Final PSO Report

Revision 1 - 3/5/25

Contract Number – N44255-21-D-D5005 / N4425524-F-4296

Contingent Repairs to Ammo Pier, NMII
Port Hadlock, WA

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References Attached:

Introduction

The Ammunition Wharf is located at the Naval Magazine Indian Island, Port Hadlock, Washington. This project includes the removal and replacement of 21 existing concrete piles with 21 new 24" octagonal concrete piles.

Pile installation consisted of jetting followed by impact hammering piles to required embedment and was performed in accordance with provisions of the LOA and ESA consultations that cover this work (attached).

Pile demolition and installation work commenced October 21, 2024, and was completed on November 1, 2024.

Monitoring was performed in accordance with the Marine Mammal and Marbled Murrelet Monitoring Plans included with contract documents (attached).

Pile Installation Locations and Dates

Pier / Bent Location	Date	Time	Water Conditions	Weather Conditions
C 1.2	10/21/2024 - 10/22/2024	Jetting: 14:21-14:31 Driving: 08:02-08:09	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility
C 5.2	10/21/2024 - 10/21/2024	Jetting: 13:17-13:3 Driving: 15:58-16:13	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility
C 6.2	10/21/2024 - 10/21/2024	Jetting: 10:00-10:37 Driving: 15:35-15:54	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility
C 17.4	10/21/2024	Jetting:	No whitecaps or	Conditions

	- 10/31/2024	10:25-10:39 Driving: 11:42-12:00	other remarkable disturbances	remained at or below Beaufort Sea State 2 with consistent clear visibility
CVA 7 G	10/29/2024 - 10/30/2024	Jetting: 14:43-14:54 Driving: 09:05-09:11	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility
CVA 8 G	10/29/2024 - 10/30/2024	Jetting: 15:46-15:54 Driving: 08:30-08:37	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility
CVA 18.5 F	10/26/2024 - 10/26/2024	Jetting: 13:20-13:36 Driving: 15:32-15:54	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility
CVA 19 B2	10/27/2024 - 10/27/2024	Jetting: 10:07-10:52 Driving: 13:01-13:40	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility
CVA 19 H	10/26/2024 - 10/26/2024	Jetting: 11:56-12:15 Driving: 15:03-15:24	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility
CVA 29 D	10/27/2024 - 10/28/2024	Jetting: 16:41-18:13 Driving: 11:19-11:53	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility
CVA 31 G	10/25/2024 - 11/01/2024	Jetting: 13:57-14:46 Driving: 15:07-16:06	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility

CVA 35.5 F	10/23/2024 - 10/24/2024	Jetting: 08:44-09:40 Driving: 09:07-09:37	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility
CVA 39 D	10/23/2024 - 10/23/2024	Jetting: 13:14-15:00 Driving: 18:10-18:31	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility
N 1.4	10/29/2024 - 10/30/2024	Jetting: 14:35-14:48 Driving: 09:19-09:38	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility
N 4.2	10/28/2024 - 10/28/2024	Jetting: 11:06-11:13 Driving: 12:42-12:51	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility
N 6.1	10/27/2024 - 10/31/2024	Jetting: 14:15-14:24 Driving: 14:51-15:01	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility
N 7.4	10/23/2024 - 10/31/2024	Jetting: 15:38-16:14 Driving: 16:55-17:05	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility
N 11.3	10/25/2024 - 10/25/2024	Jetting: 09:00-09:10 Driving: 10:00-10:12	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility
N 14.2	10/22/2024 - 10/22/2024	Jetting: 13:44-13:50 Driving: 15:58-16:06	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear

				visibility
N 14.3	10/22/2024 - 10/22/2024	Jetting: 14:43-14:49 Driving: 15:37-15:54	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility
N 26.1.9	10/24/2024 - 11/01/2024	Jetting: 14:10-14:23 Driving: 14:48-15:09	No whitecaps or other remarkable disturbances	Conditions remained at or below Beaufort Sea State 2 with consistent clear visibility

Monitoring Methodology

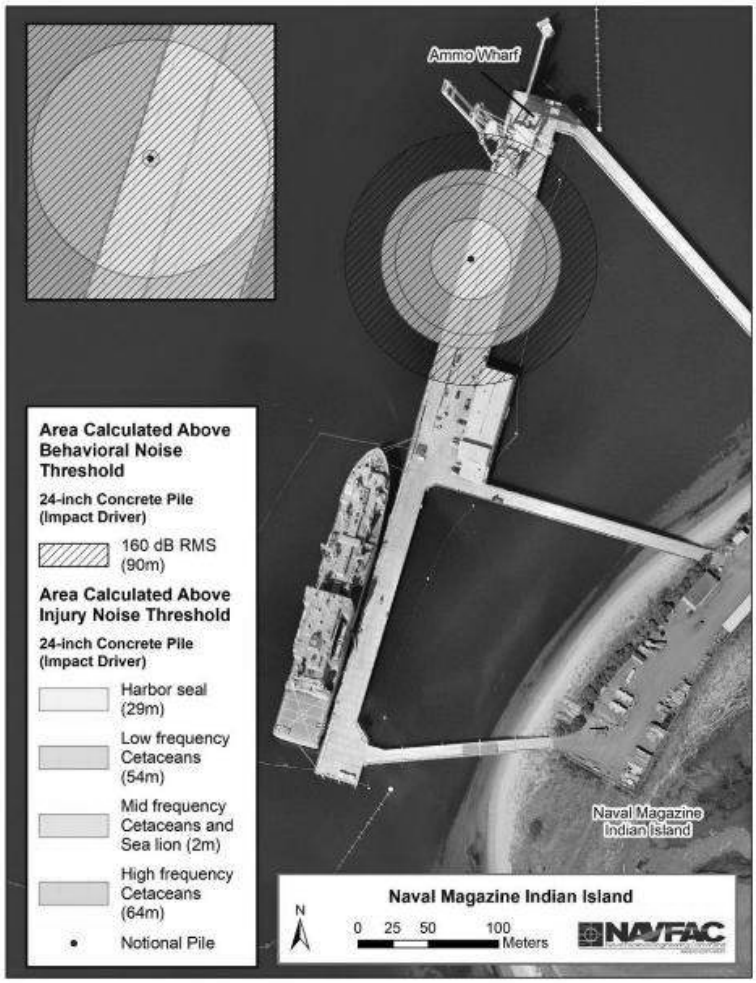
As the pile driving process was primarily jetting, the radius of disturbance to the surrounding wildlife was small for the piles on the center and north access piers. Due to the smaller radius, the required areas could be observed without requiring more than 2 monitors onsite.

Figure 2.3 from the Marine Mammal Monitoring Plan on the next page shows zones for the behavioral noise threshold after jetting has concluded and the team has moved to impact hammer monitoring.

During impact hammer monitoring, monitors would typically stay evenly spaced from the location being driven to cover the entire affected area.

During the impact hammering of a pile on the CVA pier, monitors would typically space out such that one was on the north and center access with full view of the area being impacted.

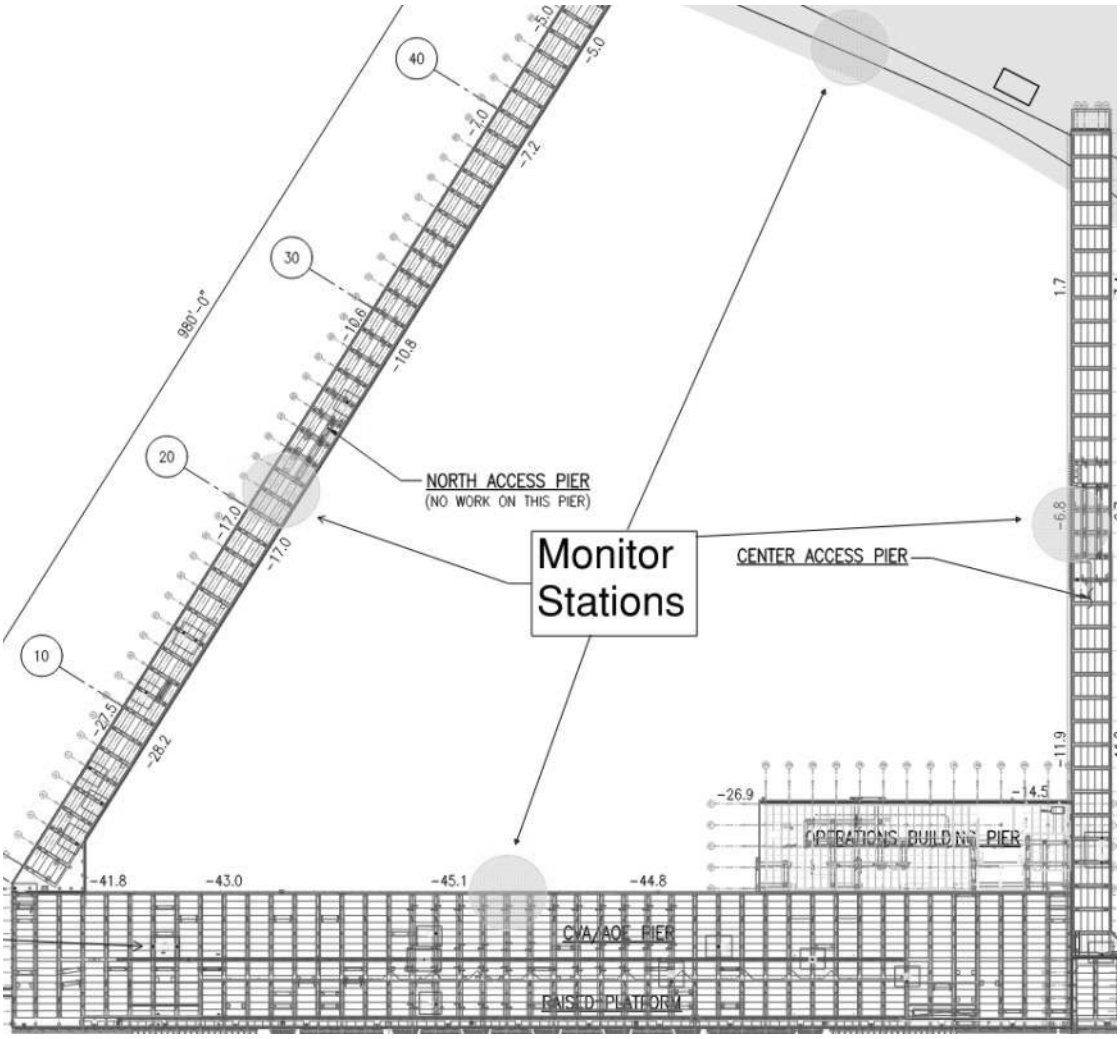
On the following page is a plan view of the Ammunition Pier work locations and areas where monitors were stationed.



Marine Mammal Group	*Behavioral Threshold (meters)*	*Monitoring Zone (meters)*	*Injury Threshold (meters)*	*Shutdown Zone (meters)*
Cetaceans Harbor Porpoise	86	90	64	90
Harbor Seal	86	90	29	30
California Sea Lion	86	90	2	10

Figure 2-3 Summary of Marine Mammal Visual Monitoring and Shutdown Zones for Impact Pile Driving for 24-Inch Concrete Piles

Ammunition Pier Work Locations and Monitor Stations



Summary of Observations

Marbled Murrelet observations during the project:

Marbled Murrelets (MAMU) were observed on multiple occasions during the project (Oct 22, 23, 27, and 28) with no Take being observed. In total, 18 MAMU were observed by the PSO assigned to look for MAMU. All observations were well outside of the monitoring zone (>1.25km) and no MAMU were seen during pile driving operations and no work stoppages were attributed to MAMU observations.

Summary of Marbled Murrelet Observations

Date	*Number of Individuals**	*During Pile Driving? (Y/N)*	*Take? (Y/N)*
10/22/2024	4	N	N
10/23/2024	4	N	N
10/27/2024	2	N	N
10/28/2024	8	N	N

*All observations more than 1.25km from project

Marine Mammal observations during the project:

Marine Mammals were observed on most monitoring days. A total of 19 individuals were observed, with harbor seals accounting for 95% of all individuals observed (18). California sea lions were the only other marine mammal observed, accounting for 5% of all marine mammals seen (1). Harbor seals were observed on 7 out of 11 pile driving days while California sea lions were observed on 1 out of 11 pile driving days. Harbor seals observations were mostly single individuals while one group of 2 and one group of 4 animals were seen. The only California sea lion observation was of a single animal. No marine mammals were observed during pile driving activities and therefore no Take was observed.

Summary of Marine Mammal Observations

Date	Time	Species	Number of Individuals	Distance to Pile (Meters)	Construction Activity	Take? (Y/N)
10/21/24	11:26	Harbor Seal	1	40	No Pile Driving	N
10/21/24	15:27	Harbor Seal	1	50	No Pile Driving	N
10/21/24	15:34	Harbor Seal	1	100	No Pile Driving	N
10/23/24	07:50	Harbor Seal	4	200	No Pile Driving	N
10/24/24	14:45	Harbor Seal	2	150	No Pile Driving	N
10/26/24	09:14	Harbor Seal	1	245	No Pile Driving	N
10/26/24	09:57	Harbor Seal	1	160	No Pile Driving	N
10/27/24	07:45	Harbor Seal	1	150	No Pile Driving	N
10/27/24	09:14	Harbor Seal	1	175	No Pile Driving	N
10/30/24	07:53	Harbor Seal	1	125	No Pile Driving	N
10/30/24	08:26	Harbor Seal	1	125	No Pile Driving	N
10/30/24	09:20	Harbor Seal	1	190	No Pile Driving	N
10/31/24	12:45	California Sea Lion	1	100	No Pile Driving	N
11/01/24	12:30	Harbor Seal	2	200	No Pile Driving	N

Avian Species Observed

Species	4-Letter Species Code	Individuals
American Crow	AMCR	7
American Widgeon	AMWI	14
Bald Eagle	BAEA	3
Belted Kingfisher	BEKI	10
Bonaparte's Gull	BOGU	27
Brandt's Cormorant	BRCO	8
Common Loon	COLO	8
Common Murre	COMU	1
Double-crested Cormorant	DCCO	120
European Starling	EUST	25
Great Blue Heron	GBHE	17
Green-winged Teal	GWTE	1
Harlequin Duck	HADU	35
Herring Gull	HEGU	1
Horned Grebe	HOGR	23
Hybrid Gull	HYGU	288
Killdeer	KILL	1
Mallard	MALL	30
Marbled Murrelet	MAMU	18
Mew Gull	MEGU	9
Northern Pintail	NOPL	31
Pacific Loon	PALO	4
Pelagic Cormorant	PECO	519
Peregrine Falcon	PEFA	2
Pigeon Guillemot	PIGU	52
Red-necked Grebe	RNGR	42
Rock Pigeon	ROPI	52
Surf Scoter	SUSC	119
Unidentified Gull	UNGU	26
Western Grebe	WEGR	106
White-winged Scoter	WWSC	4

Nova Group, Inc.
1305 Lumsden Road
Port Orchard, WA 98367
Phone: (360) 698-4338

Raw Data

Dave Ness
Kersti Muul

Project Name: Indian Isl.

Date: 10/18/2024

Monitoring Location Ammo Pier
(Pier Location, Vessel based, Land Location, other)

Vessel Name: —

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Time Effort Initiated: 830

Time Effort Completed: 1600

Sighting Data

Event Code	Sighting Number (1 or 1.1 if resight)	Time/Duration watching sighting (Start/End time if continuous)	WP# (every time a sighting is made)	Observer	Sighting cue	Species	Dist/ Dir to Animal (from Observer)	Dist to Pile (btwn animal & pile)	# of Animals Group Size (min/max/best)# of Calves	Relative Motion/and Behavior Code (see code sheet)	Const Type During Sighting	Miti gation used during sighting?	Miti gation Type?	Visibility	% Glare	Weath Cond	Sea State and Wave Ht	Swell Dir	Behavior Change/ Response to Activity/Comments
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SS SD V I PC DP ST NONE	Y N	DE SD	E P M G I			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SS SD V I PC DP ST NONE	Y N	DE SD	E P M G I			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SS SD V I PC DP ST NONE	Y N	DE SD	E P M G I			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SS SD V I PC DP ST NONE	Y N	DE SD	E P M G I			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SS SD V I PC DP ST NONE	Y N	DE SD	E P M G I			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SS SD V I PC DP ST NONE	Y N	DE SD	E P M G I			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SS SD V I PC DP ST NONE	Y N	DE SD	E P M G I				N or S W or E	

Sighting #=chronological number of sightings, if resight of same animal, then 1.1, 1.2, etc. WP (Waypoint)=GPS recording of lat/long, time/date stamp. Critical for vessel observers.

Onsite but no pile driving

Project Name: Indian Isl.

Date: 10/19/2024

Monitoring Location: Ammo Pier
(Pier Location, Vessel based, Land Location, other)

Vessel Name: —

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Time Effort Initiated: ___________

Time Effort Completed: ___________

Dave Ness
Kersti Muul

Sighting Data

Event Code	Sighting Number (1 or 1.1 if resight)	Time/Duration watching sighting (Start/End time if continuous)	WP # (every time a sighting is made)	Observer	Sighting cue	Species	Dist/ Dir to Animal (from Observer)	Dist to Pile (btwn animal & pile)	# of Animals Group Size (min/max/best)# of Calves	Relative Motion/and Behavior Code (see code sheet)	Const Type During Sighting	Mitigation used during sighting?	Mitigation Type?	Visibility	% Glare	Weath Cond	Sea State and Wave Ht	Swell Dir	Behavior Change/ Response to Activity/Comments
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSV SP V I PC DP ST NONE	Y N	DE SD	B P M G E			Light Med Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSV SP V I PC DP ST NONE	Y N	DE SD	B P M G E			Light Med Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSV SP V I PC DP ST NONE	Y N	DE SD	B P M G E			Light Med Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSV SP V I PC DP ST NONE	Y N	DE SD	B P M G E			Light Med Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSV SP V I PC DP ST NONE	Y N	DE SD	B P M G E			Light Med Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSV SP V I PC DP ST NONE	Y N	DE SD	B P M G E			Light Med Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSV SP V I PC DP ST NONE	Y N	DE SD	B P M G E				N or S W or E	

Sighting #=chronological number of sightings, if resight of same animal, then 1.1, 1.2, etc WP (Waypoint)=GPS recording of lat/long, time/date stamp. Critical for vessel observers.

