

# **Replace Fendering System, Pier 6, PSNS & IMF Marine Mammal Monitoring**

Prepared for

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# INTRODUCTION

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The Biological Evaluation for N44255-10-D-5021/0006 ~ Replace Fendering System, Pier 6, PSNS & IMF, Bremerton, Washington Project requires that a Marine Mammal Monitoring Plan be followed during all pile driving activity. The plan requires a summary report that contains a brief summary of the marine mammal observations including dates, times, conditions, details of marine mammals observed in the vicinity of the project, animal behavior patterns, and details of any work stoppages resulting from marine mammal presence or weather conditions precluding adequate sighting. The plan also requires that the report contain all field data sheets and logs.

Northwest Environmental conducted marine mammal monitoring at Pier 6 at the Bremerton Naval Shipyard in February 2014 during test impact pile driving activities. This report summarizes efforts, observations, and mitigation activities that were followed during installation of the pilings.

# MONITORING SUMMARY

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## Site Conditions

Pile driving took place at Pier 6 in the Bremerton Navy Shipyard. Pier 6 is about 370 meters long and oriented north to south. The shoreline along the north side of the pier is a seawall and contains poor marine mammal habitat. Some mammal species might use the shoreline for foraging.

Two piles were driven on the east side of Pier 6. The first was about 50 meters from the south end of Pier 6 and the second was 100 meters from the south end of the Pier 6. A range finder was used to help estimate the 10-meter shutdown zone and the 117-meter disturbance zone. Another shipyard pier was located about 90 meters to the east and second pier was located approximately 115 meters to the west. The navy marine security fence was located roughly 85 meters from the south end of Pier 6 and the distance was highly variable along the southern perimeter of the disturbance zone. The security fence started along the edge of the pier to the east and continued to the south for about 230 meters and extended west out of the observation zone. The security fence was within 80 to 130 m from the two test pile locations to the southeast. No photos of the site were taken.

The monitor typically took up a position within 30 meters of the pile being set up or driven, so that the 10 m shutdown zone was completely visible, and the monitor would move occasionally to ensure visibility throughout the 117 m monitoring zone to the east, since the view in that direction was otherwise obstructed by the work barge and crane derrick. Several attempts at observation were made in the western portion of the monitoring zone, west of Pier 6, however this area was mostly obscured by industrial equipment and security exclusion zones, and there were no mammals observed to the west of Pier 6. Once the monitor had scouted for commonly used areas, the monitor focused on positions where the shut-down zone could be observed entirely and where mammals were consistently present (i.e., Navy security fence and the eastern, southeastern, and southern portion of monitoring zone).

## Monitoring Effort

Monitoring took place in February 2014 during the installation of piles from February 18<sup>th</sup> to February 20<sup>th</sup> for a total of 3 days of monitoring. The monitor followed protocol and was on site to complete the 15-minute pre-watch and post-watch scan before the pile driver was operated. Hammer usage was recorded from about the start time to finish time, intermittent hammering was not recorded, unless there was a break in the monitoring.

Table 1 is a summary of dates and times pile driving and monitoring took place. Pile driving was not continuous on the dates worked.

**Table 1 – Pile Driving Dates and Time**

<b>Date</b>	<b>Obs.</b>	<b>Start time</b>	<b>End Time</b>
18-Feb*	GJ	-	-
19-Feb	GJ	12:50	16:54
20-Feb	GJ	8:19	10:34

\* Monitor on site but no pile driving occurred

### Summary of observations

California sea lions were the only marine mammal observed during observations. No Stellar sea lions, southern resident killer whales, or humpback whales were observed. Table 2 – Observation Summary summarizes the number of times each species was sighted, and the number of sightings within the 10 meter (33 feet) shutdown zone and the 117 meter (384 feet) disturbance zone as well as the number of times mitigation was employed. A soft start was used to begin pile driving for each pile. A single observation may include multiple sightings.

**Table 2 – Observation Summary During Impact Pile Driving**

<b>Species</b>	<b>Total No. of Observations Recorded</b>	<b>Total No. of Individuals Recorded</b>	<b>Individuals in Shutdown Zone</b>	<b>Number of Individuals in Disturbance Zone</b>	<b>No. of times Mitigation Delays Occurred</b>
California Sea Lion	6	31	0	24*	0
<b>Total</b>	<b>6</b>	<b>31</b>	<b>0</b>	<b>24</b>	<b>0</b>

\* All individuals were basking on buoys and not observed in the water during pile driving.

All California Sea Lion sightings in the disturbance zone were basking on the marine security fence buoys and were not in the water during pile driving. Therefore, the individuals were not subjected to disturbance from pile driving activities. Copies of field data sheets can be found in Appendix A – Data Sheets and includes sea bird sighting forms.

### Behaviors Observed

Behaviors for California sea lions mainly included basking when hauled out on the security fence buoys. A few individuals were seen climbing onto the buoys, but were not observed entering or exiting the disturbance zone.

