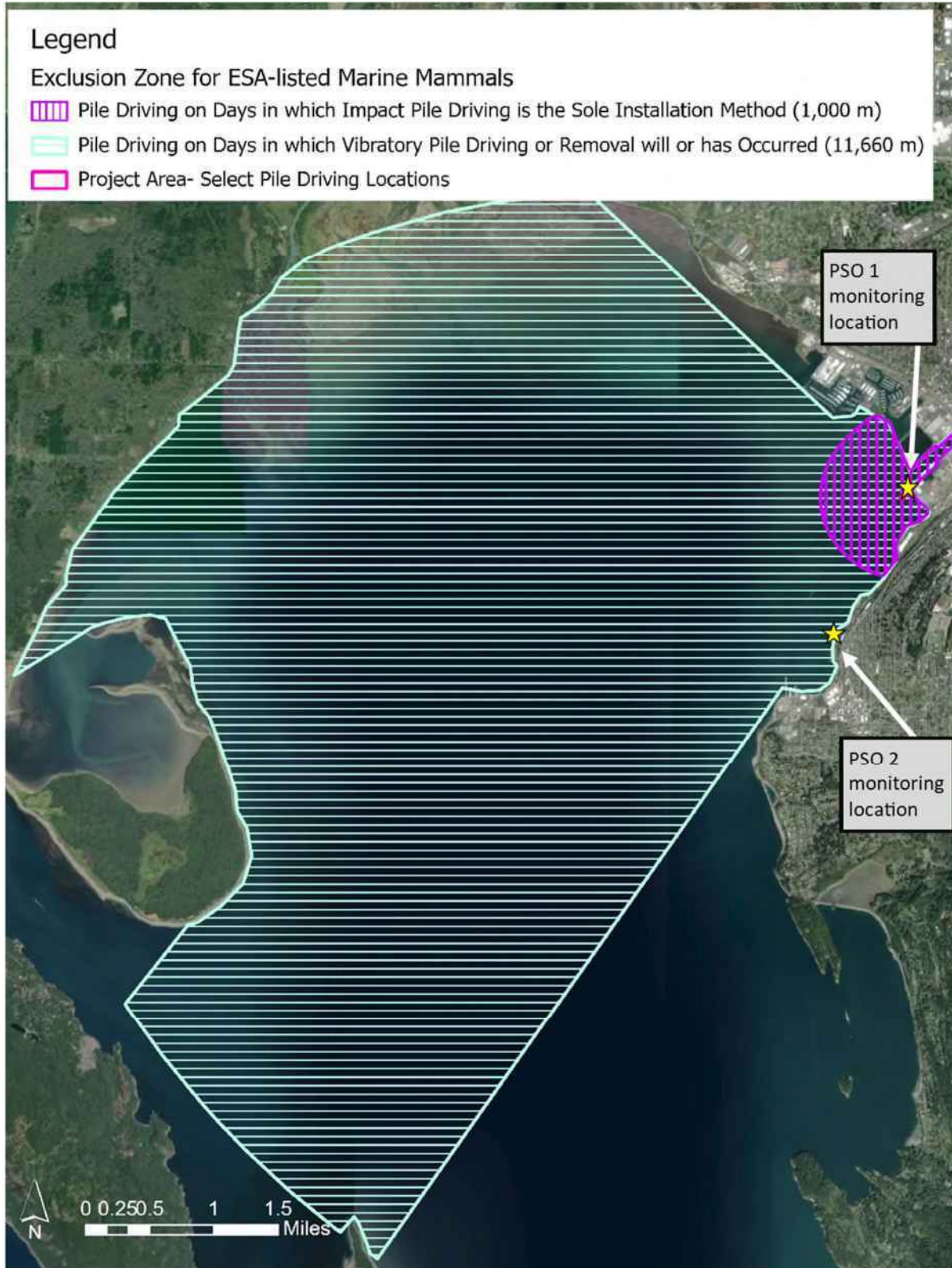
Species Observed within Level B Zone	Daily Total Number of Level B Takes	Project Total Level B Takes
Harbor seal (<i>Phoca vitulina</i>)	2	194
Harbor porpoise (<i>Phocoena phocoena</i>)	1	7
Stellar sea lion (<i>Eumetopias jubatus</i>)	0	1
California sea lion (<i>Zalophus californianus</i>)	0	1



Incorporated BMPs and Mitigation

No distressed or injured marine mammals or fish were observed as a result of the in-water pile driving activities and no Level A takes occurred during the day's monitoring events. To aid in the prevention of harming these species, soft starts during pile installation were implemented and oil and debris containment booms were deployed surrounding the project site.

Figure 1. PSO monitoring locations shown on the ESA-listed marine mammal exclusion zone figure from the BST Marine Infrastructure Maintenance and Rehabilitation IHA (credit: Moffatt & Nichol).