Pile driving canceled due to weather

Project Name: Indian Isl.

Date: 10/20/2024

Monitoring Location: Ammo Pier
(Pier Location, Vessel based, Land Location, other)

Vessel Name: —

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Time Effort Initiated: ______

Time Effort Completed: ______

Dave Ness
Kersti Muul

Sighting Data

Event Code	Sighting Number (1 or 1.1 if resight)	Time/Duration watching sighting (Start/End time if continuous)	WP# (every time a sighting is made)	Observer	Sighting cue	Species	Dist/ Dir to Animal (from Observer)	Dist to Pile (btwn animal & pile)	# of Animals Group Size (min/max/best)# of Calves	Relative Motion/and Behavior Code (see code sheet)	Const Type During Sighting	Miti gation used during sighting?	Miti gation Type?	Visibility	% Glare	Weath Cond	Sea State and Wave Ht	Swell Dir	Behavior Change/ Response to Activity/Comments
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSL SSI VI PC DP ST NONE	Y N	DE SD	E P M G			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSL SSI VI PC DP ST NONE	Y N	DE SD	E P M G			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSL SSI VI PC DP ST NONE	Y N	DE SD	E P M G			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSL SSI VI PC DP ST NONE	Y N	DE SD	E P M G			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSL SSI VI PC DP ST NONE	Y N	DE SD	E P M G			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSL SSI VI PC DP ST NONE	Y N	DE SD	E P M G			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSL SSI VI PC DP ST NONE	Y N	DE SD	E P M G				N or S W or E	

Sighting #=chronological number of sightings, if resight of same animal, then 1.1, 1.2, etc. WP (Waypoint)=GPS recording of lat/long, time/date stamp. Critical for vessel observers.

Pile Driving canceled due to weather

Dave Ness
Kersti Muul

Project Name: Indian Isl.

Date: 10/21/2024

Monitoring Location: Ammo Pier
(Pier Location, Vessel based, Land Location, other)

Vessel Name: —

Page 1 of 1

Time Effort Initiated: 810

Time Effort Completed: 1830

Sighting Data

Event Code	Sighting Number (1 or 1.1 if resight)	Time/Duration watching sighting (Start/End time if continuous)	WP# (every time a sighting is made)	Observer	Sighting cue	Species	Dist/Dir to Animal (from Observer)	Dist to Pile (btwn animal & pile)	# of Animals Group Size (min/max/best)# of Calves	Relative Motion/and Behavior Code (see code sheet)	Const Type During Sighting	Mitigation used during sighting?	Mitigation Type?	Visibility	% Glare	Weath Cond	Sea State and Wave Ht	Swell Dir	Behavior Change/ Response to Activity/Comments
S	1	11:26:	/	Dave	SPY	HSEA	m or km ° 70	(m) or km 40	1 / 1 / 1 calves	opening closing parallel (none)	PRE POST SS SD V I PC DP ST (NONE)	Y (N)	DE SD	E F M (G) P	0	C	(0) Light Mod Heavy	N or S W or E	—
S	2	15:27:	/	Dave	SPY	HSEA	m or km ° 80	(m) or km 50	1 / 1 / 1 __ calves	opening closing parallel (none)	PRE POST SS SD V I PC DP ST (NONE)	Y (N)	DE SD	E F M (G) P	0	C	(0) Light Mod Heavy	N or S W or E	—
S	2.1	15:34:	/	Kerst.	SPY	HSEA	m or km ° 125	(m) or km 100	1 / 1 / 1 __ calves	opening closing parallel (none)	PRE POST SS SD V I PC DP ST (NONE)	Y (N)	DE SD	E F M (G) P	0	C	(0) Light Mod Heavy	N or S W or E	—
		: : / : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SS SD V I PC DP ST NONE	Y N	DE SD	E F M G P			Light Mod Heavy	N or S W or E	
		: : / : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SS SD V I PC DP ST NONE	Y N	DE SD	E F M G P			Light Mod Heavy	N or S W or E	
		: : / : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SS SD V I PC DP ST NONE	Y N	DE SD	E F M G P			Light Mod Heavy	N or S W or E	
		: : / : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SS SD V I PC DP ST NONE	Y N	DE SD	E F M G P				N or S W or E	

Sighting #=chronological number of sightings, if resight of same animal, then 1.1, 1.2, etc. WP (Waypoint)=GPS recording of lat/long, time/date stamp. Critical for vessel observers.

Project Name: Indian Isl.

Date: 10/22/2024

Monitoring Location Ammo Pier
(Pier Location, Vessel based, Land Location, other)

Vessel Name: –

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Time Effort Initiated: 800

Time Effort Completed: 1600

Sighting Data

Event Code	Sighting Number (1 or 1.1 if resight)	Time/Duration watching sighting (Start/End time if continuous)	WP# (every time a sighting is made)	Observer	Sighting cue	Species	Dist/ Dir to Animal (from Observer)	Dist to Pile (btwn animal & pile)	# of Animals Group Size (min/max/best)# of Calves	Relative Motion/and Behavior Code (see code sheet)	Const Type During Sighting	Miti gation used during sighting?	Miti gation Type?	Visibility	% Glare	Weath Cond	Sea State and Wave Ht	Swell Dir	Behavior Change/ Response to Activity/Comments
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SS SP VI PL DP ST NONE	Y N	DE SD	E F M G P			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SS SP VI PL DP ST NONE	Y N	DE SD	E F M G P			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SS SP VI PL DP ST NONE	Y N	DE SD	E F M G P			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SS SP VI PL DP ST NONE	Y N	DE SD	E F M G P			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SS SP VI PL DP ST NONE	Y N	DE SD	E F M G P			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SS SP VI PL DP ST NONE	Y N	DE SD	E F M G P			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SS SP VI PL DP ST NONE	Y N	DE SD	E F M G P				N or S W or E	

Sighting #=chronological number of sightings, if resight of same animal, then 1.1, 1.2, etc. WP (Waypoint)=GPS recording of lat/long, time/date stamp Critical for vessel observers

No marine mammals seen

Project Name: Indian Isl.

Date: 10/23/2024

Monitoring Location: Ammo Pier
(Pier Location, Vessel based, Land Location, other)

Vessel Name: —

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Time Effort Initiated: 810

Time Effort Completed: 1830

Kersti Muul
Kari Williamson

Sighting Data

Event Code	Sighting Number (1 or 1.1 if resight)	Time/Duration watching sighting (Start/End time if continuous)	WP # (every time a sighting is made)	Observer	Sighting cue	Species	Dist/ Dir to Animal (from Observer)	Dist to Pile (btwn animal & pile)	# of Animals Group Size (min/max/best)# of Calves	Relative Motion/and Behavior Code (see code sheet)	Const Type During Sighting	Mitigation used during sighting?	Mitigation Type?	Visibility	% Glare	Weath Cond	Sea State and Wave Ht	Swell Dir	Behavior Change/ Response to Activity/Comments
Pre	1	7:50:	/	Kerst.	forage	HSEA	(m) or km 220°	(m) or km 200	/4/ __ calves	opening closing parallel (none)	(PRE) POST SW SP V I PC DP ST NONE	Y (N)	DE SD	(G)	0	C	0	N or S W or E	—
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SW SP V I PC DP ST NONE	Y N	DE SD				Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SW SP V I PC DP ST NONE	Y N	DE SD				Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SW SP V I PC DP ST NONE	Y N	DE SD				Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SW SP V I PC DP ST NONE	Y N	DE SD				Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SW SP V I PC DP ST NONE	Y N	DE SD				Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SW SP V I PC DP ST NONE	Y N	DE SD					N or S W or E	

Sighting #=chronological number of sightings, if resight of same animal, then 1.1, 1.2, etc. WP (Waypoint)=GPS recording of lat/long, time/date stamp. Critical for vessel observers.

Kersti Moul
Kari Williamson

Project Name: Indian Isl.

Date: 10/24/2024

Monitoring Location Ammo Pier
(Pier Location, Vessel based, Land Location, other)

Vessel Name: —

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Time Effort Initiated: 815

Time Effort Completed: 1600

Sighting Data

Event Code	Sighting Number (1 or 1.1 if resight)	Time/Duration watching sighting (Start/End time if continuous)	WP # (every time a sighting is made)	Observer	Sighting cue	Species	Dist/ Dir to Animal (from Observer)	Dist to Pile (btwn animal & pile)	# of Animals Group Size (min/max/best)# of Calves	Relative Motion/and Behavior Code (see code sheet)	Const Type During Sighting	Mitigation used during sighting?	Mitigation Type?	Visibility	% Glare	Weath Cond	Sea State and Wave Ht	Swell Dir	Behavior Change/ Response to Activity/Comments
S	1	14:45 :	/	Kersti	Spt	ASEA	m or km 125 °	m or km 150	1/2/1 __ calves	opening closing parallel none	PRE POST SSL SD V I PC DP ST NONE	Y N	DE SD	E G M P	0	PC	Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSL SD V I PC DP ST NONE	Y N	DE SD	E G M P			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSL SD V I PC DP ST NONE	Y N	DE SD	E G M P			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSL SD V I PC DP ST NONE	Y N	DE SD	E G M P			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSL SD V I PC DP ST NONE	Y N	DE SD	E G M P			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSL SD V I PC DP ST NONE	Y N	DE SD	E G M P			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSL SD V I PC DP ST NONE	Y N	DE SD	E G M P				N or S W or E	

Sighting #=chronological number of sightings, if resight of same animal, then 1.1, 1.2, etc. WP (Waypoint)=GPS recording of lat/long, time/date stamp. Critical for vessel observers.

Dave Ness
Kari Williamson

Project Name: Indian Isl.

Date: 10/25/2024

Monitoring Location: Ammo Pier
(Pier Location, Vessel based, Land Location, other)

Vessel Name: —

Page 1 of 1

Time Effort Initiated: 800

Time Effort Completed: 1600

Sighting Data

Event Code	Sighting Number (1 or 1.1 if resight)	Time/Duration watching sighting (Start/End time if continuous)	WP # (every time a sighting is made)	Observer	Sighting cue	Species	Dist/ Dir to Animal (from Observer)	Dist to Pile (btwn animal & pile)	# of Animals Group Size (min/max/best)# of Calves	Relative Motion/and Behavior Code (see code sheet)	Const Type During Sighting	Mitigation used during sighting?	Mitigation Type?	Visibility	½ Glare	Weath Cond	Sea State and Wave Ht	Swell Dir	Behavior Change/ Response to Activity/Comments
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSI SD V I PC DP ST NONE	Y N	DE SD	E P M G I			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSI SD V I PC DP ST NONE	Y N	DE SD	E P M G I			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSI SD V I PC DP ST NONE	Y N	DE SD	E P M G I			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSI SD V I PC DP ST NONE	Y N	DE SD	E P M G I			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSI SD V I PC DP ST NONE	Y N	DE SD	E P M G I			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSI SD V I PC DP ST NONE	Y N	DE SD	E P M G I			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSI SD V I PC DP ST NONE	Y N	DE SD	E P M G I				N or S W or E	

Sighting #=chronological number of sightings, If resight of same animal, then 1.1, 1.2, etc WP (Waypoint=GPS recording of lat/long, time/date stamp Critical for vessel observers

No marine mammals seen

Project Name: Indian Isl.

Date: 10/26/2024

Monitoring Location: Ammo Pier
(Pier Location, Vessel based, Land Location, other)

Vessel Name: ✓

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Time Effort Initiated: 830

Time Effort Completed: 1630

Dave Ness
Kori Williamson

Sighting Data

Event Code	Sighting Number (1 or 1.1 if resight)	Time/Duration watching sighting (Start/End time if continuous)	WP# (every time a sighting is made)	Observer	Sighting cue	Species	Dist/Dir to Animal (from Observer)	Dist to Pile (btwn animal & pile)	# of Animals Group Size (min/max/best)# of Calves	Relative Motion/and Behavior Code (see code sheet)	Const Type During Sighting	Mitigation used during sighting?	Mitigation Type?	Visibility	% Glare	Weath Cond	Sea State and Wave Ht	Swell Dir	Behavior Change/ Response to Activity/Comments
Pre	1	9:14	✓	Dave	SPY	HSEA	m (circled) 210°	m (circled) 245	1/1/1 ___ calves	opening closing parallel none	PRE (circled)	Y N (N circled)	DE SD	(circled)	0	L	(circled) Light Mod Heavy	N or S (S circled) W or E	✓
S	1.1	9:57	✓	Dave	Spy	HSEA	m (circled) 115°	m or km 160	1/1/1 ___ calves	opening closing parallel none	(circled)	Y N (N circled)	DE SD	(circled)	0	OC	(circled) Light Mod Heavy	N or S (S circled) W or E	✓
		: :					m or km °	m or km	/ / ___ calves	opening closing parallel none		Y N	DE SD				Light Mod Heavy	N or S W or E	
		: :					m or km °	m or km	/ / ___ calves	opening closing parallel none		Y N	DE SD				Light Mod Heavy	N or S W or E	
		: :					m or km °	m or km	/ / ___ calves	opening closing parallel none		Y N	DE SD				Light Mod Heavy	N or S W or E	
		: :					m or km °	m or km	/ / ___ calves	opening closing parallel none		Y N	DE SD				Light Mod Heavy	N or S W or E	
		: :					m or km °	m or km	/ / ___ calves	opening closing parallel none		Y N	DE SD					N or S W or E	

Sighting #=chronological number of sightings. If resight of same animal, then 1.1, 1.2, etc. WP (Waypoint)=GPS recording of lat/long, time/date stamp. Critical for vessel observers.

Dave Ness
Kari Williamson

Project Name: Indian Isl.

Date: 10/27/2024

Monitoring Location: Ammo Pier
(Pier Location, Vessel based, Land Location, other)

Vessel Name: —

Page 1 of 1

Time Effort Initiated: 0730

Time Effort Completed: 1730

Sighting Data

Event Code	Sighting Number (1 or 1.1 if resight)	Time/Duration watching sighting (Start/End time if continuous)	WP# (every time a sighting is made)	Observer	Sighting cue	Species	Dist/ Dir to Animal (from Observer)	Dist to Pile (btwn animal & pile)	# of Animals Group Size (min/max/best)# of Calves	Relative Motion/and Behavior Code (see code sheet)	Const Type During Sighting	Mitigation used during sighting?	Mitigation Type?	Visibility	% Glare	Weath Cond	Sea State and Wave Ht	Swell Dir	Behavior Change/ Response to Activity/Comments
Pre	1	07:45:	/	Kari	Spicing	HSEA	m or km 125 °	m or km 150	/|/ __ calves	opening closing parallel none		Y N	DE SD	0	0	PC	[circled]	N or S W or E	/
S	1.1	9:14:	/	Dave	Spy	HSEA	m or km 150 °	m or km 175	/|/ __ calves	opening closing parallel none	[circled]	Y N [circled]	DE SD	0	0	PC	[circled]	N or S W or E	/
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none		Y N	DE SD				Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none		Y N	DE SD				Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none		Y N	DE SD				Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none		Y N	DE SD				Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none		Y N	DE SD					N or S W or E	

Sighting #=chronological number of sightings, if resight of same animal, then 1.1, 1.2, etc. WP (Waypoint)=GPS recording of lat/long, time/date stamp Critical for vessel observers.

Dave Ness
Kari Williamson

Project Name: Indian Isl.

Date: 10/28/2024

Monitoring Location: Ammo Pier
(Pier Location, Vessel based, Land Location, other)

Vessel Name: —

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Time Effort Initiated: 730

Time Effort Completed: 1600

Sighting Data

Event Code	Sighting Number (1 or 1.1 if resight)	Time/Duration watching sighting (Start/End time if continuous)	WP# (every time a sighting is made)	Observer	Sighting cue	Species	Dist/ Dir to Animal (from Observer)	Dist to Pile (btwn animal & pile)	# of Animals Group Size (min/max/best)# of Calves	Relative Motion/and Behavior Code (see code sheet)	Const Type During Sighting	Mitigation used during sighting?	Mitigation Type?	Visibility	% Glare	Weath Cond	Sea State and Wave Ht	Swell Dir	Behavior Change/ Response to Activity/Comments
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	[illegible]	Y N	DE SD	[illegible]			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	[illegible]	Y N	DE SD	[illegible]			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	[illegible]	Y N	DE SD	[illegible]			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	[illegible]	Y N	DE SD	[illegible]			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	[illegible]	Y N	DE SD	[illegible]			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	[illegible]	Y N	DE SD	[illegible]			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	[illegible]	Y N	DE SD	[illegible]				N or S W or E	

Sighting #=chronological number of sightings, if resight of same animal, then 1.1, 1.2, etc. WP (Waypoint)=GPS recording of lat/long, time/date stamp. Critical for vessel observers.

No marine mammals seen

Project Name: Indian Isl.

