

1035 Trident Boulevard Silverdale, Washington 98135

for Triton Marine Construction Corporation

May 7, 2024



Protected Species Monitoring Report: Marine Mammals and Marbled Murrelet Naval Base Kitsap at Bangor EHW1 Pile Replacement Project

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554 West Bakerview Road Bellingham, Washington 360-647-1510

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1.0 INTRODUCTION

The U.S. Department of the Navy (Navy) is conducting maintenance, pile replacement, and repair activities at marine waterfront structures over a 5-year period at six installations within Navy Region Northwest (Region). These installations, which are located in the Puget Sound region of Washington State, include: Naval Base (NAVBASE) Kitsap Bangor, NAVBASE Kitsap Bremerton, NAVBASE Kitsap Keyport, NAVBASE Kitsap Manchester, Zelatched Point, and Naval Station (NAVSTA) Everett. During the 2023-2024 in-water work season, the Navy conducted a pile replacement project at NAVBASE Kitsap Bangor Explosives Handling Wharf 1 (EHW1) (Figure 1, Vicinity Map).

The project included installation of eight (8) 30-inch-diameter steel piles and four (4) 12-inch-diameter steel guide piles. The piles were installed with a vibratory hammer until they hit refusal at which point an impact hammer was used. As required by the Letter of Authorization (LOA) issued by the National Oceanic and Atmospheric Administration (NOAA) under the Marine Mammal Protection Act (MMPA) a bubble curtain was employed during impact installation of steel piles where water depths were greater than 0.67 meters (2 feet).

This report summarizes the marine mammal and marbled murrelet monitoring effort implemented for the pile installation activities at EHW1 which occurred from August 14 through September 26, 2023. The effort was implemented in accordance with the LOA dated July 5, 2023 (NOAA 2023) and Marine Mammal Monitoring Plan (MMMP) dated April 2023 for marine mammals (NAVFAC 2023a). Additionally, marbled murrelet monitoring was implemented during impact installation in accordance with the Marbled Murrelet Monitoring Plan dated April 2023 (NAVFAC 2023b).

2.0 METHODS

2.1. Project Area

Naval Base Kitsap (NBK) at Bangor, Washington is located on the eastern shoreline of Hood Canal approximately 20 miles (32.19 kilometers) due west of Seattle, Washington (Figure 1). NBK at Bangor provides berthing and support services to Navy submarines and other fleet assets. EHW1 is located within the northern portion of NBK at Bangor's Waterfront Restricted Area (WRA) (Figure 1). The entire NBK at Bangor waterfront, as well as the adjacent water areas in the Hood Canal, is restricted to the general public.

The wharf is a U-shaped concrete structure built in 1977 for ordnance handling operations in support of the Trident Submarine squadron home ported at NBK Bangor (Navy 2011). EHW1 consists of two 100-foot (30.5 meters) access trestles and a main pier deck, which measures approximately 700 feet (213 meters) in length and is approximately 500 feet (183 meters) wide. The wharf is supported by both 18-inch and 24 inch-diameter hollow, octagonal, pre-cast concrete piles (approximately 130 feet [40 meters] in length) (Navy 2011). Protected species monitoring was focused on the immediate vicinity of the structure within the WRA, and in the waters immediately adjacent, where sound pressure levels (SPL) associated with pile installation and removal activities could potentially be transmitted.



2.2. Project Staffing

Staff for the EHW1 Project included the Project Manager, marine mammal observers (MMOs), and marbled murrelet observers (MAMUs). MMOs were experienced in marine mammal identification and had the ability to identify marine mammal species and describe relevant behaviors that may occur in proximity to in-water construction activities. MAMUs were experienced in avian identification and certified by the United States Fish and Wildlife Service (USFWS). A total of seven certified MMOs and two certified MAMUs participated in the project. All observers were pre-approved by Navy environmental staff prior to monitoring activities.