Appendix A. Monitoring Data Sheets



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 09/23/2024 Sheet 1 of 1 for this day
 Monitor(s): Bryan DeCaterina Monitoring Location: Project site (lead)

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	09:55		Harbor Porpoise	2	aprox 180M from Pile work	Not actively vibing
2	10:26		Harbor Porpoise	1	aprox 220M from Pile work	Not actively vibing
3	11:41		Harbor Seal	1	aprox 250M from Pile work	Actively Vibing in 1st 24in steel pile
4	13:56		Harbor Seal	1	aprox 300M from Pile work	Actively Vibing in 2nd 24in steel pile
5	14:56		Harbor Seal	1	aprox 80M from Pile work	vibratory install / swimming south

*B
*B

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number
 *B = Level B Take



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 09/23/2024 Sheet 1 of 1 for this day
 Monitor(s): Kimberly McClurg Monitoring Location: Boulevard Park

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	08:37	cloudy, calm	Harbor Seal	1	00 m to northwest	pre-monitor / swimming south
2	08:45	cloudy, calm	Harbor Porpoise	2	>500m to west	pre-monitor / swimming south
3	09:13	cloudy, calm	Harbor Porpoise	1	400 m to northwest	pre-monitor / swimming north
4	11:45	cloudy, light breeze	Harbor Seal	1	200 m to west	no active vibratory / eating a fish
5	15:25	cloudy, light breeze	Harbor Porpoise	1	>1,000 m west	vibratory install / swimming south

*B

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number
 *B = Level B Take

**Bellingham Shipping Terminal
Marine Infrastructure Maintenance & Rehabilitation**

Bellingham Bay, Bellingham, WA

Marine Mammal Monitoring

**DAILY MONITORING REPORT FOR:
Tuesday, 24 September 2024**

**Reference Project #s:
NMFS # WCRO-2022-00335
USFWS # 2022-0013489
USACE # NWS-2022-141, NWS-2022-147**

Compiled by: Kimberly McClurg



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Activity Overview

Today's monitoring activities aimed to protect marine mammals and ensure compliance with permit requirements to avoid serious injury or behavioral disturbance to marine mammals within the Bellingham Shipping Terminal (BST) infrastructure maintenance and repair action area. The protected species observers (PSOs), comprising scientists from Marine Surveys & Assessments (MSA), monitored the waters of Bellingham Bay at two locations (Figure 1) surrounding the project area before, during, and after construction activities occurred.

Pile driving activities associated with this project may result in incidental take of marine mammals through increased in-air and in-water noise levels. Level A take has the potential to injure or cause permanent threshold shifts, and Level B take may cause behavioral shifts in species. Four species have limited incidental takes that have been authorized for the duration of this project (Table 1); harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), Stellar sea lion (*Eumetopias jubatus*), and harbor porpoise (*Phocoena phocoena*).

Table 1. Authorized Incidental Take Allowed for each Species.

Species	Authorized Level A harassment	Authorized Level B harassment
Harbor seal	264	2,029
California sea lion	0	87
Stellar sea lion	0	87
Harbor porpoise	0	261

Marine mammal monitoring started at 07:00 PST, and after 30 minutes of continuous monitoring in which no marine mammals were observed within the exclusion zones, American Construction was informed that they could start work for the day. Monitoring continued on and off throughout the day as American Construction used a crane-mounted vibratory hammer to install (4) 24-inch steel piles from 08:50 PST until 16:15 PST. Approximately 47 total minutes of in-water vibratory pile installation occurred during this monitoring event; the 4th pile installed today was placed behind the concrete wall instead of in the water so the time to install it was not included here. Monitoring concluded for the day at 16:45 PST.

To avoid Level A take during vibratory pile installation, the following shutdown zones were utilized on site:

- 20-meter shutdown zone for harbor seals,
- 10-meter shutdown zone for sea lions, and
- 30-meter shutdown zone for harbor porpoises.



Any of the above species observed within the 11,660-meter monitoring zone during active pile installation was considered a Level B take (IHA Figure 14). An 11,660-meter exclusion zone was utilized to monitor for ESA-listed marine mammals to avoid Level A and Level B take on these species.

No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals were recorded (Table 2). No Level A takes have been associated with the project to date. Level B takes for the project to date are summarized in Table 2 near the end of this report.

No distressed or dying fish were observed during this monitoring event.

Monitoring Crew

Last Name	First Name	Affiliation	Role
McClurg	Kimberly	MSA	Lead PSO
DeCaterina	Bryan	MSA	PSO

Monitoring Methods

Prior to work starting for the day, PSOs communicate with the contractor, American Construction, regarding the pile diameter and type of construction (i.e., impact hammer pile installation, vibratory pile installation, or vibratory pile removal) work that will occur. This informs the PSOs of the exclusion (i.e., shutdown) zone that will be used for the day and determines where the PSOs will be stationed for monitoring.