Date: 10/29/2024

Monitoring Location: Ammo Pier
(Pier Location, Vessel based, Land Location, other)

Vessel Name: —

Page 1 of 1

Time Effort Initiated: ______

Time Effort Completed: ______

Kersti Mul
Dave Ness

Sighting Data

Event Code	Sighting Number (1 or 1.1 if resight)	Time/Duration watching sighting (Start/End time if continuous)	WP# (every time a sighting is made)	Observer	Sighting cue	Species	Dist/ Dir to Animal (from Observer)	Dist to Pile (btwn animal & pile)	# of Animals Group Size (min/max/best)# of Calves	Relative Motion/and Behavior Code (see code sheet)	Const Type During Sighting	Mitigation used during sighting?	Mitigation Type?	Visibility	% Glare	Weath Cond	Sea State and Wave Ht	Swell Dir	Behavior Change/ Response to Activity/Comments
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SW SP V FPS DP ST NONE	Y N	DE SD	E F M G P			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SW SP V FPS DP ST NONE	Y N	DE SD	E F M G P			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SW SP V FPS DP ST NONE	Y N	DE SD	E F M G P			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SW SP V FPS DP ST NONE	Y N	DE SD	E F M G P			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SW SP V FPS DP ST NONE	Y N	DE SD	E F M G P			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SW SP V FPS DP ST NONE	Y N	DE SD	E F M G P			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SW SP V FPS DP ST NONE	Y N	DE SD	E F M G P				N or S W or E	

Sighting #=chronological number of sightings, if resight of same animal, then 1.1, 1.2, etc WP (Waypoint)=GPS recording of lat/long, time/date stamp Critical for vessel observers

On standby - no pile driving

Dave Ness
Kersti Muul

Project Name: Indian Isl.

Date: 10/30/2024

Monitoring Location: Ammo Pier
(Pier Location, Vessel based, Land Location, other)

Vessel Name: ______

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Time Effort Initiated: 800

Time Effort Completed: 1600

Sighting Data

Event Code	Sighting Number (1 or 1.1 if resight)	Time/Duration watching sighting (Start/End time if continuous)	WP# (every time a sighting is made)	Observer	Sighting cue	Species	Dist/ Dir to Animal (from Observer)	Dist to Pile (btwn animal & pile)	# of Animals Group Size (min/max/best)# of Calves	Relative Motion/and Behavior Code (see code sheet)	Const Type During Sighting	Mitigation used during sighting?	Mitigation Type?	Visibility	% Glare	Weath Cond	Sea State and Wave Ht	Swell Dir	Behavior Change/ Response to Activity/Comments
Pre	1	07:53 :		Kersti	Spieing	HSEA	m or km 100 °	m or km 125	1/2/1 __ calves	opening closing parallel none	PRE POST SSL SP V I PL DP ST NONE	Y N	DE SD	[illegible]	0	C	[illegible]	N or S W or E	—
	1.1	8 : 26 :		Kerst.	Spicing	HSEA	m or km 100 °	m or km 125	1/1/1 __ calves	opening closing parallel none	PRE POST SSL SP V I PL DP ST NONE	Y N	DE SD	[illegible]	0	C	[illegible]	N or S W or E	—
	1.2	9 : 20 :		Kersti	Spicing	HSEA	m or km 150 °	m or km 190	1/1/1 __ calves	opening closing parallel none	PRE POST SSL SP V I PL DP ST NONE	Y N	DE SD	[illegible]	0	C	[illegible]	N or S W or E	—
		: : / : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSL SP V I PL DP ST NONE	Y N	DE SD				Light Mod Heavy	N or S W or E	
		: : / : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSL SP V I PL DP ST NONE	Y N	DE SD				Light Mod Heavy	N or S W or E	
		: : / : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSL SP V I PL DP ST NONE	Y N	DE SD				Light Mod Heavy	N or S W or E	
		: : / : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSL SP V I PL DP ST NONE	Y N	DE SD					N or S W or E	

Sighting #=chronological number of sightings, If resight of same animal, then 1.1, 1.2, etc. WP (Waypoint)=GPS recording of lat/long, time/date stamp. Critical for vessel observers.

Kersti Moul
Kari Williamson

Project Name: Indian Isl.

Date: 10/31/2024

Monitoring Location: Ammo Pier
(Pier Location, Vessel based, Land Location, other)

Vessel Name: —

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Time Effort Initiated: 730

Time Effort Completed: 1430

Sighting Data

Event Code	Sighting Number (1 or 1.1 if resight)	Time/Duration watching sighting (Start/End time if continuous)	WP # (every time a sighting is made)	Observer	Sighting cue	Species	Dist/ Dir to Animal (from Observer)	Dist to Pile (btwn animal & pile)	# of Animals Group Size (min/max/best)# of Calves	Relative Motion/and Behavior Code (see code sheet)	Const Type During Sighting	Miti gation used during sighting?	Miti gation Type?	Visibility	% Glare	Weath Cond	Sea State and Wave Ht	Swell Dir	Behavior Change/ Response to Activity/Comments
None	1	12:45: : :	/	Kersti	Forage	CASL	100 m	70 m	/1/ __ calves	parallel (circled)	NONE (circled)	N (circled)	DE SD	0	0	PL	Light (circled)	S (circled)	/
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSI SSI V I PC OP ST NONE	Y N	DE SD				Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSI SSI V I PC OP ST NONE	Y N	DE SD				Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSI SSI V I PC OP ST NONE	Y N	DE SD				Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSI SSI V I PC OP ST NONE	Y N	DE SD				Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSI SSI V I PC OP ST NONE	Y N	DE SD				Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSI SSI V I PC OP ST NONE	Y N	DE SD					N or S W or E	

Sighting #=chronological number of sightings. If resight of same animal, then 1.1, 1.2, etc. WP (Waypoint)=GPS recording of lat/long, time/date stamp. Critical for vessel observers.

Project Name: Indian Isl.

Date: 11/1/2024

Monitoring Location: Ammo Pier
(Pier Location, Vessel based, Land Location, other) ✓

Vessel Name: ____________

Page 1 of 1

Time Effort Initiated: 1230

Time Effort Completed: 1500

Kersti Muul
Kari Williamson

Sighting Data

Event Code	Sighting Number (1 or 1.1 if resight)	Time/Duration watching sighting (Start/End time if continuous)	WP # (every time a sighting is made)	Observer	Sighting cue	Species	Dist/Dir to Animal (from Observer)	Dist to Pile (btwn animal & pile)	# of Animals Group Size (min/max/best) # of Calves	Relative Motion/and Behavior Code (see code sheet)	Const Type During Sighting	Mitigation used during sighting?	Mitigation Type?	Visibility	% Glare	Weath Cond	Sea State and Wave Ht	Swell Dir	Behavior Change/ Response to Activity/Comments
Pre	1	12:30: / : :	[illegible]	Kersti	Spieing	HSEA	200 m	200 m	/2/ __ calves	opening closing parallel (none)	(PRE) POST / SSL SD / VI I PS DP / ST NONE	Y / (N)	DE / SD	E F / M / (P)	NA	OC	(Light) Mod Heavy	N or S / W or (E)	—
		: : / : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST / SSL SD / VI I PS DP / ST NONE	Y / N	DE / SD	E F / M / P I			Light Mod Heavy	N or S / W or E	
		: : / : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST / SSL SD / VI I PS DP / ST NONE	Y / N	DE / SD	E F / M / P I			Light Mod Heavy	N or S / W or E	
		: : / : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST / SSL SD / VI I PS DP / ST NONE	Y / N	DE / SD	E F / M / P I			Light Mod Heavy	N or S / W or E	
		: : / : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST / SSL SD / VI I PS DP / ST NONE	Y / N	DE / SD	E F / M / P I			Light Mod Heavy	N or S / W or E	
		: : / : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST / SSL SD / VI I PS DP / ST NONE	Y / N	DE / SD	E F / M / P I			Light Mod Heavy	N or S / W or E	
		: : / : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST / SSL SD / VI I PS DP / ST NONE	Y / N	DE / SD	E F / M / P I				N or S / W or E	

Sighting #=chronological number of sightings, if resight of same animal, then 1.1, 1.2, etc. WP (Waypoint)=GPS recording of lat/long, time/date stamp. Critical for vessel observers.

Seabird Monitoring Data Collection Form Date Oct. 23, 2024

Project Name Indian Island Ammo Pier Monitoring Site/Transect ID NE corner of pier

Observers Kari Williamson

Activity Seabird Survey Time and Duration 1200 scan for 10 min

Time	Species	# of birds	Wind speed (Beaufort Marine scale)	Land Observer: Grid Location	Boat Observer: Distance	Boat Observer: Land/Sea Ward	Observed Behavior*	Comments
1200	HADU	5	2	X			R, F, P	viewed from NE
↓	PIGU	7	↓	↓			↓	pier corner –
	MEGU	2					↓	scan out to fence
	HyGU	14						barrier w/ binos.
	PECO	67						
	DCCO	22						
	WWSC	4					F	fly by
	BRCO	1						
	HEGU	1						
	BEKI	1						

* R=resting F=feeding/diving P=preening Y=flying/flushing T=transient N=nesting O=other

F fly by

RODO 4

AMCR 2

Seabird Monitoring Data Collection Form

Date Oct 24, 2024

Project Name Indian Island Ammo Pier Monitoring Site/Transect ID NE corner of pier

Observers Kari Williamson, Kersti Munk

Activity Seabird Survey Time and Duration 900 scan for ~10 min

Time	Species	# of birds	Wind speed (Beaufort Marine scale)	Land Observer: Grid Location	Boat Observer: Distance	Boat Observer: Land/Sea Ward	Observed Behavior*	Comments
900	MEGU	3	1	X ↓			F	viewed from E
↓	HYGU	30	↓				F	pier & scanned
	SUSC	15					R, F, P	out to fence
	PIGU	14					↓	barrier w/ binos
	DCLO	16						
	PECO	46						
	HADU	3						
	COLO	1						
	BEKI	2						
	KILLDEER	1						

1200-10 am
calm Beau 0

GULLS 7
PECO 5
PIGU 6
HOGR 1
RNGR 5
COLO 1
PECO 43
SUSC 10
AMOY 3

* R=resting F=feeding/diving P=preening Y=flying/flushing T=transient N=nesting O=other

Seabird Monitoring Data Collection Form

Date Oct. 25, 2024

Project Name Indian Island Army Pier **Monitoring Site/Transect ID** N. pier

Observers Kari Williamson

Activity Seabird Survey **Time and Duration** 0900 for 10 min

Time	Species	# of birds	Wind speed (Beaufort Marine scale)	Land Observer: Grid Location	Boat Observer: Distance	Boat Observer: Land/Sea Ward	Observed Behavior*	Comments
0900	Gulls	4	10 calm	X1			F,R,T,P	
↓	MEGU	1	↓	↓			↓	
↓	HOGR	1						
	RNGR	7						
	PIGU	8						
	PELO	13						
	PELO	1						
	HAOY	3						
	SUSC	2						
	AMCR	2						

1330-10 min
Bleach 0
Gulls 15
PELO 26
SUSC 10
HOGR 1
PIGU 2
RNGR 2
COLO 1

from N. pier

* R=resting F=feeding/diving P=preening Y=flying/flushing T=transient N=nesting O=other

Seabird Monitoring Data Collection Form

Date Oct. 26, 2024

Project Name Indian Island Ammo Pier Monitoring Site/Transect ID N. pier

Observers Keri Williamson w/ Dave Ness

Activity Seabird Survey Time and Duration 1230 for 10 min - 300' out

Time	Species	# of birds	Wind speed (Beaufort Marine scale)	Land Observer	Boat Observer		Observed Behavior*	Comments
				Grid Location	Distance	Land/Sea Ward		
1230	HYGU	20	2-3				F,R,Y,P	
↓	MEGU	2	↓				↓	
	BOGU	2						
	AMWI	8						
	PECO	48						
	DCCO	10						
	BRCO	6						
	PIGU	5						
	HADU	5						
	RNGR	12						
	SUSL	15						

* R=resting F=feeding/diving P=preening Y=flying/flushing T=transient N=nesting O=other

HOGR 2

COLO 2

Seabird Monitoring Data Collection Form

Date Oct. 27, 2024

Project Name Indian Island Ammo Pier Monitoring Site/Transect ID mid N. pier

Observers Kari Williamson

Activity Seabird Survey Time and Duration 1045 for 10 min

Time	Species	# of birds	Wind speed (Beaufort Marine scale)	Land Observer: Grid Location	Boat Observer: Distance	Boat Observer: Land/Sea Ward	Observed Behavior*	Comments
1045	HyGu	8	0				F,R,Y,P	
	HOGR	7					↓	
	PECO	45						
	HAOY	2						
	RNGR	6						
	PIGU	4						
	SUSC	3						
	AMLO	2						farther out
	MAMU	2						farther out
	BAEA	1						
	BEKI	1						

* R=resting F=feeding/diving P=preening Y=flying/flushing T=transient N=nesting O=other

w/ Dive Resp 705 (10 min) NE corner

HOGR 1
MEGU 1
HAOY 2
HyGu 69
DCCO 1
PECO 155
BRCO 1
SUSC 16
RNGR 11
BEKI 2

NOPI 20

fly by

Seabird Monitoring Data Collection Form

Date Oct. 28, 2024

Project Name Indian Island Ammo Pier Monitoring Site/Transect ID NE corner of pier

Observers Kari Williamson w/ Dave Ness

Activity Seabird Survey Time and Duration 0800 for 10 min

Time	Species	# of birds	Wind speed (Beaufort Marine scale)	Land Observer	Boat Observer		Observed Behavior*	Comments
				Grid Location	Distance	Land/Sea Ward		
0800	HYGU	32	0-1				F,R,Y,P	
↓	PECO	97	↓				↓	
	MAMU	8						farther out 1-1.5 km
	GWTE	1						
	DCCO	16						
	HADU	3						
	SUSC	12						
	PIGU	8						
	WEGR	74						far out (W)
	KNGR	3						
	HOGR	5						

* R=resting F=feeding/diving P=preening Y=flying/flushing T=transient N=nesting O=other

GBHE 1
BEKI 1
PETA 2 calling
BAEA 1
COMU 1
COLO 1

Seabird Monitoring Data Collection Form

Project Name Indian Island Ammo Pier **Date** Oct. 31, 2024

Observers Kari Williamson & Kersti Hamel **Monitoring Site/Transect ID** N Pier (walk loop)

Activity Seabird Survey **Time and Duration** 0800 for 10 min

Time	Species	# of birds	Wind speed (Beaufort Marine scale)	Land Observer	Boat Observer		Observed Behavior*	Comments
				Grid Location	Distance	Land/Sea Ward		
0800	HYGU	34	2-3				F,R,Y,P	
↓	PELO	113	↓				↓	
	HADO	8						
	SUSC	4						
	BAEA	1						
	GBHE	2						
	EUST	25						
	AMCR	2						
	RODO	30						flying

* R=resting F=feeding/diving P=preening Y=flying/flushing T=transient N=nesting O=other

Seabird Monitoring Data Collection Form

Project Name Indian Island Ammo Pier **Date** Nov. 1, 2024

Monitoring Site/Transect ID N. Pier (Loop)

Observers Kari Williamson & Kerstin Muehl

Activity Seabird Survey **Time and Duration** 1245 - 15 min

Time	Species	# of birds	Wind speed (Beaufort Marine scale)	Land Observer	Boat Observer		Observed Behavior*	Comments
				Grid Location	Distance	Land/Sea Ward		
1245	HOGR	5					F,R,Y,P	
↓	HYGU	73						
	PECO	21						
	SUSL	13						
	DCCO	15						
	WEGR	2						(inside fence!)
	HAOY	4						
	COLO	1						
	GBHE	2						
	RODO	18						
	BEKI	1						

* R=resting F=feeding/diving P=preening Y=flying/flushing T=transient N=nesting O=other

AMCR 1

BAEA 1

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
1315 East-West Highway
Silver Spring, Maryland 20910

LETTER OF AUTHORIZATION

The U.S. Navy (Navy) and its designees are hereby authorized under section 101(a)(5)(A) of the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1371(a)(5)(A)) to incidentally harass marine mammals incidental to the Naval Magazine Indian Island Ammunition Wharf Maintenance and Pile Replacement Project in Puget Sound, Washington, subject to the provisions of the MMPA and Regulations Governing Taking and Importing Marine Mammals Incidental to U.S. Navy Construction at the Naval Magazine Indian Island Ammunition Wharf, Puget Sound, Washington (50 CFR Part 217 Subpart I) (Regulations).

1. This letter of authorization (LOA) is valid from October 1, 2024, until September 30, 2029.

2. This Authorization is valid only for take incidental to the specified Navy in-water construction activities at the Naval Magazine Indian Island Ammunition Wharf in Puget Sound, Washington. Hereafter (unless otherwise specified) the term "in-water construction activities" is used to refer to impact and vibratory pile removal.

3. General Conditions

   (a) A copy of this LOA must be in the possession of the Holder of the Authorization (Holder or Navy), its designees and work crew personnel operating under the authority of this LOA.

   (b) The species and/or stocks authorized for taking are listed in Table 1. Authorized take, by Level A and B harassment, is limited to the species and numbers listed in Table 1.

   (c) The taking by serious injury or death of any of the species listed in Table 1 or any taking of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this LOA. Any taking exceeding the authorized amounts listed in Table 1 is prohibited and may result in the modification, suspension, or revocation of this LOA.

   (d) The Holder must ensure that construction supervisors and crews, the Protected Species Observer (PSO) team, and relevant Navy staff are trained prior to the start of all activities subject to this LOA, so that responsibilities, communication procedures, monitoring protocols, and operational procedures are clearly understood. New personnel joining during the project must be trained prior to commencing work.

4. Mitigation Requirements

(a) The Holder must employ PSOs and establish monitoring locations as described in section 5 of this LOA and in the NMFS-approved Marine Mammal Monitoring Plan. PSOs must monitor designated harassment zones (Table 2) to the maximum extent possible based on daily visibility conditions. Trained PSOs must be placed at the best vantage point(s) practicable to monitor for marine mammals and implement shutdown or delay procedures when applicable through communication with the equipment operator.