2.3. Marine Mammal Observation Effort

2.3.1. Observation Stationing

Observers were outfitted with rangefinders, binoculars, compasses, and tablets with ArcGIS survey123 installed for data collection modeled after the Marine Mammal Observation Record Form. Observers used very high frequency (VHF) radios to communicate during the marine mammal surveys. All observers were supplied with copies of the monitoring plan, LOA, and Biological Opinions on waterproof paper.

2.3.1.1. Vessel Based

One vessel with an observer was positioned at a distance of approximately 500 meters to monitor the shutdown zones for all cetaceans and the behavioral (level B) zone for harbor seals and sea lions. The vessel would launch for the pre-activity survey, making a pass along the naval perimeter fence from the north end to the south end before stationing for observation approximately 500 meters northwest of the EHW1 trestle.

2.3.1.2. Pier Based

Two observers were positioned on the EHW1 trestle north and south of the piles to be removed or driven. The positioning of each observer was adjusted in-field to ensure a direct line of site to the shutdown zone around each pile. Care was taken to have line of sight by an observer for the exclusion zone inside as well as outside of the structure.

2.3.2. Monitoring Zones

The monitoring zones were established in the MMMP and included injury and behavioral disturbance monitoring zones (Figure 2, Example Monitoring Zones and Observer Locations).

The behavioral disturbance monitoring zone was established and encompassed as much of the zone where underwater sound pressure levels were estimated to be at or above 160 decibels (dB) re 1 micro-Pascal (μ Pa) for impact driving and for vibratory driving, the zone where vibratory pile driving noise levels were estimated to be at or above 120 dB Root Mean Square (RMS). The zones were monitored as feasible while being limited to areas inside the security perimeter fence at NBK. During all vibratory pile driving, the shutdown zone for all cetaceans also included the injury zone in addition to the behavioral zone.

The injury zone was calculated to prevent injury to marine mammals from noise due to impact pile driving steel piles and physical interaction with construction equipment. Shutdown zones were conservatively based on calculated injury zones (i.e. slightly larger to be conservative) in order to better shut down injurious activities prior to the potential for marine mammals to enter the injury zone. As such, the shutdown zones



were established by species, pile size, and equipment type. For cetaceans the shutdown zone (harbor porpoise, humpback whale, and transient killer whale) included the injury zone and a portion of the behavioral disturbance zone and that could be practicably monitored from observer positions. Observer positions were established to ensure shutdown reaction times were consistent with limiting injury where possible. Shutdown zones are presented below in Table 1.

TABLE 1 MINIMUM SHUTDOWN AND MONITORING ZONE (METERS)

			Minimum Shutd	lown Zone		Minimum
Pile Size/Install Method	Phocid	Otariid	Cetacean, Low Frequency	Cetacean, Mid Frequency	Cetacean, High Frequency	Observation Zone ¹
30-inch Steel, Impact	160	10	740	630	630	740 ²
30-inch steel, Vibratory	20	10	40	40	40	3
12-inch steel, impact	25	10	400	400	400	400
12-inch steel, vibratory	10	10	20	20	20	4

Notes:

²The estimated Level A harassment zone for low-frequency cetaceans exceeds the estimated Level B harassment zone. Therefore, while the shutdown requirement described applies to the monitoring zone for mid- and high-frequency cetaceans, the de facto minimum monitoring zone is equivalent to the largest shutdown zone (i.e., the 740-meter zone for low-frequency cetaceans, Figure 2).

³The estimated Level B harassment zone is 11,700 meters. Pursuant to Section 2.5 of the Marine Mammal Monitoring Plan, two observers will be positioned on the pier or shore. Observers at these locations will monitor the Level B harassment zone to the maximum extent possible based on daily visibility conditions.

⁴The estimated Level B harassment zone for 12-inch steel piles is 2,200 meters. Pursuant to Section 2.5 of the Marine Mammal Monitoring Plan, two observers will be positioned on the pier or shore. Observers at these locations will monitor the Level B harassment zone to the maximum extent possible based on daily visibility conditions.