## Appendix A – Data Sheets

Marine Mammal Observation Form  
Northwest Environmental Consulting

Observer: Glenn Johnson Date: 2/18/2014 Monitoring Location: Pier 6, Bremerton Page 1 of 1

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pup	Direction of Travel	(meters) Distance to sighting	(meters) Distance from activity	Notes (record environmental conditions including cloud cover, visibility, beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE	1.0	1049	1350	CSL	Basking on float	13	♂ see below	All adult	not traveling	85-170	80-160	100% cloud cover, Visibility = 1 km-2 km, B.S.S. = 2, Ebb Tide. <del>High tide</del> 1330 = Low tide.
PRE	1.1	1050	1350	CSL	Basking resting	4	♂ = 3 ♀ = 1	Adults	not traveling	85-110	80-115	Part of same sighting above, this entry for all animals within disturbance zone of 117m.
PRE	1.2	1050	1350	CSL	Basking resting	9	♂ = 5 ♀ = 4	Adults	not moving	125-190	125-190	This entry for all stationary animals outside 117m disturbance zone.
POST		1350	- left site									At approx 1220 The pile was dropped in to place, no hammering/impact driving today.

Activity: P ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.  
 Species Code: DP Dall's Porpoise GW Gray Whale; HB Humpback Whale; HP Harbor Porpoise; HS Harbor Seal; KW Killer Whale; MW Minke Whale; SL Steller Sea Lion; SO Sea Otter;  
 UMM Unidentified Marine Mammal; U/P Unidentified Pinniped, CSL = Cal. For. Lion Sea Lion  
 Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km)  
 Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.

Marine Mammal Observation Form  
Northwest Environmental Consulting

Observer: Glenn Johnson

Date: 2/19/2014

Monitoring Location: Pier 6, Bremerton

Page 1 of 1

Use separate line for each sighting or recording.

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pupae	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility,beaufort state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE	1.0	1100	1709	CSL	Basking & resting	20	11-males 9-females	All adults	not moving	100-130	90-117	30% cloud cover, visibility >5km, B.Sr.=1-2, Ebb Tide. Basking/resting w/ occasional barking etc.
PRE	2.0	1100	1709	CSL	Basking & resting	11	8-male 3-female	adults	not moving	120-185	120-165	Summary entries for all animals resting within 117m of pile location (above) + all outside (row 3 line)
DP ON		1250	1255									Several hits w/ pile-drive hammer, similar to soft start. Break: 1330-1445
PRE		1445										Same section distribution as earlier.
P ON		1450	1455									Several hits occur, similar to soft start.
PRE	<del>2.0</del>	<del>1630</del>	<del>1620</del> 1709	CSL	Basking & resting	31	<del>20-male</del> 19-male 11-female	Adults	not moving	170-280	150-250	crew moves barge/crane/etc to new location ~100m north, All animals from activity >117m
P ON		1634	1641									soft start conducted over 1634-1637, then a few more hits.
P ON		1654	1654									Several strikes, no movement or other behavioral change from sea lions.
POST		1654	1709									end monitoring at 1709, left pier.

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UMM Unidentified Marine Mammal; UP Unidentified Pinniped.  
Visibility: B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (>15km)  
Sightings: If the same animal is seen on multiple occasions use the 1.1, etc. Each new animal should be done sequentially.

Marine Mammal Observation Form  
Northwest Environmental Consulting

Observer: Glenn Johnson Date: 2/20/2014 Monitoring Location: Pier 6, Bremerton Page 1 of 1

Use separate line for each sighting or recording

Activity	Sighting (1.0 or 1.1 for resight)	Time of Sighting or activity	End of Sighting or activity	Species	Behavior	Number of Animals	Gender of Animal	No. adult, sub-adult, pup	Direction of Travel	Distance to sighting	Distance from activity	Notes (record environmental conditions including cloud cover, visibility, bearing state, and tides at start of shift and note significant changes) record if animals are tagged or marked, react to construction activity, or other observations including other activities in area. Use multiple lines if needed.
PRE	1.0	0803	1049	CSL	Bask/Rest	14	7-male 7-female	Adults	not traveling	150-280	150-260	14 Basking/Resting on Navy Security Fence Buoys. Did not react to pile Drive or other construction activity.
P on		0819	0819									Soft start, several strikes (<1 minute)
P on		0820	0820									Soft start continues,
P on		0821	0821									soft start completed.
P on		0823	0824									Pile Drive on (<2 minutes)
<del>P on</del>		0833	0835									Pile Drive on.
Post		0835	0850									Post-drive monitoring, Break from 0850-1000.
PRE	1.1	1000	1049	CSL	Bask/Rest	14	7-M 7-F	Adults	not traveling	150-280	150-260	Same sea lion distribution as earlier.
P on		1025	1027									Soft start conducted.
P on		1028	1031									Pile Drive on, no behavior change
P on		1033	1034									Pile Drive on, no movement/behavior change.
Post		1034	1049									Post-watch, left Pier at 1052.

Activity: P ON Pile Driver On PRE Pre Watch POST Post Watch M-SD Mitigation Shutdown - note time when hammer starts and comes off pile, not intermittent striking of pile.  
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