(b) For all pile driving activities, land-based PSOs must be stationed at the best vantage points practicable to monitor for marine mammals and implement shutdown/delay procedures. At least one vessel-based PSO must be employed when practicable. Additional PSOs must be added if warranted by site conditions and/or the level of marine mammal activity in the area.

(c) The Holder must avoid direct physical interaction with marine mammals during construction activity. If a marine mammal comes within 10 meters of such activity, operations must cease and vessels must reduce speed to the minimum level required to maintain steerage and safe working conditions, as necessary, to avoid direct physical interaction.

(d) Monitoring must take place from 30 minutes prior to initiation of pile driving activity (*i.e.*, pre-start clearance monitoring) through 30 minutes post-completion of pile driving activity. Pre-activity monitoring must be conducted for 30 minutes to ensure that the shutdown zone is clear of marine mammals, and pile driving may only commence when PSOs have declared the shutdown zone clear of marine mammals.

(e) In the event of a delay or shutdown of activity resulting from marine mammals in the shutdown zone, animals must be allowed to remain in the shutdown zone (*i.e.*, must leave of their own volition) and their behavior must be monitored and documented. If a marine mammal is observed within the shutdown zone, a soft start cannot proceed until the animal has left the zone or has not been observed for 15 minutes. Monitoring must occur throughout the time required to drive a pile.

(f) If work ceases for more than 30 minutes, the pre-activity monitoring of the shutdown zones must commence. A determination that the shutdown zone is clear must be made during a period of good visibility.

(g) If a marine mammal approaches or enters the shutdown zone, all pile driving activities at that location must be halted. If pile driving is halted or delayed due to the presence of a marine mammal, the activity may not commence or resume until

either the animal has voluntarily left and been visually confirmed beyond the shutdown zone or 15 minutes have passed without re-detection of the animal.

(h) For all pile driving activity, the Holder must implement shutdown zones with radial distances as identified in Table 2. If a marine mammal comes within or approaches the shutdown zone indicated in Table 2, pile driving activity must cease.

(i) The Navy must shut down in-water activities when cetaceans are observed approaching or within any harassment zone.

(j) Pile driving activity must be halted upon observation of a species entering or within the harassment zone for either a species for which incidental take is not authorized or a species for which incidental take has been authorized but the authorized number of takes has been met.

(k) The Holder must use soft start techniques when impact pile driving. Soft start requires contractors to provide an initial set of strikes at reduced energy, followed by a 30-second waiting period, then two subsequent reduced-energy strike sets.

(l) A soft start must be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer.

(m) The Holder must employ bubble curtain systems during impact driving of 36-in steel piles except under conditions where the water depth is less than 0.67 meters (2 feet) in depth. Bubble curtains must meet the following requirements: Bubble curtains must meet the following requirements:

i. The bubble curtain must distribute air bubbles around 100 percent of the piling perimeter for the full depth of the water column.

ii. The lowest bubble ring must be in contact with the mudline and/or rock bottom for the full circumference of the ring, and the weights attached to the bottom ring shall ensure 100 percent mudline and/or rock bottom contact. No parts of the ring or other objects shall prevent full mudline and/or rock bottom contact.

iii. The bubble curtain must be operated such that there is equal balancing of air flow to all bubblers.

5. Monitoring Requirements

(a) Marine Mammal monitoring must be conducted in accordance with the conditions in this section and the Marine Mammal Monitoring Plan.

(b) The Holder must submit a Marine Mammal Monitoring Plan to NMFS for approval at least 90 days before the start of construction and abide by the Plan if approved.

(c) Monitoring must be conducted by qualified PSOs, in accordance with the following conditions:

i. PSOs must be independent of the activity contractor (for example, employed by a subcontractor) and have no other assigned tasks during monitoring periods.

ii. At least one PSO must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization.

iii. Other PSOs may substitute other relevant experience, education (degree in biological science or related field), or training for prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization.

iv. One PSO must be designated as lead PSO or monitoring coordinator. The lead PSO must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization.

v. Where a team of three or more PSOs are required, a lead PSO or monitoring coordinator must be designated. The lead PSO must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization.

vi. PSOs must be approved by NMFS prior to beginning any activity subject to this LOA.

(d) PSOs must be trained in marine mammal identification and behaviors.

(e) The Holder must monitor the Level B harassment zones (areas where SPLs are equal to or exceed the 160 dB root-mean-squared (rms) threshold for impact

driving and the 120 dB rms threshold during vibratory pile driving) to the maximum extent practicable and the shutdown zones.

(f) The Holder must coordinate with the Center for Whale Research, Orca network, and NMFS to avoid noise exposure of southern resident killer whales. The Holder must shut down in-water activities when southern resident killer whales are observed or reported within or approaching any harassment zone.

6. Reporting

(a) The Holder must submit a draft monitoring report to NMFS within 90 calendar days of the completion of each construction year. A draft comprehensive 5-year summary report must also be submitted to NMFS within 90 days of the end of the project. The reports must detail the monitoring protocol and summarize the data recorded during monitoring. Final annual reports and the final comprehensive report must be prepared and submitted within 30 days following resolution of any NMFS comments on the draft report. If no comments are received from NMFS within 30 days of receipt of the draft report, the report must be considered final. If comments are received, a final report addressing NMFS comments must be submitted within 30 days after receipt of comments.

(b) All draft and final monitoring reports must be submitted to *PR.ITP.MonitoringReports@noaa.gov* and *ITP.pauline@noaa.gov*.

(c) The marine mammal report must contain the informational elements described in the Marine Mammal Monitoring Plan and, at minimum, must include:

i. Dates and times (begin and end) of all marine mammal monitoring;

ii. Construction activities occurring during each daily observation period, including:

A. The number and type of piles that were driven or removed and by what method (*i.e.*, impact, vibratory, or drilling); and

B. The total duration of driving time for each pile (vibratory driving) and number of strikes for each pile (impact driving).

iii. Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance (if less than the harassment zone distance);

iv. Upon observation of a marine mammal, the following information:

A. Name of PSO who sighted the animal(s) and PSO location, as well as the activity at time of sighting;

B. Time of sighting;

C. Identification of the animal(s) (*e.g.*, genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the composition of the group if there is a mix of species;

D. Distances and bearing of each marine mammal observed in relation to the pile being driven or drilled for each sighting (if pile driving or drilling was occurring at time of sighting);

E. Estimated number of animals (min/max/best estimate);

F. Estimated number of animals by cohort (adults, juveniles, neonates, group composition, etc.);

G. Animal's closest point of approach and estimated time spent within the harassment zone;

H. Description of any marine mammal behavioral observations (*e.g.*, observed behaviors such as feeding or traveling), including an assessment of behavioral responses thought to have resulted from the activity (*e.g.*, no response or changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching);

I. Detailed information about any implementation of any mitigation triggered (*e.g.*, shutdowns and delays), a description of specific actions that ensued, and resulting behavior of the animal, if any;

(d) The Holder must submit all PSO datasheets and/or raw sighting data with the draft reports referenced in condition 6(a) of this LOA.

(e) In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the Holder must report the incident to the Office of Protected Resources (OPR), NMFS (*PR.ITP.MonitoringReports@noaa.gov* and *ITP.Pauline@noaa.gov*) and to the West Coast Regional Stranding Coordinator (206-526-4747) as soon as feasible. If the death or injury was clearly caused by the specified activity, the Holder must immediately cease the activities until NMFS OPR is able to review the circumstances of the incident and

determine what, if any, additional measures are appropriate to ensure compliance with the terms of this LOA. The Holder must not resume their activities until notified by NMFS.

The report must include the following information:

i. Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);

ii. Species identification (if known) or description of the animal(s) involved;

iii. Condition of the animal(s) (including carcass condition if the animal is dead);

iv. Observed behaviors of the animal(s), if alive;

v. If available, photographs or video footage of the animal(s); and

vi. General circumstances under which the animal was discovered.

7. This Authorization may be modified, suspended or revoked if the Holder fails to abide by the conditions prescribed herein (including, but not limited to, failure to comply with monitoring or reporting requirements), or if NMFS determines: (1) the authorized taking is likely to have or is having more than a negligible impact on the species or stocks of affected marine mammals or (2) the prescribed measures are likely not or are not effecting the least practicable adverse impact on the affected species or stocks and their habitat.

MARZIN.CATHERINE.GAELLE.1365836082

Digitally signed by MARZIN.CATHERINE.GAELLE.1365836082
Date: 2024.03.01 11:51:33 -05'00'

For Kimberly Damon-Randall,
Director, Office of Protected Resources
National Marine Fisheries Service

Table 1 – Authorized Incidental Take

Common Name	Scientific Name	Stock	Annual Level A Harassment	Annual Level B Harassment
Gray Whale	*Eschrichtius robustus*	Eastern North Pacific	0	1
Minke Whale	*Balaenoptera acutorostrata*	California/Oregon/ Washington	0	1
Dall's Porpoise	*Phocoenoides dalli*	California/Oregon/ Washington	0	6
Harbor Porpoise	*Phocoena phocoena*	Washington Inland Waters	0	128
California Sea Lion	*Zalophus californianus*	United States	0	19
Steller Sea Lion	*Eumetopias jubatus*	Eastern United States	0	6
Northern Elephant Seal	*Mirounga angustirostris*	California Breeding	0	2
Pacific Harbor Seal	*Phoca vitulina*	Washington Northern Inland Waters	27	648

Table 2 -- Shutdown and Harassment Zones

Pile Size and Type	Shutdown Zone (m)			Level B Harassment Zone (m)
	Cetaceans	Harbor Seal	Sea Lion	
24-inch Concrete Impact	90	30	10	90
36-inch Steel Impact	400	200	20	400
36-inch Steel Vibratory	13,600	10	10	13,600
Fender Vibratory	1,000	10	10	1,000

Thorson, Philip H CIV USN NAVFAC NW SVD WA (USA)

From: Lisa Abernathy - NOAA Federal <lisa.abernathy@noaa.gov>
Sent: Monday, July 3, 2023 12:56 PM
To: Selbig, Tiffany L CIV USN NAVFAC NW SVD WA (USA); Kunz, Cynthia A CIV USN NAVFAC NW SVD WA (USA)
Cc: MPR-wa.wcr@noaa.gov; Shorin, Bonnie S CIV (USA); Senner, Robert CIV USN NAVFAC NW SVD WA (USA); Thorson, Philip H CIV USN NAVFAC NW SVD WA (USA); Mckinney, Jason D CIV (USA); Goodman, Layna A CIV USN NAVFAC NW SVD WA (USA); Schuster, Jarrett L CIV USN NAVFAC NW SVD WA (USA); Consultationupdates WCR - NOAA Service Account
Subject: [URL Verdict: Neutral][Non-DoD Source] Re: Reinitiation request for the Navy MPR project

Dear Cyndi and Tiffany

Thank you for advising NMFS of several work elements not previously described in our initial review of the Marine Pile Replacement program which we consulted on in 2019. We appreciate your advising us that similar work will also need to occur at your Indian Island wharf, and that these additional elements may trigger re-initation.

We have reviewed the additional described work, and have concluded that revisions do not in fact trigger a re-initiation for the following reasons:

- The MPR action area broadly covers Puget Sound, therefore all work to occur at Indian Island (Ammo Wharf) would produce effects within the same action area, as was previously analyzed.
- All effects are consistent with the effects previously analyzed. All elements to be included at the Indian Island location will be performed with the same range of effects previously considered, and we do not identify any additional pathways of effects.
- All of the take limits remain valid even with the addition of the Indian Island work. MPR accounts for 831 piles. We note here that, even with Indian Island work, the projected number of piles will be fewer than 500.

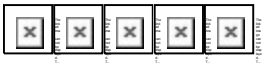
For these reasons, no re-initation is required. We will note your project revisions and this correspondence to the administrative record and suggest you keep a copy for your records as well.

Additionally, you recently requested an amendment to the terms and conditions that were part of the MPR consultation, as they have proved unworkable. We have reviewed those terms and conditions and agree that two of the terms are not practicable. You also requested an adjustment in the years in which work could be completed. We have found that this adjustment would not change the analysis or effects. We do not need to amend the consultation, however, and have confirmed that an Errata will be sufficient to correct the two terms that are problematic and adjust the years of which the Opinion covers. We will follow up after the Independence Day holiday with that Errata.

Thanks,

Lisa Abernathy
Fisheries Biologist, Central Puget Sound
NOAA Fisheries | U.S. Department of Commerce
Office: (206) 526-4742

Cell: (206) 707-5386
www.fisheries.noaa.gov



On Thu, May 25, 2023 at 5:09 PM Selbig, Tiffany L CIV USN NAVFAC NW SVD WA (USA) <tiffany.l.selbig.civ@us.navy.mil> wrote:

Hi Bonnie and Lisa,

As we discussed during the NMFS /Navy meeting on April 12, 2023, the Navy requests reinitiation of the Marine Structure Maintenance and Pile Replacement Activities (MPR) Phase 1 ESA Consultation (NMFS WCRO-2016-00018), to include the NAVMAG Ammunition Wharf ESA program. In addition, the Navy requests to extend the MPR ESA Consultation for two additional years to allow work under the consultation to continue until February 15, 2026. Two of the five years of the programmatic were not utilized and no pile installation was conducted at any Navy installations in Puget Sound during the 2019/2020 and 2022/2023 in-water work windows.

The Navy withdrew its request for Section 7 Consultation regarding the NAVMAG Indian Island Ammunition Wharf Maintenance and Pile Replacement (NMFS WCRO-2020-02336), on May 16, 2023. The Biological Assessment and request for consultation, submitted to NMFS on August 25, 2020, are attached. The NAVMAG Indian Island Ammunition Wharf Maintenance and Pile Replacement is currently in consultation with NMFS OPR for a 5-year Letter of Authorization under the MMPA for incidental harassment authorizations. The Final Rule will be issued in June 2023.

Within the attached spreadsheet, please find the list of upcoming projects expected to occur under the MPR during the 2024-2025 and 2025-2026 in water work windows. The spreadsheet provides details including the project location, and the number, type and methods of pile installation and removal expected. Please let me know if I can provide any additional project details.

In order to ensure that the required NAVMAG program can remain on schedule and that critical repairs can be completed, the Navy requests NMFS confirmation that the revised biological opinion will be issued by June 30, 2023. Completion of the consultation must be accomplished by this date in order to provide sufficient time for contracting, casting and construction of the concrete piles for NAVMAG Indian Island Ammo Wharf pile installation. The Navy appreciates NMFS's cooperation in meeting its project schedules.

Respectfully,

Tiffany Selbig

Biologist

NAVFAC NW

1101 Tautog Circle

Silverdale, WA 98315-1101

360-315-2531

tiffany.selbig@navy.mil

MARINE MAMMAL MONITORING PLAN

NAVAL MAGAZINE INDIAN ISLAND AMMUNITION WHARF

MAINTENANCE AND PILE REPLACEMENT PROGRAM

2024-2029

April 2024

Prepared by

Naval Facilities Engineering Command Northwest

1101 Tautog Circle

Silverdale, WA 98315

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1 INTRODUCTION

The United States (U.S.) Department of the Navy (Navy) proposes to replace up to 118 concrete piles with new concrete or steel piles and/or, removal and replacement of fender piles, and conduct maintenance and repair activities over a five-year period on the Ammunition Wharf at Naval Magazine (NAVMAG) Indian Island. Maintaining this structure is vital to sustaining the Navy's mission and ensuring readiness. The Navy has applied for a five-year Letter of Authorization (LOA) for the incidental harassment of marine mammals from removal and installation of concrete and steel piles for the Ammunition Wharf at NAVMAG Indian Island.

The Ammunition Wharf was originally constructed using precast concrete piles. An unknown quantity of those pilings are susceptible to a potentially catastrophic condition called Delayed Ettringite Formation (DEF). DEF is expansion and cracking of concrete associated with the delayed formation of the mineral ettringite which is a normal product of early cement hydration. As outlined in Unified Facilities Criteria 4-150-07 Maintenance of Waterfront Facilities, the Navy schedules inspections every three years, but due to DEF at the Ammunition Wharf, inspections for that facility occur every two years.

Maintenance and repair activities could occur throughout the five-year period. General maintenance could include deck resurfacing and recoating various corroded metal components. Repair activities would be conducted on wetwell concrete spalling, piles, and quay walls. Damaged or deteriorated components would be repaired or replaced, including guide piles systems, brow floats, pile caps, safety ladders, cable straps, camel and camel connections, and lighting.

However, only pile installation will produce underwater noise levels above behavioral harassment (Level B) and injury (Level A) thresholds for marine mammals. In order to comply with the Marine Mammal Protection Act, the National Marine Fisheries Service (NMFS) will issue an Incidental Harassment Authorization to the Navy that will require measures to minimize behavioral harassment and potential injury to marine mammals during project construction. To ensure compliance with the Incidental Harassment Authorization, this Marine Mammal Monitoring Plan (MMMP) provides a protocol for marine mammal monitoring during in-water pile driving for the NAVMAG Indian Island Ammunition Wharf Maintenance and Pile Replacement Program. Maintenance, repair activities, and pile removal by cutting would not rise to the level of Level B harassment under the MMPA.

The purpose of this plan is to provide a protocol for marine mammal monitoring that will occur during in-water construction scheduled to occur annually between October 1 and January 15 over the five-year period of the LOA. Visual marine mammal monitoring will be conducted before, during, and after pile driving by experienced Protected Species Observers (PSOs), within zones that are estimated to encompass acoustic levels that could exceed injury or behavioral disturbance thresholds. In order to protect marine mammals, pile driving will not start, or will cease if underway, if marine mammals enter the Level A injury zone. In addition to the Level A shutdown protocol, if cetaceans are seen in or near the boundary of the Level B monitoring zone, a pile driving shut down will ensue.