2.3.3. Visual Monitoring Protocol

Observers surveyed the injury and behavioral threshold zones 15 minutes prior to the start of any pile driving through 30 minutes after the completion of pile driving work. General site conditions, including weather, visibility, and sea state were recorded along with species occurrence and behavioral observations.

2.4. Marbled Murrelet Monitoring

2.4.1. Observation Stationing

The spacing and placement of the monitoring location was implemented to provide coverage of the entire shutdown zone and make general observations on seabird occurrence at regular intervals. Locations were generally outside of EHW1 along the trestle closest to the impact pile driving activity with a secondary observer inside EHW1 to monitor the residual shutdown zone. In all cases, the monitoring location allowed for the entire monitoring area to be fully surveyed within 5 minutes. After several monitoring events, monitoring locations were refined in the field to drop the secondary observer as the residual shutdown zone



¹Observation of any cetacean within these zones requires shutdown of pile driving activity.

was always eclipsed by the work barge. The marbled murrelet exclusion zone available for marbled murrelets to occur (i.e., not obstructed by the pile driving barge) could be effectively monitored by a single marbled murrelet observer located on the trestle closest to impact pile driving operations by moving plus or minus 10 meters and completing two sweeps withing the 5-minute period. This field refinement in observation approach was implemented for future impact pile driving operations with a rationale transmitted to Triton Marine Construction Corporation (Titan) on September 7, 2023.

2.4.2. Monitoring Zone

The monitoring zone for marbled murrelets was calculated to be 36 meters for impact pile driving of 30 inch steel piles. Any instance of a marbled murrelet (or bird not positively identified) seen within this zone or approaching the zone during impact pile driving would result in a shutdown of pile driving activities. Observer(s) were positioned at an appropriate land-based vantage point(s) to scan for marbled murrelets within the monitoring zone. The land-based vantage points always had an unobstructed view of the open water monitoring zone.

2.4.3. Visual Monitoring Protocol

Pile driving did not begin until the monitoring pre-sweep had been conducted. The pre-sweep monitoring started 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. Since impact pile installation operations began in August 2023 and were completed before September 23, 2023 during the nesting season, pile driving was held until 2 hours after sunrise and completed 2 hours prior to sunset.

The observers were tasked with documenting the number and general location of all marbled murrelets in the monitoring area. Additional information on other seabirds and behaviors were also collected during observations to improve general data knowledge on seabird presence and distribution as well as potential project impacts on various seabirds. Each observer recorded information such as species, number, location, and behavior of any seabirds during observation efforts every 2 hours at a minimum. Other alcids present in the area were also documented when observed outside of the prescribed seabird monitoring interval.

All marbled murrelet observers were land based for this pile installation effort. No impact pile driving was allowed when visibility is significantly limited such as during heavy rain, fog, glare, or in a Beaufort Sea state greater than 2.

Once impact pile driving was completed for the day, a shoreline survey was performed each day looking for birds potentially adversely impacted by pile driving activities. Approximately 0.6 kilometers of shoreline was surveyed from a slow-moving vessel by an observer using binoculars with the intention of detecting recent seabird mortality.

2.5. Piles and Pile Driving Equipment

Pile driving operations were conducted between August 10 through September 26, 2023. During the EHW1 repairs a total of 12 hollow steel pipe piles were subject to installation or extraction. This includes eight 30 inch steel piles and four 12-inch steel piles. All piles were installed to proposed tip elevation unless refusal was met. All four 12-inch piles were installed with a vibratory hammer only, while all 30-inch piles required a combination of vibratory and impact hammer installation.



Pile-driving equipment was provided and operated by American Construction Co. One APE 200-6 vibratory hammer was used for all vibratory installation and one APE (Delmag) D50 diesel piston driven impact hammer was used for all impact driving for the duration of the project.

3.0 RESULTS

Weather conditions were variable as the project occurred during the transition from summer to fall. Conditions were largely clear with no precipitation between August 14 and August 21, 2023. Precipitation continued to be minimal while cloud cover became more consistently overcast moving into September 2023. Primary observed impacts on visibility included instances of fog and smoke.