The PSOs arrive onsite at the pre-determined monitoring stations and begin a 30-minute continuous monitoring cycle. If no species of concern enter or come near to their respective exclusion zones, then the onsite construction supervisor is informed that work may begin for the day. The PSOs monitor continuously during all pile installation and removal. Monitoring continues for 30 minutes after work has ceased to ensure no species of concern were within the Level A and Level B monitoring zones. If marine mammals enter or have been observed near the exclusion zone, during or within 30 minutes of starting pile driving, the lead PSO will notify the onsite construction supervisor, and work must either stop or not begin until the animal(s) have moved outside of the respective zone.

Equipment utilized by PSOs during monitoring included the following: binoculars, spotting scopes, range finders, GPS units, compasses, phones, Whale Alert app, and data sheets to record when and where species of concern were observed.



Monitoring Locations

Two PSOs were stationed at pre-determined locations that allowed for full visibility of the entire exclusion zone between the two of them. Monitoring locations can be seen in Figure 1. The lead PSO was located adjacent to the in-water construction zone, monitoring the narrower Level A take exclusion zones for harbor seals, sea lions, and harbor porpoises, and allowing for quick communication with the onsite construction supervisor. If impact driving occurs, this PSO will be a USFWS-certified marbled murrelet monitor. The second PSO was stationed farther away to the south in Boulevard Park (Figure 1) to monitor the broader exclusion zone for any ESA-listed marine mammals and for any Level B take of the above-mentioned species.

Weather Conditions during Monitoring

The weather conditions during today's monitoring period consisted of foggy conditions with no wind in the morning and sunny skies with a light breeze in the afternoon. Visibility was < 0.5 mile with the foggy conditions in the morning, but the exclusions zones around the site were still visible and, due to the low tide early this morning, the first pile installed was close to the low concrete wall along the shore which was not inundated with water yet. Visibility increased to >6 miles by late morning when water had inundated the area where the rest of the piles would be installed. A Beaufort scale of 1-2 was observed on Bellingham Bay during monitoring with wind speeds between 2-3 knots. The temperature ranged from 58°F to 68°F.

Daily Monitoring Summary

Marine mammals observed at the two monitoring stations during this monitoring event are listed in the monitoring log data sheets (Appendix A). No work shutdowns occurred during this monitoring event; however, some Level B takes for harbor seals were recorded. No distressed or dying fish were observed during this monitoring event.

Level A Take

No Level A takes were recorded during this monitoring event.

Level B Take

Level B take was recorded for harbor seals only today (Table 2); see monitoring data sheets for the full take information (Appendix A).

Table 2. Summary of Level B Take

Species Observed within Level B Zone	Daily Total Number of Level B Takes	Project Total Level B Takes
Harbor seal (<i>Phoca vitulina</i>)	3	197
Harbor porpoise (<i>Phocoena phocoena</i>)	0	7