2 METHODS

2.1 Observer Qualifications

The PSOs may either be a biologist with prior training and experience to meet the qualifications in conducting marine mammal monitoring, a professional PSO with certification (i.e., Protected Species Observer), or recognized membership in a professional organization (i.e., Marine Mammal Observer Association). Either qualification will require that the PSOs have the ability to detect and correctly identify the marine mammal species of the inland waters of Washington, and accurately describe the relevant species-specific behaviors that may occur in proximity to in-water construction activities. In addition, at least one member of the PSO team will have verifiable experience with marine mammal monitoring during pile removal or installation construction. The observers will have no other construction related tasks while conducting monitoring.

A dedicated PSO coordinator will be on-site during all construction days. The PSO coordinator will oversee the PSOs and serve as the liaison between the PSOs and the construction contractor to assist in the distribution of information related to the construction schedule and marine mammal monitoring. The PSO coordinator will also serve as a liaison between the PSO team and the U.S. Department of the Navy (Navy) for reporting (see Sections 2.2, 3, and 4).

The number of PSOs used during monitoring will depend on the size of the monitoring zones, obstructions in the water (i.e., barges, vessels or pier structures), and duration of the daily monitoring period (i.e., rotation of observers to avoid observer fatigue). PSOs would be deployed so that the entire monitoring zone is in view which may require using vessels, barges, piers, or along the shore.

2.2 Data Collection

Observers will use a NMFS-approved Marine Mammal Observation Record Form (Appendix A), which will be completed daily by each PSO. The data to be collected will include the following:

- Name of PSO.
- Date of monitoring.
- Start and end times for the PSO, including the time that pile removal or installation begins and ends, type of pile activity (impact or vibratory), pile size, and type (i.e., timber, concrete, or steel).
- Type of other construction activities occurring, if relevant.
- Weather parameters (e.g., percent cover, percent glare, visibility, rain, fog). Should update every hour or when major changes in weather occur.
- Water conditions (e.g., tidal direction [flood, slack, ebb], and sea state. The Beaufort Sea State Scale (Appendix B) will be used to determine sea state.
- Species, group size, and if possible, sex and age class.
- Time of sighting.
- Marine mammal behaviors observed, including bearing from observer and direction of travel. If possible, include the correlation to construction activity for context.
    - Behavior patterns observed prior to soft starts or shutdown procedures to be included.
    - For pinnipeds, it will be noted if the animals are hauled out or in the water.

- Distance from pile removal or installation activities to the observed marine mammal and distance from the marine mammal to the observation point. The distances may be estimated as range finders rarely work sighting marine mammals directly. Estimated distances should be based on measured distances (using a laser range finder) to nearby structures, vessels, buoys etc. in the monitoring area. Daily laser range finder distances and calibrations for PSOs will be required.
- Descriptive locations of all marine mammals observed if possible (i.e., in the behavioral or injury monitoring zone, outside the monitoring zones). Local reference names will be used if possible (e.g., names of headlands, rocks, etc.).
- Other human activity in the area, with hull numbers of fishing vessels if possible. The PSO coordinator will complete a Marine Mammal Observation Summary for each day of monitoring. The summary will compile the information collected on the individual sighting forms and provide additional details, as required, about the construction activities during the daily marine mammal monitoring. The summary will be provided to the Navy the following day.

2.3 Equipment

The following equipment will be required to conduct marine mammal monitoring:

- An optional survey boat could be used and would include the following minimum equipment: a means to keep electrical equipment dry, a fixed marine radio for the Captain to communicate on marine channels independent of observers communicating on a dedicated channel, depth finder, and GPS unit that tracks the constant movement of the vessel. Vessels will comply with all Coast Guard regulations and be able to pass a Coast Guard safety inspection. The vessel will provide the PSO with an unobstructed view of the water.
- Hearing protection for PSOs and boat operators working near heavy construction equipment.
- At a minimum, portable marine radios with extra batteries and headsets for the PSOs to communicate with the monitoring coordinator, construction contractor, and other PSOs. Red and green flags can be added as back-up or in addition to the radios, if necessary.
- Cellular phones that do not have a camera and the contact information for the other PSOs, monitoring coordinator, and Navy point of contact.
- Nautical charts as relevant to the monitoring.
- Daily tide tables for the project area.
- Watch or chronometer.
- Binoculars (quality 7 x 50 or better, can have built-in compass, and rangefinders or reticles).
- Rangefinder or other means of measuring or estimating distances.
- Monitoring plan, IHA permit, and/or other relevant permit requirement specifications in sealed clear plastic cover.
- Waterproof notebook (e.g., Rite-in-the-Rain).
- Waterproof data sheets with Marine Mammal Observation Record forms on waterproof paper (e.g., Rite-in-the-Rain). The PSO will put his/her name on each form used each day.
- Marine mammal identification guides.
- Clipboard.

- Pens and pencils (pencils preferred for waterproof notebooks).
- Pencil sharpener and eraser.
- A laminated color figure of the visual monitoring zones for impact and vibratory pile installation.
- Angleboard, compass, compass protractor, or other means of determining bearings.
- Personal Protective Equipment relevant to the seasonal weather conditions and PSO location.

2.4 Pile Driving Visual Monitoring and Shutdown Zones

During all pile removal or installation activities, the Navy will ensure qualified PSOs visually monitor Injury and Behavioral Disturbance threshold distances. The Level A Injury Zones are based on the maximum calculated radius for pinnipeds and cetaceans during installation of 36-inch steel piles and 24-inch concrete piles with impact techniques, and the Level B Behavioral Response Zone for impact and vibratory pile installation. These actions serve to protect marine mammals, allow for practical implementation of the MMMP, and reduce the risk of a take. Marine mammal monitoring will be conducted as follows:

- During removal or installation activities, **Injury Threshold Monitoring Zones** shall be established and monitored to prevent injury to killer whale, harbor porpoise, baleen whales, Steller sea lion, and California sea lion; and to minimize injury to harbor seals from noise due to impact and vibratory pile driving and physical interaction with construction equipment. Injury Zones for impacting non-steel piles have a minimum Shutdown Zone of 10 meters to prevent injury to marine mammals from interaction with construction equipment. Injury to harbor seals from noise due to impact and vibratory pile driving and physical interaction with construction equipment will be minimized to the extent practicable by implementing a shutdown if the animals are observed to be swimming towards the Injury Zone. For steel pile impact driving, to the extent possible, PSOs would initiate shutdown when harbor seals enter the zone; however, because of the size of the zone and the inherent difficulty in monitoring harbor seals, a highly mobile species, it may not be practical, which is why Level A take is requested. The monitoring zone for injury is established to enable PSOs to notify construction crews of marine mammals approaching the injury threshold and shutdown zones described below.
- During all pile removal or installation activities, **Behavior Disturbance Threshold Monitoring Zones** shall be established that extends to the impulsive acoustic threshold of 160 decibels [dB] referenced at 1 micropascal (µPa) or the continuous noise acoustic threshold (120 dB re 1µPa), depending on installation technique. The far field monitoring will require the use of binoculars or spotting scopes for land based PSOs, particularly those stationed to the north of the facility. To further augment the far field monitoring, additional information will also be included, such as the use of the Orca Network sightings notifications for Hood Canal.
- The **Monitoring Zones for Impact Driving of Steel Piles** are based on the maximum calculated radius for pinnipeds and cetaceans during installation of 36-inch steel piles. The Injury Monitoring Zone will extend to a radius of 425 meters (m) for cetaceans, primarily monitoring for harbor porpoise, 200 m for harbor seals, and 20 m for sea lions during impact pile driving of steel piles (Table 2-1). Harbor seals are known to be regularly sighted in the NAVMAG Indian Island wharf area. As a result of their regular use of the Naval Facility and previous exposure to anthropogenic activities, shutdowns will be initiated for this species to the extent practicable. If the harbor seal behavior appears to remain unchanged during the pile driving, or the animals are swimming away from the in-water works, a take would be recorded rather than a shutdown.

- The **Monitoring Zones for Vibratory Pile Driving of steel piles for injury** will extend to a radius of 45 m for cetaceans, 20 m for harbor seals and sea lions during vibratory pile driving (Table 2-2). The established monitoring zone for the Behavioral Disturbance threshold distances (i.e., for vibratory driving, the zone where vibratory pile driving noise levels are estimated to be at or above 120 dB root mean square) is 5.4 km.
- The **Monitoring Zones for Concrete Jetting installation** are 10 m for cetaceans, harbor seals, and sea lions (Table 2-3). The established monitoring zone for the Behavioral Disturbance threshold distances (i.e., for vibratory driving, the zone where vibratory pile driving noise levels are estimated to be at or above 120 dB root mean square) is 2.2 km.

The radii of the monitoring zones may be adjusted if in-situ acoustic monitoring is conducted to determine actual distances to the thresholds for a pile type and installation method. Adjusted zones will be provided by the Navy to the Lead PSO.

During all pile driving, the Navy will establish **Shutdown Zones** as follows:

- **Shutdown Zones for cetaceans** will include the injury threshold and behavioral threshold distances as presented in Tables 2-1, 2-2, and 2-3. If a cetacean approaches or enters the Shutdown Zone, pile driving will cease. See Figure 2-1 for a generalized sketch of proposed zones for cetaceans. The Shutdown Zone for steel pile vibratory installation is 45 m for cetaceans, primarily monitoring for harbor porpoise, and jetting of concrete piles is 5 m for cetaceans.
- **Shutdown Zones for pinnipeds** will include the Injury Zone presented in Tables 2-1, 2-2, and 2-3. If a pinniped enters the Shutdown Zone, pile driving will cease, but if it enters only the Behavioral Disturbance Zone, a take would be recorded and behaviors documented. That pile would be completed without cessation, unless the animal approaches or enters the Shutdown Zone, at which point all pile driving activities will be halted. See Figure 2-2 for a generalized sketch of proposed zones for pinnipeds. The small Shutdown Zones for concrete pile installation for harbor seals and sea lions (5 m) would likely prevent all Level A exposures. For steel pile impact pile driving, to the extent possible, PSOs would initiate shutdown when harbor seals enter the 200 m zone because of the size of the zone and the inherent difficulty in monitoring harbor seals, a highly mobile species, it may not be practical, which is why Level A take is requested.
- If marine mammals are seen outside the Behavioral Disturbance Zone, these sightings will also be recorded (not as a take) with the location and behavior identified as much as possible.
- Distances for all monitoring zones are provided in Tables 2-1, 2-2, and 2-3 below.

Table 2-1. Calculated Behavioral and Injury Threshold Distances, and the Monitoring and Shutdown Zones Distances During Impact Driving of 24-in Concrete and 36-in Steel Piles.

Marine Mammal Group	*Behavioral Threshold (meters)[1]*	*Monitoring Zone (meters)*	*Injury Threshold (meters)1*	*Shutdown Zone (meters)*
Impact Pile Driving of Concrete Piles				
Cetaceans Harbor Porpoise	86	100	64	75
Harbor Seal	86	100	29	50
California Sea Lion	86	100	2	10
Impact Pile Driving of Steel Piles				
Cetaceans Harbor Porpoise	398	425	256	375
Harbor Seal	398	425	182	200
California Sea Lion	398	425	13	25

Table 2-2. Calculated Behavioral Threshold Distances, and Monitoring and Shutdown Zones Distances during Vibratory Pile Driving For 36 Inch Steel Piles.

Marine Mammal Group	*Behavioral Threshold (kilometers)*	*Monitoring Zone (kilometers)*	*Injury Threshold (meters)*	*Shutdown Zone (meters)*
Cetaceans Harbor Porpoise	13.6	13.6	<10	200
Harbor Seal	13.6	13.6	<10	200
California Sea Lion	13.6	13.6	<10	200

Table 2-3. Calculated Behavioral Threshold Distances, and Monitoring and Shutdown Zones Distances During Vibratory Installation of Fender Piles

Marine Mammal Group	*Behavioral Threshold (kilometers)*	*Monitoring Zone (kilometers)*	*Injury Threshold (meters)*	*Shutdown Zone (meters)*
Cetaceans Harbor Porpoise	398	425	<10	425
Harbor Seal	398	425	<10	425
California Sea Lion	398	425	<10	425

2.5 Observer Monitoring Locations

The number and placement of PSOs will vary depending upon the pile size, location, and number of piles being installed or removed. In order to effectively monitor the Injury and Behavioral Disturbance threshold distances and associated Monitoring and Shutdown Zones, PSOs will be positioned at the best practicable vantage points, taking into consideration security, safety, and space limitations. The PSOs will be stationed on the pier, vessel, on shore, or on the pile driving barge in a location that will provide adequate visual coverage for the Shutdown Zones listed in Tables 2-1, 2-2, and 2-3. During pile driving, one PSO will be stationed in a vessel, and at least four will be stationed on the pier, along the shore, or on the pile driving barge to maximize observation of the Injury Zones and Behavioral Disturbance Zones.

Each PSO location will have a minimum of one dedicated PSO (not including boat operators) (see Figures 2-3, 2-4, and 2-5). The exact number of PSOs and the observation locations are to be determined based upon site accessibility and line of sight for adequate coverage. It is expected that a minimum of four PSOs will be required, with additional PSOs added into the protocol as deemed necessary for effective coverage.

Optional shore PSOs could also be used to monitor the behavior zone, if warranted for the project. Placement of optional shore PSOs should be focused at the Fort Townsend Historical State Park (2.8 km west of the Ammunition Wharf), in locations such as Port Townsend and Fort Flagler (Marrowstone Island adjacent to Indian Island; Figure 2-5). The Navy requires that Orca Network will be monitored and expects that the level of shore monitoring will reflect the likelihood for occurrence (e.g., if SRKW or humpbacks are “in town” and have been spotted in San Juan Islands, the Strait, or elsewhere in the Puget Sound). The lead PSO will be registered with Orca Network and will receive notifications of cetaceans (i.e., Killer whales, humpback whales, and gray whales) sighted in the northern Puget Sound area.

2.6 Monitoring Techniques

The PSOs will collect marine mammal sightings data, including behaviors, for the pre-, during, and post-pile driving period. The efficacy of visual detection depends on several factors including the PSOs ability to detect the animal, the environmental conditions (visibility and sea state), and monitoring platforms. The following observation protocol will be implemented for all marine mammal monitoring:

- PSOs will survey the Injury and Behavioral Disturbance Zones. Monitoring will begin at least 30 minutes prior to initiation of pile driving through 30 minutes after completion of pile driving to ensure there are no marine mammals present.
- In case of reduced visibility due to weather or sea state, the PSOs must be able to see the Shutdown Zones or pile driving will not be initiated until visibility in these zones improves to acceptable levels.
- The Injury and Behavioral Disturbance Monitoring Zones will be continuously monitored throughout the time required to install each pile.
- Marine Mammal Observation Record forms (Appendix A) will be used to document observations. Additional information can be recorded in waterproof notebooks.
- Survey boats engaged in marine mammal monitoring will maintain speeds equal to or less than 10 knots.
- All PSOs will be trained and experienced marine mammal observers in order to accurately verify species sighted.

- PSOs will use binoculars and the naked eye to search continuously for marine mammals.
- PSOs will have a means to communicate with each other to discuss relevant marine mammal information (e.g., animal sighted but submerged with direction of last sighting).
- PSOs will have the ability to correctly measure or estimate the animals distance to the pile driving equipment such that records of any takes are accurate relevant to the pile size and type.

2.6.1 Visual Survey Protocol – Pre-Activity Monitoring

The following survey protocol will be implemented prior to commencing pile driving:

- Visual surveys of the Injury and Behavioral Zone will occur for at least 30 minutes prior to the start of construction.
- The shutdown zone for whales (i.e., killer whales, humpback whales and gray whales) will be both the Level A and Level B Harassment zones. The shutdown zone for pinnipeds and harbor porpoises will only be the Level B Harassment zone.
- If marine mammal(s) are present within or approaching a Shutdown Zone prior to pile driving, the start of these activities will be delayed until the animal(s) have left the Shutdown Zone voluntarily and have been visually confirmed beyond the Shutdown Zone, or 15 minutes has elapsed without re-detection of the animal and the PSO is satisfied that the marine mammal has likely left the Zone.
- If marine mammal(s) are not detected within a Shutdown Zone (i.e., the zone is deemed clear of marine mammals), the PSOs will inform the monitoring coordinator/construction contractor that pile driving can commence.
- If a marine mammal approaches or enters the Shutdown Zone, pile driving will be delayed until the animal(s) leave the zone. If pinnipeds are present within the Behavioral Disturbance Monitoring Zone, pile driving would not need to be delayed, but PSOs would monitor and document, to the extent practical, the behavior of marine mammals that remain in the zone.

2.6.2 Visual Survey Protocol – During Activity Monitoring

The Injury and Behavioral Disturbance Monitoring Zones will be monitored throughout pile driving. The following survey protocol will be implemented during pile driving:

- If a cetacean approaches or enters the Shutdown Zone for cetaceans (both Level A and Level B Harassment zones), pile driving will cease until the animal(s) voluntarily leave the zone. If a pinniped or harbor porpoise enters the Shutdown Zone (Level A Harassment zone only), pile driving will cease until the animal(s) voluntarily leave the zone. If a pinniped or harbor porpoise is observed within or entering the Behavioral Disturbance Zone during pile driving, a take would be recorded, behaviors documented, and the PSO coordinator alerted to the position of the animal. However, that pile segment would be completed without cessation, unless the animal approaches or enters the Shutdown Zone, at which point all pile driving activities will be halted. The PSOs shall immediately radio to alert the monitoring coordinator/construction contractor. This action will require an immediate “all-stop” on pile operations.
- Once a shutdown has been initiated, pile driving will be delayed until the animal has voluntarily left the Shutdown Zone and has been visually confirmed beyond the Shutdown Zone, or 15 minutes have passed without re-detection of the animal (i.e., the zone is deemed clear of marine mammals). The monitoring coordinator will inform the construction contractor that activities can re-commence.