Mitigative action was taken when protected species were observed within the shutdown zones. The pile driving operators were flagged and driving was stopped until the animal was either confirmed out of the shutdown zone and/or not resighted for a period of 15 minutes. A total of 9 shutdowns were initiated over the course of the project for a total duration of 86 minutes.

All pile driving activity for the project is summarized in Table 2. Raw data collected is provided in Appendix A.

TABLE 2. GENERAL PILE DRIVE SCHEDULE

Date	Activity Type	Pile Type	Pile Location	Monitoring Start and Stop	Daily Pile Driving Duration (min)	Total Shutdowns (Count; Duration)
August 14, 2023	Vibratory Installation	30-inch steel	North Bent	0755- 1100	46	None
August 15, 2023	Vibratory Installation	30-inch steel	North Bent	0800- 1130	41	None
August 21, 2023	Vibratory Installation	30-inch steel	North Bent	0800- 1100	79	None
August 22, 2023	Impact Installation	30-inch steel	North Bent	1	N/A	None
August 24, 2023	Impact Installation	30-inch steel	North Bent	0930- 1630	250	None
August 28, 2023	Vibratory Withdrawal/Installation and Impact Installation	30-inch steel	North Bent	0820- 1130	V - 10 I - 9	None
August 30, 2023	Vibratory and Impact Installation	30-inch steel	North Bent	0750- 1650	V - 62 I - 244	3; 37 minutes
September 6, 2023	Vibratory Installation	30-inch steel	South Bent	1015- 1510	29	None
September 8, 2023	Vibratory Installation	30-inch steel	South Bent	0745- 1510	78	None



Date	Activity Type	Pile Type	Pile Location	Monitoring Start and Stop	Daily Pile Driving Duration (min)	Total Shutdowns (Count; Duration)
September 11, 2023	Vibratory and Impact Installation	30-inch steel	South Bent	0730- 1500	V - 37 I- 66	1; 7 minutes
September 13, 2023	Vibratory and Impact Installation	30-inch steel	South Bent	1000- 1500	V - 16 I - 43	1; 4 minutes
September 14, 2023	Impact Installation	30-inch steel	North Bent	1200- 1330	4	None
September 19, 2023	Vibratory Installation	30-inch steel	South Bent	0800- 0940	33	None
September 20, 2023	Vibratory and Impact Installation	30-inch steel	South Bent	1000- 1520	V-28 I-60	None
September 26, 2023	Vibratory Installation	12-inch steel	Float Piles	0930- 1650	117	None

Note:

3.1. Marine Mammal Sightings

There are six marine mammal species (three cetacean and three pinniped), that occur regularly in the waters nearby NBK at Bangor in the Hood Canal: harbor seal (*Phoca vitulina richardii*), California sea lion (*Zalophus californianus*), Steller sea lion (*Eumetopias jubatus*), killer whale (*Orcinus orca*), Dall's porpoise (*Phocoenoides dalli dalli*), and the harbor porpoise (*Phocoena phocoena vomerina*). Of these six marine mammal species, four were observed during the EHW1 Pile Replacement Program: harbor porpoise, California sea lion, Steller sea lion, and harbor seal (Appendix A, Raw Mammal Sightings Data). All marine mammals sighted in the Hood Canal are managed by the National Marine Fisheries Service (NMFS).

A total of 254 marine mammal sightings were observed during the EHW1 Pile Replacement Project timeframe (Figure 3, All Observed Marine Mammal Sightings). Four species were sighted: the California sea lion, stellar sea lion, harbor porpoise, and harbor seal. The harbor seal was the most frequently sighted species by far, followed by California sea lion, stellar sea lion, and harbor porpoise. Potentially resighted individuals were recorded with a probability of re-sightings of 0 to 50, 50 to 70, 70 to 90, and 90 to 100. Sightings included both individuals and groups of individuals.