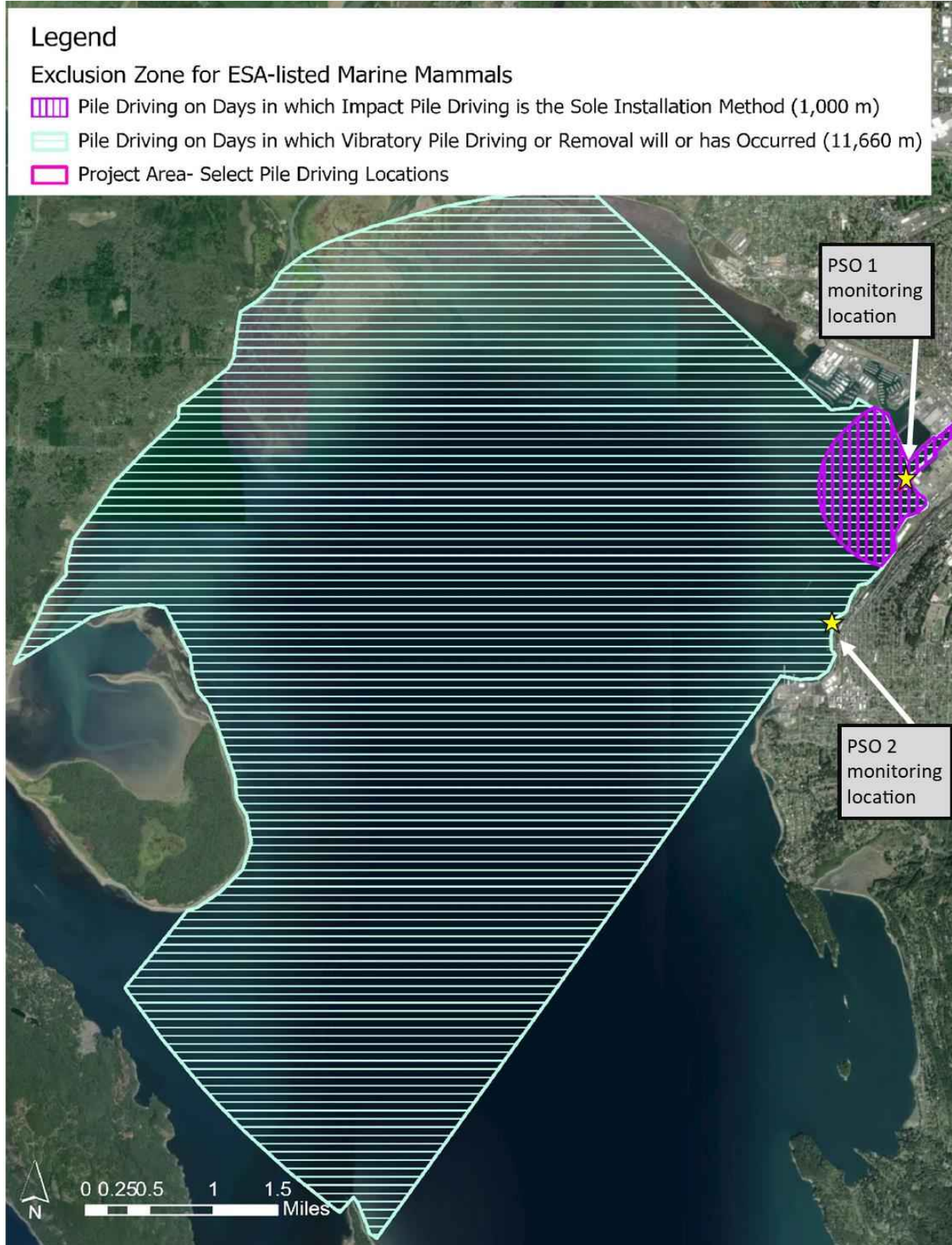


Stellar sea lion (<i>Eumetopias jubatus</i>)	0	1
California sea lion (<i>Zalophus californianus</i>)	0	1

Incorporated BMPs and Mitigation

No distressed or injured marine mammals or fish were observed as a result of the in-water pile driving activities and no Level A take occurred during the day's monitoring events. To aid in the prevention of harming these species, soft starts during pile installation were implemented and oil and debris containment booms were deployed surrounding the project site.

Figure 1. PSO monitoring locations shown on the ESA-listed marine mammal exclusion zone figure from the BST Marine Infrastructure Maintenance and Rehabilitation IHA (credit: Moffatt & Nichol).



Appendix A. Monitoring Data Sheets



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 09/24/24 Sheet 1 of 1 for this day
 Monitor(s): Kimberly McClurg Monitoring Location: on site

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	08:00	foggy, calm	harbor seal	1	50 m west	no vibe work / swimming north
2	08:16	foggy, calm	harbor seal	1	50 m west	no vibe work / swimming around by barge
3	08:41	foggy, calm	harbor seal	1	50 m west	no vibe work / swimming around by barge
4	09:12	foggy, calm	harbor seal	1	90 m south	vibratory installation / looking around
5	12:25	sunny, light breeze	harbor seal	1	100 m south	no vibe work / swimming north
6	12:28	sunny, light breeze	harbor seal	1	90 m southwest	vibratory installation / swimming north
7	12:45	sunny, light breeze	harbor seal	1	80 m west	vibratory installation / swimming south
8	16:01	sunny, light breeze	harbor seal	1	90 m west	no in-water vibe work / swimming south

*B *B *B

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number
 *B = Level B take



Marine Mammal Observation Sheet:

Marine Mammal Observations

Project Name: Bellingham Shipping Terminal

Date: 09/24/24 Sheet 1 of 1 for this day
 Monitor(s): Bryan DeCaterina Monitoring Location: Boulevard Park

Sighting #	Time of Day	Weather	Species	# of Individuals	Location*	Construction Activity/Behavior
1	08:15	foggy, calm	harbor seal	1	100 m west	no vibe work / swimming
2	12:05	sunny, light breeze	harbor seal	2	450 m northwest	no vibe work / swimming
3	12:09	sunny, light breeze	harbor seal	1	300 m northwest	no vibe work / swimming
4	14:20	sunny, light breeze	harbor seal	1	200 m west	no vibe work / swimming

*E.g. Direction, Distance Estimate, or Mark on Figure with Sighting Number
 *B = Level B take