- If shutdown and clearance procedures would result in an imminent concern for human safety, as determined by the construction contractor, the Navy Point of contact will be notified prior to re-initiation of pile driving. The Navy POC will notify NMFS within 24 hours.

2.6.3 Visual Survey Protocol – Post-Activity Monitoring

Monitoring of the Injury and Behavioral Monitoring Zones will continue for 30 minutes following completion of pile driving. These surveys will record all marine mammal observations and will focus on observing and reporting unusual or abnormal behaviors. During this monitoring period, if an injured, sick, or dead marine mammal is observed, procedures outlined in Chapter 3 should be followed.

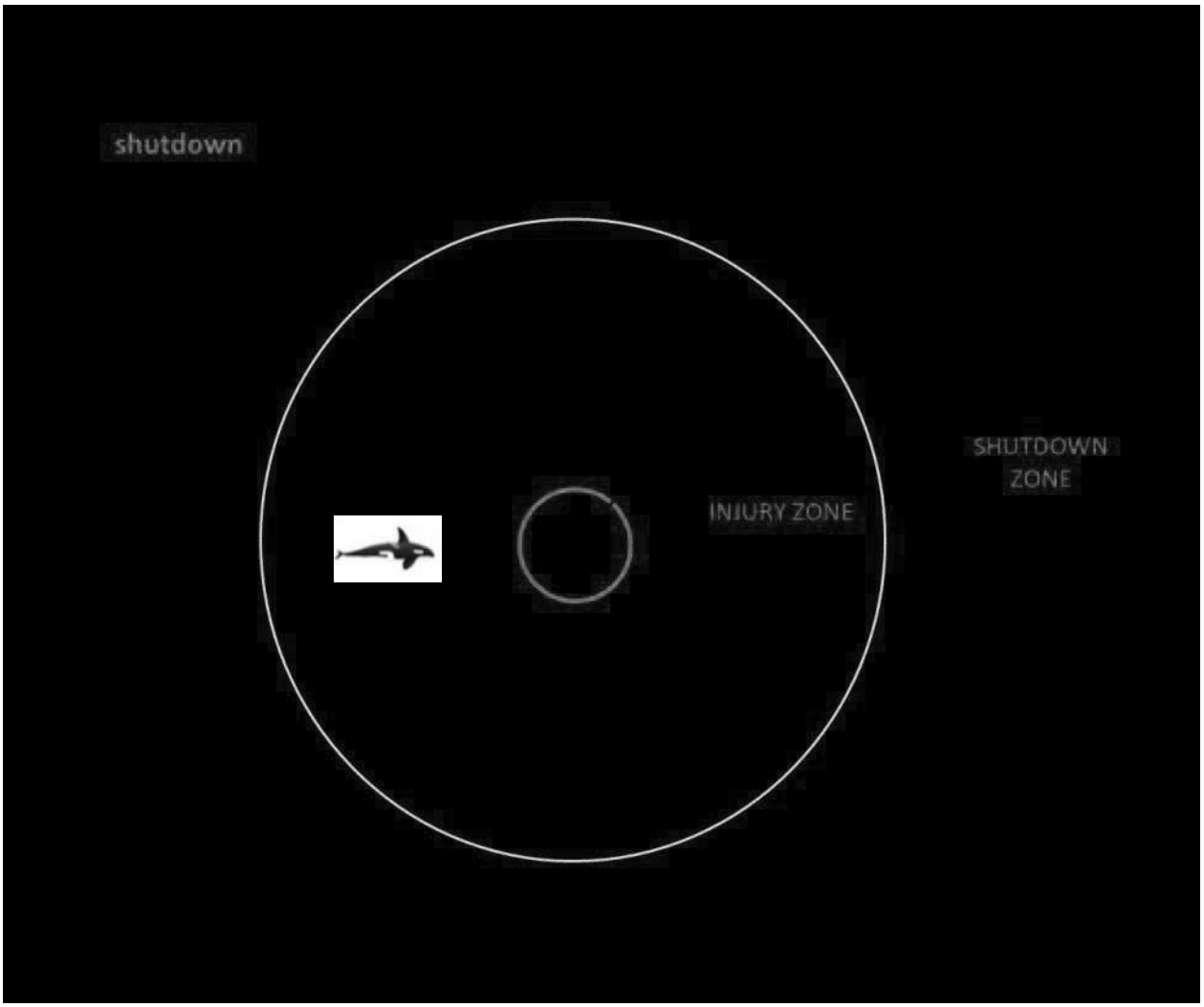


Figure 2-1. Diagram of Monitoring and Shutdown Zones for Large Cetaceans (i.e., Killer Whales, Humpback Whales, and Gray Whales

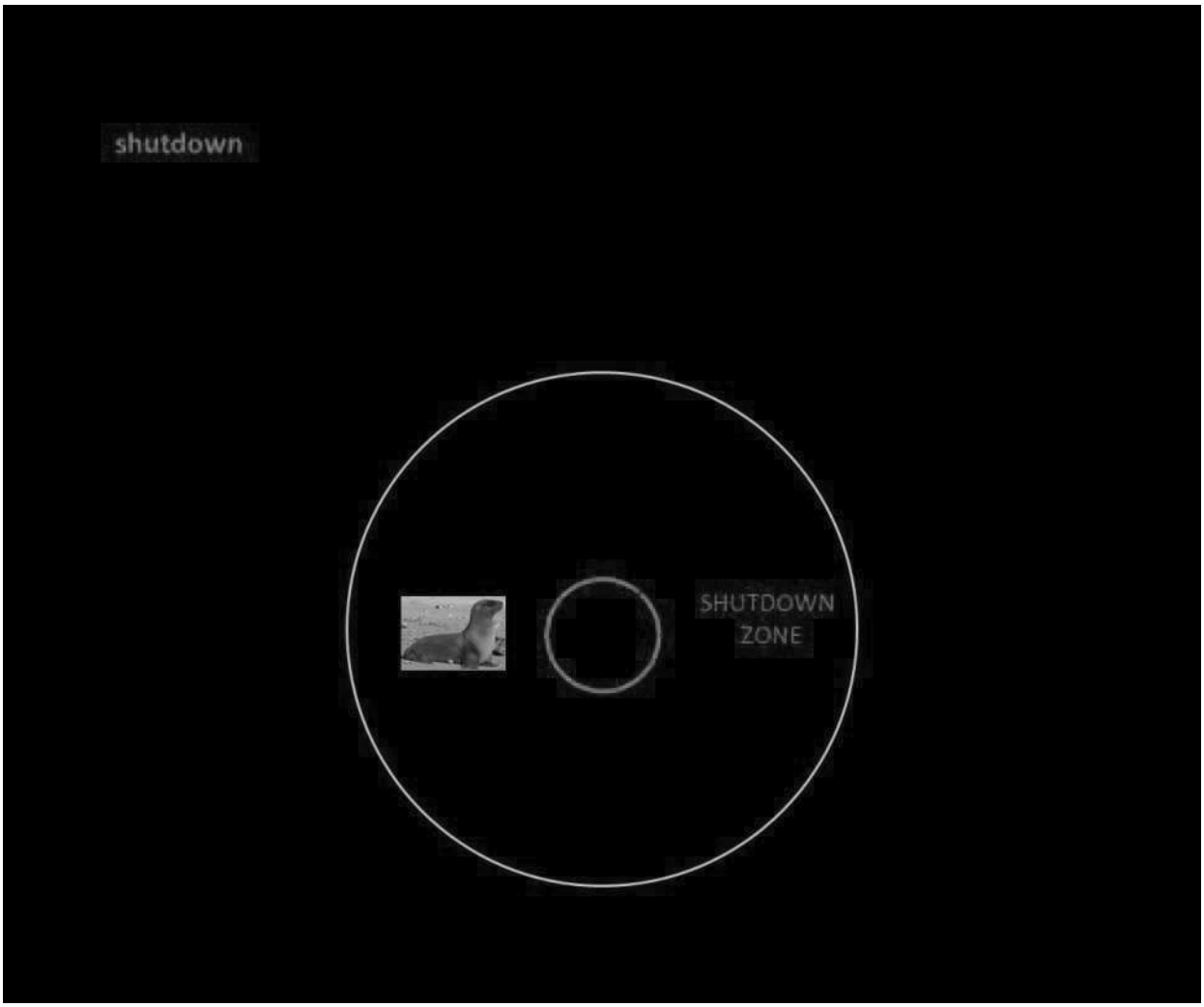
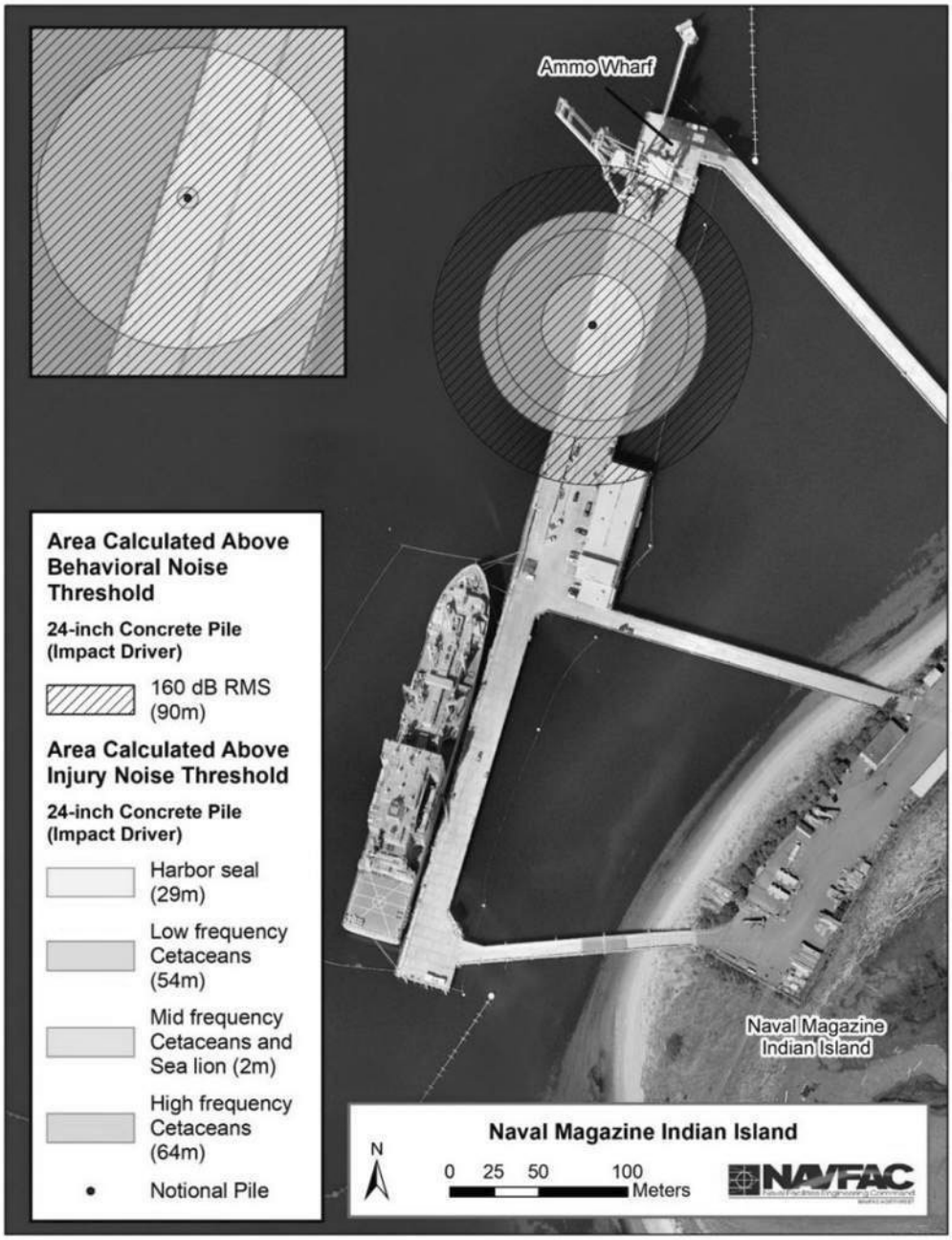
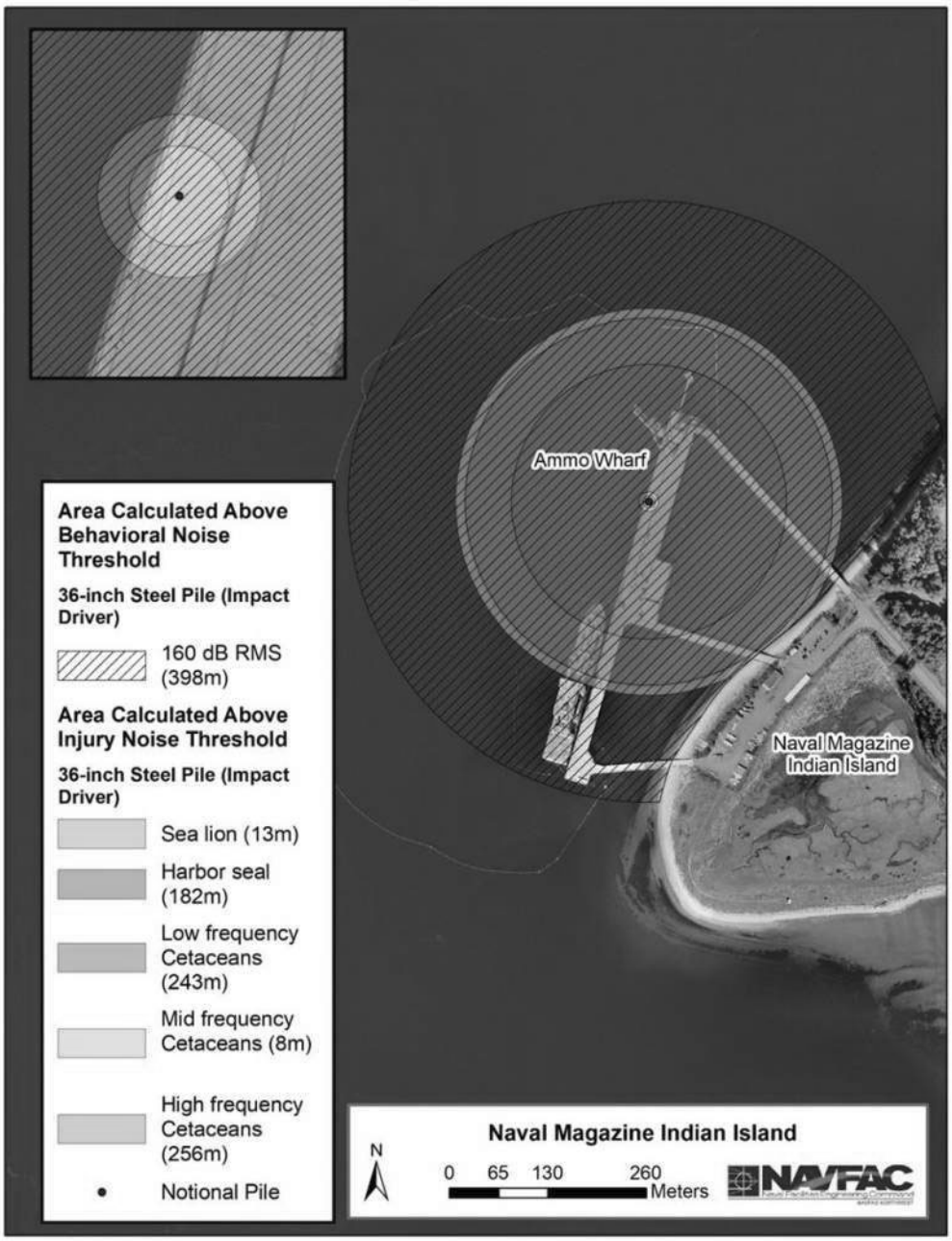


Figure 2-2. Diagram of Monitoring and Shutdown Zones for Pinnipeds and Harbor Porpoises