3.1.1. Observed Takes

Injury and behavioral harassment takes were calculated for marine mammals sighted during EHW-1 construction, including vibratory and impact events. Takes were calculated by: (1) quantifying sightings and measuring the sighting distance to the pile for all animals observed during construction activities; and (2) comparing this distance to underwater and airborne injury and behavioral harassment thresholds on a *per-species* and *per-pile* basis. Sighting distance to piles was calculated by plotting animal locations based



¹ Observers were on standby; no activity commenced due to construction constraints concerning impact hammer overhead clearance. V = Vibratory, I = Impact

on distance and direction from the observers and relating these locations to pile location in a Geographical Information System (ESRI, ArcGIS). Observers recorded probable re-sightings and communicated direction of travel to track individuals and to avoid double-counting sightings of the same animal. Takes are reported as the number of individuals (not sightings) observed within a given zone. The total number of marine mammal takes for the EHW-1 is summarized in Table 3.

A total of nine (9) Level B and five (5) Level A marine mammal takes were observed over the duration of the project (Figure 4, Observed Marine Mammal Takes). All reported takes were related to harbor seal sightings. The majority of takes were recorded within the EHW1 pier/trestle area, with one instance of Level B take occurring during vibratory pile driving located exterior to the perimeter fence. There were no other takes of other species observed.

TABLE 3. REPORTED TAKES

Date	Species Sighting	Level of Take	Pile Location
	Harbor Seal	Level B	
August 14, 2022	Harbor Seal	Level B	North Bent
August 14, 2023	Harbor Seal	Level B	North Bent
	Harbor Seal	Level B	
August 15, 2023	Harbor Seal	Level B	North Bent
	Harbor Seal	Level A	
August 20, 0002	Harbor Seal	Level A	North Don't
August 30, 2023	Harbor Seal	Level A	North Bent
	Harbor Seal	Level B	
Contombou 11, 0002	Harbor Seal	Level A	Courtle Donat
September 11, 2023	Harbor Seal	Level B	South Bent
Contambor 12, 2022	Harbor Seal	Level A	Courth Dont
September 13, 2023	Harbor Seal	Level B	South Bent
September 20, 2023	Harbor Seal	Level B	South Bent

3.2. Marbled Murrelet Observations

To comply with the requirements of the ESA Section 7 consultation for the project, marbled murrelet observers were deployed during impact pile driving activity. There were no marbled murrelet sightings recorded during the project (Appendix B, Raw Bird Sightings Data). Other alcids observed were limited to pigeon guillemots (*Cepphus columba*). All bird species observed and identified during impact driving are present in Table 4 below. No seabird carcasses were observed at any time during post impact pile driving surveys.



TABLE 4. MARINE BIRD OBSERVATION SUMMARY

Date	Species Sighting	Number of Sightings
	Pigeon Guillemot (Cepphus columba)	6
	Red necked Grebe (Podiceps grisegena)	1
08/22/23	Glaucous-winged gull (Larus glaucescens)	7
06/22/23	Great Blue Heron (Ardea Herodias)	3
	Belted King fisher (Alcedo atthis)	1
	Mallard (Anas platyrhynchos)	1
08/28/23	Glaucous-winged gull	2
	Glaucous-winged gull	3
08/30/23	Pigeon Guillemot	1
	Cormorant (Palacrocorax pelagicus)	1
	Glaucous-winged gull	7
09/13/23	Great Blue Heron	3
03/13/23	Belted King fisher	1
	Common Loon (Gavia immer)	1
	Glaucous-winged gull	2
09/14/23	Great blue heron	2
	Pigeon guillemot	1
	Canada geese (Branta canadensis)	2
	Green winged teal (Anas carolinesis)	1
	Mallard (Anas platyrhychos)	1
09/20/23	Glaucous-winged gull	5
	Cormorant	1
	Belted King fisher	1
	Common crow (Corvus brachyrhynchos)	1

Notes:

4.0 SUMMARY

A total of nine (9) Level B and five (5) Level A marine mammal takes were observed over the duration of the project. All reported takes were related to harbor seal sightings. The majority of takes were recorded within the EHW1 pier/trestle area, with one instance of Level B take occurring during vibratory pile driving located exterior to the perimeter fence. There were no other takes of other species observed.