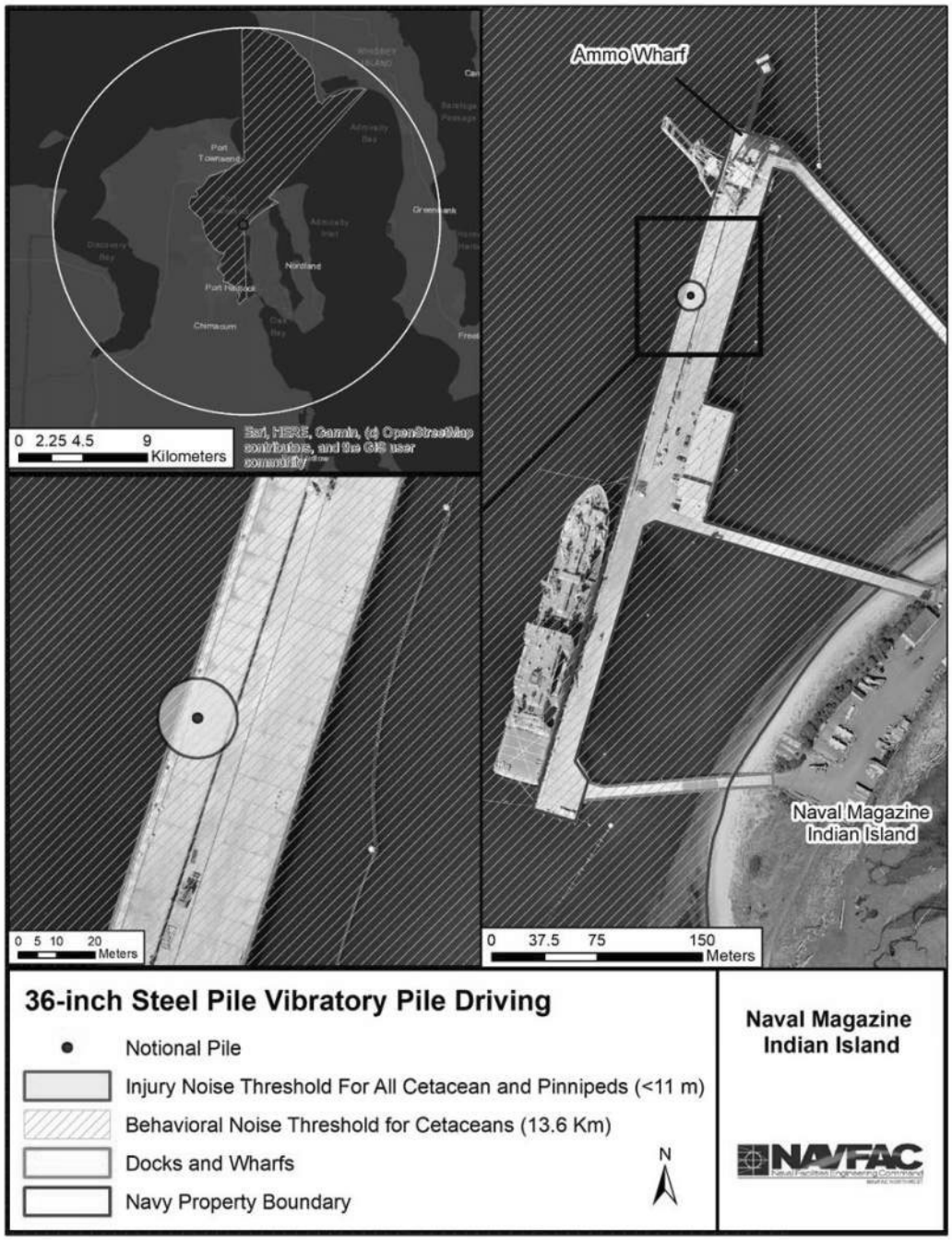
Marine Mammal Group	*Behavioral Threshold (meters)*	*Monitoring Zone (meters)*	*Injury Threshold (meters)*	*Shutdown Zone (meters)*
Cetaceans Harbor Porpoise	86	90	64	90
Harbor Seal	86	90	29	30
California Sea Lion	86	90	2	10

Figure 2-3 Summary of Marine Mammal Visual Monitoring and Shutdown Zones for Impact Pile Driving for 24-Inch Concrete Piles



Marine Mammal Group	*Behavioral Threshold (meters)*	*Monitoring Zone (meters)*	*Injury Threshold (meters)*	*Shutdown Zone (meters)*
Cetaceans Harbor Porpoise	398	400	256	400
Harbor Seal	398	400	182	200
California Sea Lion	398	400	13	20

Figure 2-4 Summary of Marine Mammal Visual Monitoring and Shutdown Zones for Impact Pile Driving for 36-Inch Steel Piles



Marine Mammal Group	Behavioral Threshold (kilometers)	Monitoring Zone (meters)	Injury Threshold (meters)	Shutdown Zone (meters)
Cetaceans Harbor Porpoise	13.6	13.6	9	400
Harbor Seal	13.6	13.6	6	10
California Sea Lion	13.6	13.6	1	10

Figure 2-5 Summary of Marine Mammal Visual Monitoring and Shutdown Zones for 36-inch Steel Pile Vibratory Pile Driving

Marine Mammal Group	Behavioral Threshold (meters)	Monitoring Zone (meters)	Injury Threshold (meters)	Shutdown Zone (meters)
Cetaceans Harbor Porpoise	1,000	1,000	<1	1000
Harbor Seal	1,000	1,000	<1	10
California Sea Lion	1,000	1,000	<1	10

Figure 2-8 Summary of Marine Mammal Visual Monitoring and Shutdown Zones for Vibratory Removal and Installation of Fender Piles.

3 INTERAGENCY NOTIFICATION

In the event that the Navy needs to modify terms of this monitoring plan, the NMFS representative will be promptly contacted for discussion of the requested modification.

In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by this IHA, such as an injury (Level A harassment), serious injury, or mortality, the Navy shall immediately cease the specified activities and report the incident to the Chief of the Permits and Conservation Division (301-427-8425), Office of Protected Resources, NMFS, and the Northwest Regional Stranding Coordinator (206-526-6550), NMFS. The report must include the following information:

- Time and date of the incident;
- Description of the incident;
- Environmental conditions (e.g., wind speed and direction, Beaufort Sea state, cloud cover, and visibility);
- Description of all marine mammal observations in the 24 hours preceding the incident;
- Species identification or description of the animal(s) involved;
- Fate of the animal(s);
- Photographs or video footage of the animal(s); and
- Name and contacts of PSOs present.

Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS will work with the Navy to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure Marine Mammal Protection Act compliance. The Navy may not resume its activities until notified by NMFS.

In the event that the Navy discovers an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is relatively recent (e.g., in less than a moderate state of decomposition), the Navy shall immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the Northwest Regional Stranding Coordinator, NMFS. The report will include the same information as listed above. Activities may continue while NMFS reviews the circumstances of the incident. The Navy will work with NMFS to determine whether additional mitigation measures or modifications to the activities are appropriate.

In the event that the Navy discovers an injured or dead marine mammal, and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in the IHA (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), the Navy shall report the incident to the Chief of Permits and Conservation Division, Office of Protected Resources, NMFS, and the Northwest Regional Stranding Coordinator, NMFS, within 24 hours of the discovery. The Navy shall provide photographs or video footage or other documentation of the stranded animal sighting to NMFS.

Care should be taken in handling dead specimens to preserve biological materials in the best possible state for later analysis of cause of death, if that occurs. In preservation of biological materials from a dead animal, the finder (i.e., the PSO) has the responsibility to ensure that evidence associated with the specimen is not unnecessarily disturbed. The Navy will prepare a Chain of Custody Record (Appendix C) to document handling of specimens.

Primary points of contact for the Navy are:

1. Sara Street - (360) 396-5394 Office; sara.c.street@navy.mil
2. Bill Kalina - (360) 396-5353 Office; (360) 981-8391 Cell; william.kalina@navy.mil
3. Phil Thorson – (360) 315-2812 Office; (831) 234-5793 Cell; philip.h.thorson.civ@us.navy.mil

The Navy primary point of contact will contact NMFS. The primary points of contact at NMFS are:

1. Chief of the Permits and Conservation Division − Ben Laws (301) 427-8425
2. Northwest Regional Stranding Coordinator − Stranding Hotline (866) 767-6114 or Kristen Wilkerson (206) 526-6550

4 MONITORING REPORTS

A draft PSO summary report will be submitted to NMFS within 90 work days of the completion of marine mammal monitoring. A final report will be prepared and submitted to the NMFS within 30 days following receipt of comments on the draft report from the NMFS. At a minimum, the report shall include the following:

- **General data:**
  - Date and time of activities;
  - Water conditions (e.g., sea state, tidal state); and
  - Weather conditions (e.g., percent cover, visibility).
- **Specific pile data:**
  - Description of the pile driving activities, including the size and type of pile;
  - The installation methods used for each pile and the duration each method was used per pile;
  - Impact or vibratory hammer force used to drive piles;
  - Detailed description of the sound attenuation system, including the design specifications;
  - Depth of water in which the pile was driven; and
  - Depth into the substrate that the pile was driven.
- **Specific pile removal data:**
  - Description of the pile removal activities being conducted:
    - Size and type of piles;
    - The machinery used for removal;
    - Duration each pile removal method was used; and
    - The vibratory driver force.
- **Pre-pile driving monitoring data:**
  - Dates and times monitoring was initiated and terminated;
  - Description of any observed marine mammal species and behaviors in the monitoring zones;
  - If possible, the correlation to underwater sound levels occurring at the time of the observable behavior; and
  - Actions performed to minimize impacts to marine mammals.
- **During pile driving monitoring data:**
  - Description of any observed marine mammal species and behavior within monitoring zones or in the immediate area surrounding monitoring zones, including the following:
    - Measured or estimated distance from animal to source;
    - Reason why/why not shutdown was implemented;

- If a shutdown was implemented, behavioral reactions noted and if they occurred before or after implementation of the shutdown;
- If a shutdown was implemented, the relative location of the animal to sound source at the time of the shutdown;
- Behavioral reactions noted during soft starts[1] and if they occurred before or after implementation of the soft start; and
- Measured or estimated distance or relative location (i.e., in a monitoring zone) to the animal from the source during soft start.

○ Actions performed to minimize impacts to marine mammals;

○ Times when pile driving was stopped due to presence of marine mammals within the Shutdown Zones and time when pile driving resumed;

○ Size and type of pile being installed; and

○ Installation method.

- **Post-pile driving monitoring data:**

○ Results, which include the observations of marine mammal species and group sizes, estimated distances, behaviors, and location within or outside of monitoring zones; and

○ A refined take estimate based on the number of marine mammals observed during the course of construction.

[1] The objective of a soft start is to provide a warning and/or give animals in proximity to pile driving a chance to leave the area prior to a vibratory or impact driver operating at full capacity; thereby, exposing fewer animals to loud underwater and airborne sounds.

APPENDIX A MARINE MAMMAL OBSERVATION RECORD FORM

Project Name: ______________________ Monitoring Location______________________ Page ________ of ________
(Pier Location, Vessel based, Land Location, other)

Date: ______________________ Vessel Name: ______________________ Time Effort Initiated: ____________

Time Effort Completed: ____________

Sighting Data

Event Code	Sighting Number (1 or 1.1 if resight)	Time/Duration watching sighting (Start/End time if continuous)	WP # (every time a sighting is made)	Observer	Sighting cue	Species	Dist/ Dir to Animal (from Observer)	Dist to Pile (btwn animal & pile)	# of Animals Group Size (min/max/best)# of Calves	Relative Motion/and Behavior Code (see code sheet)	Const Type During Sighting	Miti gation used during sighting?	Miti gation Type?	Visibility	% Glare	Weath Cond	Sea State and Wave Ht	Swell Dir	Behavior Change/ Response to Activity/Comments
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSV SSI V I PC DP ST NONE	Y N	DE SD	B P M G E			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSV SSI V I PC DP ST NONE	Y N	DE SD	B P M G E			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSV SSI V I PC DP ST NONE	Y N	DE SD	B P M G E			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSV SSI V I PC DP ST NONE	Y N	DE SD	B P M G E			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSV SSI V I PC DP ST NONE	Y N	DE SD	B P M G E			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSV SSI V I PC DP ST NONE	Y N	DE SD	B P M G E			Light Mod Heavy	N or S W or E	
		: : : :					m or km °	m or km	/ / __ calves	opening closing parallel none	PRE POST SSV SSI V I PC DP ST NONE	Y N	DE SD	B P M G E				N or S W or E	

Sighting #=chronological number of sightings, If resight of same animal, then 1.1, 1.2, etc. WP (Waypoint)=GPS recording of lat/long, time/date stamp. Critical for vessel observers.

Sighting Codes

Code	Marine Mammal Species
CASL	California Sea Lion
HSEA	Harbor Seal
STSL	Steller Sea Lion
HPOR	Harbor Porpoise
DPOR	Dall's Porpoise
ORCA	Killer Whale
HUMP	Humpback Whale
UNLW	Unknown Large Whale
RIVO	River Otter (not a marine mammal)
OTHR	Other
UNKW	Unknown

Event

Code	Activity
E ON	On Effort
E OFF	Off Effort
PRE	Pre Watch
POST	Post Watch
SSV	Soft Start Vibratory
SSI	Soft Start Impact
WC	Weather Condition/Change
S	Sighting
M-DE	Mitigation Delay
M-SD	Mitigation Shutdown
RE-S	Re Start

Construction Type

Code	Activity
SSV	Soft Start (Vibratory)
SSI	Soft Start (Impact)
V	Vibratory Pile Driving (installation and extraction)
I	Impact Pile Driving
PC	Pneumatic Chipping
DP	Dead Pull
ST	Stabbing
NONE	No Pile Driving

Mitigation Codes

Code	Activity
DE	Delay Onset of Pile Driving
SD	Shut Down Pile Driving

Visibility

Code	Activity
B	Bad (<0.5 km)
P	Poor (0.5-1.5 km)
M	Moderate (1.5-10 km)
G	Good (10-15 km)
E	Excellent (<15 km)

Glare

Percent should be total glare of observer's area of responsibility. Are they covering 90 degrees or 180 degrees? Total glare for that area and write that area down on the datasheet so we know later what percentage of the field of view was poor due to glare.

Weather Conditions

Code	Activity
S	**Sunny**
PC	**Partly Cloudy**
L	**Light Rain**
R	**Steady Rain**
F	**Fog**
OC	**Overcast**

Sea State and Wave Height

Code	Activity
Light	**0-3 ft**
Moderate	**4-6 ft**
Heavy	**>6 ft**

Swell Direction

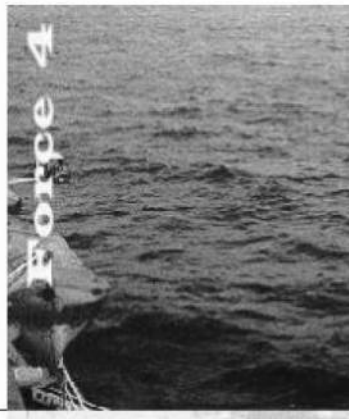
Swell direction should be where the swell is coming from (S for coming from the south). If possible, record direction relative to fixed location (i.e., pier). Choose this location at the beginning of the monitoring project.

APPENDIX B BEAUFORT SEA STATE SCALE

US Navy and Beaufort Sea State Codes (http://ioc.unesco.org and http://www.wrh.noaa.gov/pqr/info/beaufort.php)

Beaufort Sea State	*Wind Speed (knots)*	*Wind Description*	*Wave Height (ft) Beaufort*	*Sea State – Beaufort*	*Notes Specific to On-water Seabird Observations*	*Photos Indicating Beaufort Sea State*
0	<1	Calm	0	Calm; like a mirror	Excellent conditions, no wind, small or very smooth swell. You have the impression you could see anything.	
1	1-3	Light air	¼ < ½	Ripples with appearance of scales; no foam crests	Very good conditions, surface could be glassy (Beaufort 0), but with some lumpy swell or reflection from forests, glare, etc.	

Beaufort Sea State	*Wind Speed (knots)*	*Wind Description*	*Wave Height (ft) Beaufort*	*Sea State – Beaufort*	*Notes Specific to On-water Seabird Observations*	*Photos Indicating Beaufort Sea State*
2	4-6	Light breeze	½ – 1 (max 1)	Small wavelets; crests with glassy appearance, not breaking	Good conditions, no whitecaps; texture/lighting contrast of water make murrelets hard to see. Surface could also be glassy or have small ripples, but with a short, lumpy swell, thick fog, etc.	
3	7-10	Gentle breeze	2 – 3 (max 3)	Large wavelets; crests begin to break; scattered whitecaps	Fair conditions, scattered whitecaps, detection of murrelets definitely compromised; a hit-or-miss chance of seeing them owing to water choppiness and high contrast. This could also occur at lesser wind with a very short wavelength, choppy swell.	

Beaufort Sea State	*Wind Speed (knots)*	*Wind Description*	*Wave Height (ft) Beaufort*	*Sea State – Beaufort*	*Notes Specific to On-water Seabird Observations*	*Photos Indicating Beau*
4	11-16	Moderate breeze	3 ½ – 5 (max 5)	Small waves becoming longer, numerous whitecaps	Whitecaps abundant, sea chop bouncing the boat around, etc.	
5	17-20	Fresh breeze	6 – 8 (max 8)	Moderate waves, taking longer form; many whitecaps; some spray		

APPENDIX C CHAIN OF CUSTODY FORM

<table>
<tr><td colspan="6">Chain of Custody Record</td></tr>
<tr><td colspan="2">Date and Time of Collection:</td><td colspan="2">Duty Station:</td><td colspan="2">Collection By:</td></tr>
<tr><td colspan="3">Source of Specimen (Person and/or Location):

Found At:</td><td colspan="3">Project Name:</td></tr>
<tr><td>Item No:</td><td colspan="5">Description of Specimen (Include Species and Tag Number):</td></tr>
<tr><td rowspan="2">Item No:</td><td>From: (Print Name, Agency)</td><td>Release Signature:</td><td>Release Date:</td><td colspan="2" rowspan="2">Delivered via:
FEDEX
U.S. Mail
In Person
Other:</td></tr>
<tr><td>To: (Print Name, Agency)</td><td>Receipt Signature:</td><td>Receipt Date:</td></tr>
</table>

Chain of Custody Record				
Item No:	From: (Print Name, Agency)	Release Signature:	Release Date:	Delivered via: FEDEX U.S. Mail In Person Other:
	To: (Print Name, Agency)	Receipt Signature:	Receipt Date:	
Item No:	From: (Print Name, Agency)	Release Signature:	Release Date:	Delivered via: FEDEX U.S. Mail In Person Other:
	To: (Print Name, Agency)	Receipt Signature:	Receipt Date:	
Item No:	From: (Print Name, Agency)	Release Signature:	Release Date:	Delivered via: FEDEX U.S. Mail In Person Other:
	To: (Print Name, Agency)	Receipt Signature:	Receipt Date:	
Item No:	From: (Print Name, Agency)	Release Signature:	Release Date:	Delivered via: FEDEX U.S. Mail In Person Other:
	To: (Print Name, Agency)	Receipt Signature:	Receipt Date:	

DRAFT

NAVAL MAGAZINE INDIAN ISLAND

AMMUNITION WHARF

MAINTENANCE AND PILE REPLACEMENT

PROGRAM

Marbled Murrelet Monitoring Plan

Navy Region Northwest
December 2023

Prepared by:
Naval Facilities Engineering Command Northwest
1101 Tautog Circle
Silverdale, WA 98315

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Marbled Murrelet Monitoring Plan[1] for the Naval Magazine Indian Island Ammunition Wharf Maintenance and Pile Replacement Program

1 OBJECTIVE

The intent of the monitoring protocol is to:

1. Comply with the requirements of the Endangered Species Act Section 7 consultation for the United States Department of the Navy (Navy) Maintenance and Pile Replacement Program at Naval Magazine Indian Island Ammunition Wharf.
2. Detect all marbled murrelets (*Brachyramphus marmoratus*) (murrelets) within 168 meters of impact pile driving.
3. To avoid take of murrelets from both exposure to potentially injurious underwater sound pressure levels, and from the masking effects of in-air sound associated with impact pile driving[2] by communicating immediately with the pile driving operator to shut-down pile driving.