^{1.} Sightings may include individuals and/multiple individuals, see Appendix B for raw sighting data.

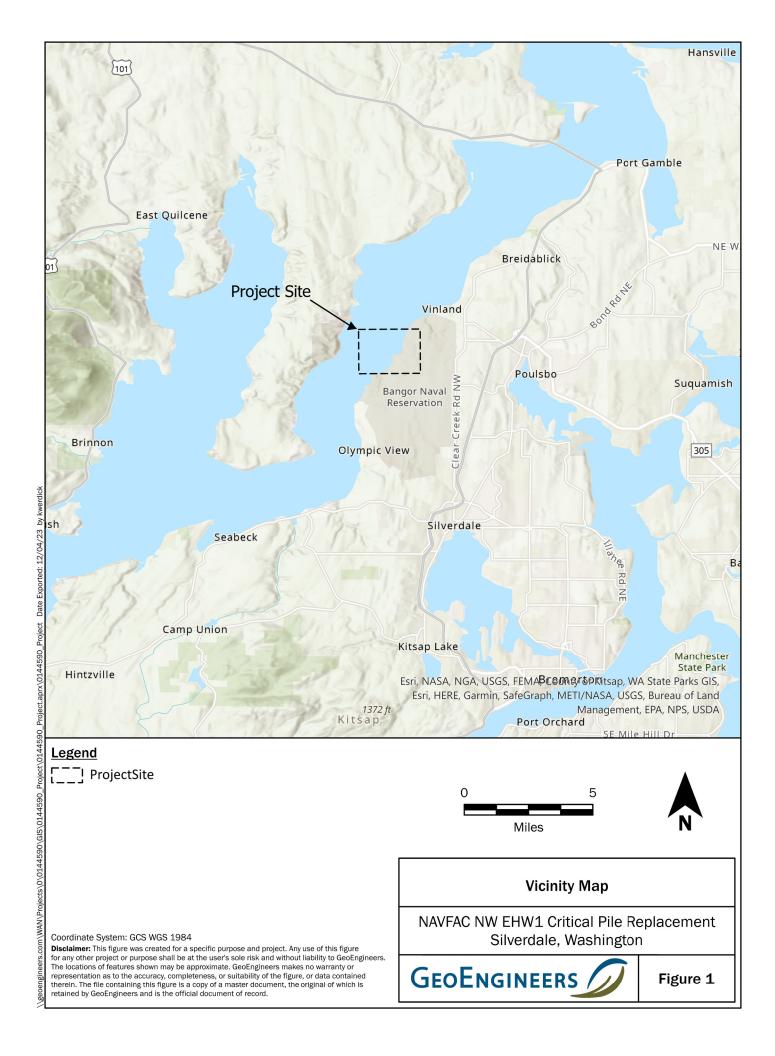
No marbled murrelets were observed during any portion of impact driving. Species diversity was relatively low at the beginning of the project and increased consistently with the change in migratory season. Species of similar likeness included the pigeon guillemot which was observed periodically over the course of the project. Great blue herons occupy a communal roost on the shoreline at EHW1 and one nest was observed on the lightning tower landward of EHW1.