2 ADAPTIVE APPROACH

The individuals that implement this protocol will assess its effectiveness during implementation. They will use their best professional judgment throughout implementation and will seek improvements to these methods when deemed appropriate. Any modifications to this protocol will be coordinated between the Navy and the U.S. Fish and Wildlife Service's Washington Fish and Wildlife Office (WFWO).

3 MONITORING

3.1 Activities to Be Monitored

Application of this protocol is required as specified through the Endangered Species Act consultation process for the Ammo Wharf Maintenance and Pile Replacement Program Project. It applies to project activities that involve either in-water impact pile driving when injurious sound pressure levels are expected or impact pile driving when in-air sounds are expected to cause masking effects.

3.2 Equipment

- Binoculars – quality 8 or 10 power;
- Spotting scopes (optional);
- Two-way radios with earpieces or cell phones;
- Range finder;

[1] This protocol is based on USFWS protocol dated August 2012; however, the protocol was modified to avoid hazing of murrelets from monitoring vessels.

[2] The threshold for injury due to elevated underwater sound pressure levels during impact pile driving is 202 dB re 1 µPa cumulative SEL, which is approximately 13 meters from a 36-inch steel pile during impact driving. Based on information from USFWS (http://www.wsdot.wa.gov/environment/biology/ba/baguidance.htm#noise), the criterion for sound potentially resulting in auditory masking of communication calls is 168 meters from impact pile driving.

- Log books;
- Seabird identification guide;
- Life vest or other personal flotation device for observer in boats;
- Hard hat or other PPE needed for Lead Biologist;
- Monitoring Plan; and
- Cellular phone to contact the Construction Contractor and the Navy personnel responsible for coordinating monitoring. The Navy will contact WFWO if necessary during the project.

3.3 Monitoring Location

The spacing and placement of the monitoring locations have been designed to provide adequate coverage of the entire monitoring area. As pile driving locations move on the Ammo Wharf and if conditions change on-site such as barge movements or presence of other vessels, monitoring locations can be refined in the field. For example, a stationary boat may be used on one side of a wharf to provide full visual coverage. In all cases, the monitoring location will allow for the entire monitoring area to be fully surveyed within 5 minutes.

3.4 Monitoring Techniques

One qualified biologist shall be identified as the Lead Biologist. The Lead Biologist has the authority to stop pile driving when murrelets are detected in the monitoring area or when visibility impairs monitoring. The Lead Biologist is responsible for:

- Ensuring monitoring is consistent with the criteria in the consultation;
- Communicating with monitoring crew(s), the pile driver operator, and the Navy monitoring points of contact (Section 5.0). The Navy will be responsible for communicating with WFWO should it be necessary during project construction.
- Determining monitoring start and end times.

The Lead Biologist will be positioned at a safe location near the pile driving operator. At least one qualified observer will be positioned to provide adequate coverage to ensure no murrelets are in the 168-meter monitoring area during impact pile driving. The murrelet observer will either be positioned within a boat or on the wharf (Figure 1). Monitoring will begin at least 30 minutes prior to commencement of pile driving.

All observers are responsible for:

- Understanding the requirements in the consultation and monitoring plan;
- Knowing the lines and method of communicating with the Lead Biologist and pile driving operator;
- Evaluating the sea conditions and visibility;
- Calibrating their ability to determine a 50-meter distance at the beginning of each day. Calibration should be done using a range finder on a stationary object on the water; and
- Determining when conditions for monitoring are not met.

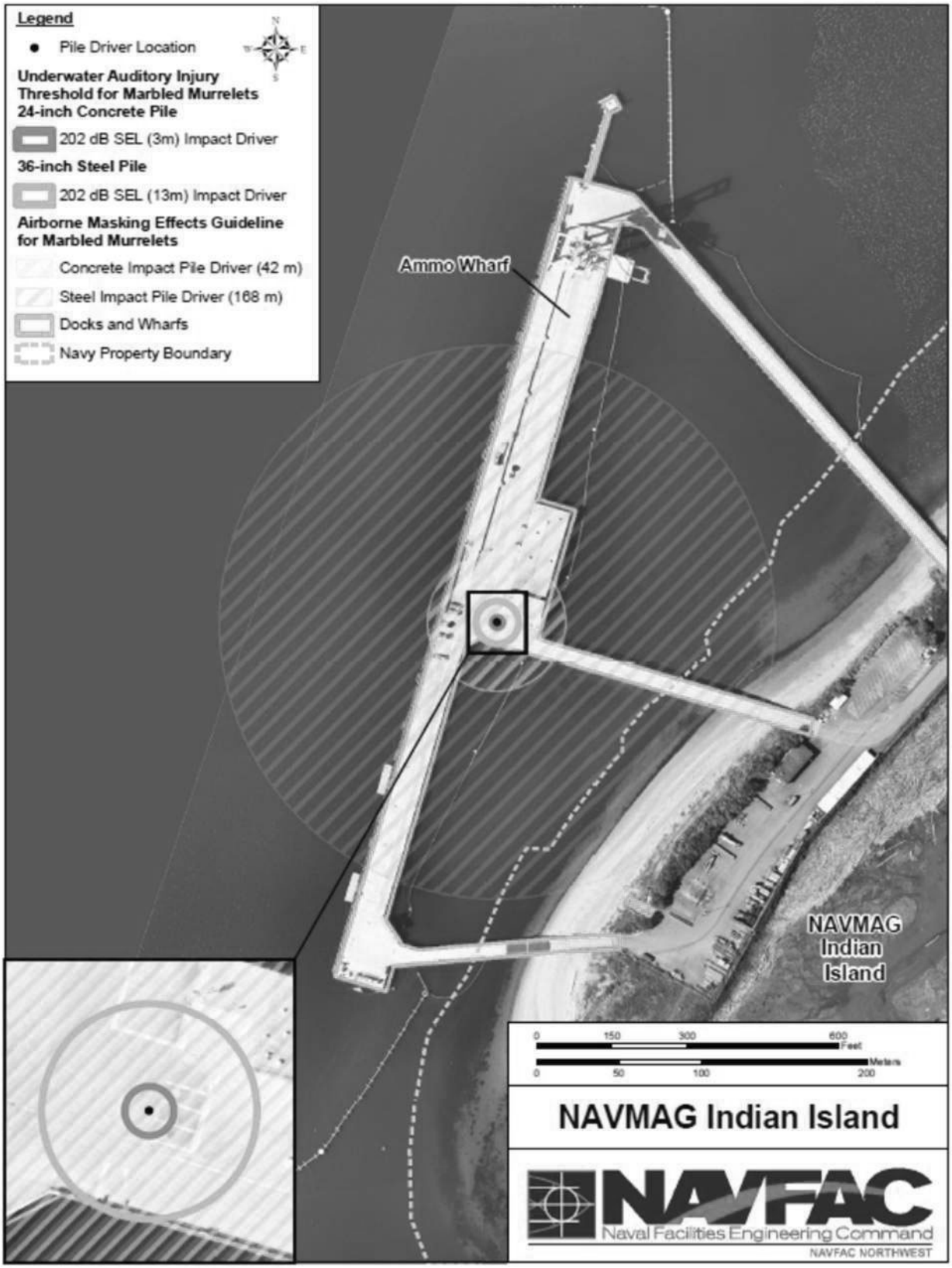

Figure 1. Marbled Murrelet Monitoring Zones At the Ammunition Wharf

Monitoring will only occur when the sea state is at a Beaufort scale of 2 or less. The Beaufort scale is presented in Table 1. Observers should scan without a scope or binoculars; scopes and binoculars should only be used to verify species.

Table 1. Beaufort Wind Scale (0=calm to 12=hurricane)

Force	Wind (knots)	Classification	Appearance of Wind Effects on the Water	Appearance of Wind Effects on Land	Notes Specific to On-water Seabird Observations
0	<1	Calm	Sea surface smooth and mirror like	Calm, smoke rises vertically	Excellent conditions, no wind, small or very smooth swell. You have the impression you could see anything.
1	1-3	Light air	Scaly ripples, no foam crests	Smoke drift indicates wind direction, still wind vanes	Very good conditions, surface could be glassy (Beaufort 0), but with some lumpy swell or reflection from forests, glare, etc.
2	4-6	Light breeze	Small wavelets, crests glassy, no breaking	Wind felt on face, leaves rustle, vanes begin to move	Good conditions, no whitecaps, texture/lighting contrast of water make murrelets more difficult to see. Surface could also be glassy or have small ripples, but with a short, lumpy swell, thick fog, etc.
3	7-10	Gentle breeze	Large wavelets, crests beginning to break, scattered whitecaps	Leaves and small twigs constantly moving, light flags extended	Surveys cease, scattered whitecaps present, detection of murrelets definitely compromised, a hit-or-miss chance of seeing them owing to water choppiness and high contrast. This could also occur at lesser wind with a very short wavelength, choppy swell.
4	11-16	Moderate breeze	Small waves 0.3 to 1.1 m becoming longer, numerous whitecaps	Dust, leaves, and loose paper lifted, small tree branches move	Whitecaps abundant, sea chop bouncing the boat around, etc.
5	17-21	Fresh breeze	Moderate waves 1.1 to 2.0 m taking longer form, many whitecaps, some spray	Small trees begin to sway	

No impact pile driving will occur if the marbled murrelet monitoring protocol cannot be implemented. At least two full sweeps of the monitoring zone shall be conducted prior to pile driving to ensure that no murrelets are in the monitoring zone. The observer is responsible for scanning from 0° (straight ahead) to 90° left or right. The observer should occasionally scan past 90°, looking for murrelets that may have surfaced.

If no murrelets are within the monitoring zone, the observers will notify the Lead Biologist who will communicate to the pile driver operator that pile driving may commence. All observers will have two-way radios with earpieces to allow for effective communication during pile driving. The Lead Biologist will maintain communication with the pile driving operator via two-way radios and may use cell phones as a backup. If murrelets are seen within the monitoring zone during pile driving, the observers will immediately notify the Lead Biologist who will communicate to the pile driver operator that he/she is to cease pile driving. Pile driving will not resume until the murrelets have left the monitoring area and at least two full sweeps of the monitoring area have confirmed murrelets are not present.

When a murrelet is detected within the monitoring area, it will be continuously observed until it leaves the monitoring area. If observers lose sight of the murrelet, searches for the murrelet will continue for at least 5 minutes. If the murrelet is still not found, then at least two full sweeps of the monitoring area to confirm no murrelets are present will be conducted prior to resumption of pile driving.

It is the observer's responsibility to determine if he/she is not able to see murrelets and inform the Lead Biologist that the monitoring needs to be terminated until conditions allow for accurate monitoring.

Murrelets are especially vulnerable to disturbance when they are molting and flightless. Molting occurs after nesting in late summer, typically July through October in Puget Sound populations. Extra precaution should be exercised during this period.

3.5 Limitations

No monitoring will be conducted during inclement weather that creates potentially hazardous conditions as determined by the Lead Biologist. Observers must have visibility to at least 50 m. No monitoring will be conducted when visibility is significantly limited such as during heavy rain, fog, glare or in a Beaufort Sea state greater than 2.

Glare can significantly limit an observer's ability to detect birds. Boat orientation may be adjusted to reduce glare (e.g., change direction). However, if visibility cannot be adjusted, monitoring and pile driving must cease until effective monitoring can be conducted.

Monitoring will not start until after sunrise and will cease prior to sunset.

3.6 Documentation

The observers will document the number and general location of all murrelets in the monitoring area. Additional information on other seabirds and behaviors will be collected during documentation to improve general data knowledge on seabird presence and distribution as well as project impacts on various seabirds. Each observer will record information using the *Seabird Monitoring Data Collection Form* and reference completed *Seabird Monitoring Site/Transects Identification* form. Both forms are included in the Appendix.

3.7 Data Collection

All murrelets within transects or monitoring zones will be continuously documented. On the *Seabird Monitoring Data Collection Form*, document the time, number of birds, location, and observed behavior.

Update the documentation when a murrelet changes behavior, changes location, or leaves the area. Include the time pile driving ceased and how long project activities were halted.

Observers will also note all seabirds within the area that appear to be acting abnormally during any project activities. For example, if a seabird is listing, paddling in circles, shaking head, or suddenly flushing at the onset of activity, note the information on the *Seabird Monitoring Data Collection Form.* For all birds except murrelets, providing a genus level (grebe, loon, cormorant, scoter, gull, etc.) of identification is sufficient.

General information on other seabird behavior and distribution within the monitoring area will be collected. Every two hours at minimum during pile driving activities, the observer will document other seabird presence, behavior, and distribution in the monitoring area. This information can be collected more frequently. Many seabirds may linger in an area for several hours. If this is the case, note the time, species, and in the comments section identify that this is the same group from earlier and document any notable changes in behavior.

Under location, the data form indicates two separate options for documenting location. Land-based observers can fill out the land-based only or both land-based and boat sections. For the boat locations, identify the distance in meters from the boat to the seabird and whether it is landward (toward activity) or seaward (away from activity).

3.8 Timing and Duration

Pile driving will not begin until the monitoring pre-sweep has been conducted. The pre-sweep monitoring can commence once there is enough daylight for adequate visibility, and must begin at least 30 minutes before the initiation of pile driving through 15 minutes post-completion of impact pile driving. The monitoring set-up (i.e., number and location of observers) allows for the entire monitoring area to be covered within 5 minutes.

3.9 Contingency

In the unlikely event that a murrelet is perceived to be injured by pile driving, all pile driving will cease and WFWO will be contacted by Navy personnel as soon as possible.

The Navy will work with WFWO to determine if changes to the monitoring plan as described in Section 2.0 above are necessary. Pile driving will not resume until the necessary amendments have been made; unless the WFWO cannot be reached, then the Lead Biologist determines the course of action and continues to ensure consistency with the consultation.

4 FWS COMMUNICATION

The Navy will keep the WFWO informed of the progress and effectiveness of the monitoring activities and will notify the WFWO of any problems and/or necessary modifications to the monitoring plan. The Navy will coordinate with the WFWO in the development of a modified approach and will obtain WFWO approval for such modifications.

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Primary points of contact for the Navy are:

1. Sara Street - (360) 396-5394 Office; sara.c.street@navy.mil
2. Bill Kalina - (360) 396-5353 Office; (360) 981-8391 Cell; william.kalina@navy.mil
3. Phil Thorson – (360) 315-2812 Office; (831) 234-5793 Cell; philip.h.thorson.civ@us.navy.mil
4. Frank Nichols: (360) 315-5411; thomas.f.nichols2.civ@us.navy.mil

The Navy point of contact will contact the WFWO contact. Primary points of contact at the USFWS and WFWO are:

1. Andrew Lade: 360-753-9544
2. Ryan McReynolds: (360) 753-6047
3. Emily Teachout: (360) 753-9583

5 PERSONNEL QUALIFICATIONS AND TRAINING

All observers must be certified by the USFWS under the Marbled Murrelet Marine Protocol. Observers will have appropriate qualifications, including education or work experience in biology, ornithology, or a closely related field; at least one season (2–3 months) of work with bird identification being the primary objective (i.e., not incidental to other work). Observers must have experience identifying marine birds in the Pacific Northwest, as well as understanding and documenting bird behavior.

All observers will attend the marbled murrelet marine monitoring protocol training and pass the written and photo examination with 90 percent proficiency. Upon successful completion, observers will be certified. Certification is valid for one year. Recertification is required annually, unless the observer can document that he/she implemented the monitoring protocol for at least 25 monitoring days in the previous year. Recertification can then be delayed for one year; however, recertification can only be delayed for one year.

Certifications will be considered expired after one year, unless the WFWO is notified by the biologist that greater than 25 days of survey were done within one year of their certificate date. If an observer does conduct greater than 25 days of survey the certificate will be valid for an additional year from the certificate date. To extend a certification the biologist sends an email to the attention of Emily Teachout (emily_teachout@fws.gov) with the dates of the surveys they conducted and the date of their original certificate. The WFWO will maintain a list a certified observers and it will be available on our website.

All observers will be provided with a copy of the consultation documents for the project. Observers must read and understand the contents of the consultation documents related to identifying, avoiding, and reporting “incidental take” of murrelets.

6 REPORTING

At the completion of each in-water work window for which there has been impact pile driving, the Navy will forward a monitoring report to the WFWO within 30 days.

Reports shall be sent to the attention of (WFWO Branch Manager). The report shall include:

- Observation dates, times, and conditions
- Copies of field data sheets or logs

APPENDIX A

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Seabird Monitoring Data Collection Form

Date_____

Project Name _____ **Monitoring Site/Transect ID** _____

Observers_____

Activity _____ **Time and Duration**_____

Time	Species	# of birds	Wind speed (Beaufort Marine scale)	Land Observer	Boat Observer		Observed Behavior*	Comments
				Grid Location	Distance	Land/Sea Ward		

* R=resting, F=feeding/diving, P=preening, Y=flying/flushing, T=transient, N=nesting, O=other