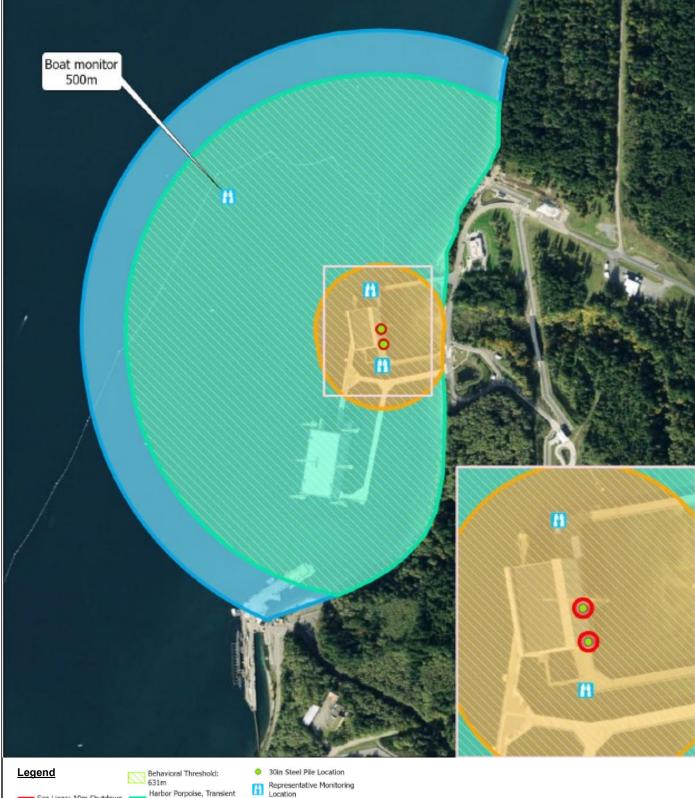
5.0 REFERENCES

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- U.S. Department of the Navy (Navy). 2011. Final Environmental Assessment. Explosives Handing Wharf 1
 Pile Replacement Project Naval Base Kitsap at Bangor Silverdale WA.
- National Oceanographic and Atmospheric Administration (NOAA). 2023. Letter of Authorization; Naval Base Kitsap. Issued July 5, 2023. Office of Protected Species, National Marine Fisheries Service.









Harbor Porpoise, Transient Killer Whale: 631m Shutdown Zone

Shutdown Zone
Humpback: 740m
Shutdown Zone

Not to Scale

Note: Locations and zones dependent on type of equipment used and size of piles. See report for detailed zone descriptions.

Source(s): NAVFAC NW

Harbor Seal: 160m

Shutdown Zone

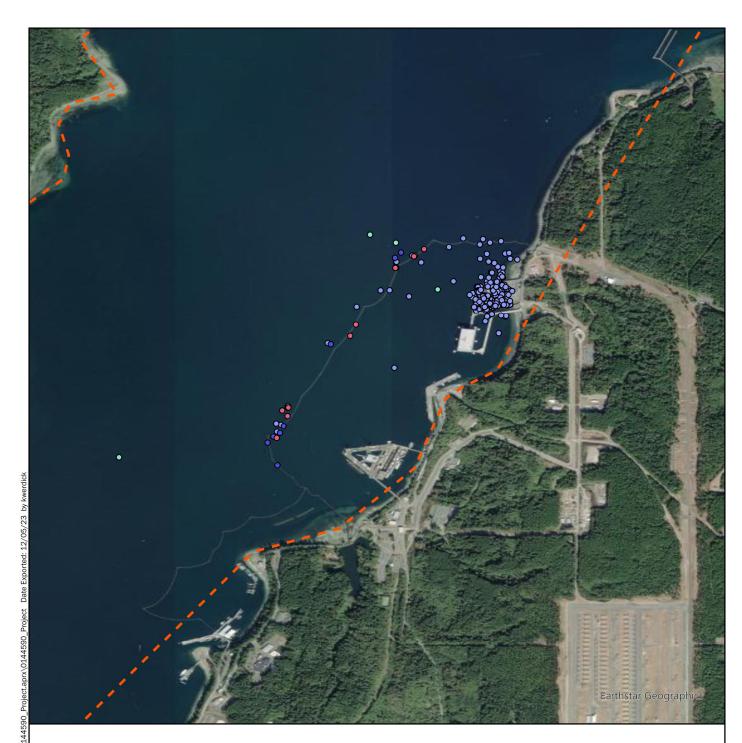
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Example Monitoring Zones and Observer Locations

NAVFAC NW EHW1 Critical Pile Replacement Silverdale, Washington



Figure 2



Legend

Monitoring Zone

Species Observed

- California sea lion
- Steller sea lion
- Harbor porpoise
- Harbor seal

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

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All Observed Marine Mammal Sightings

NAVFAC NW EHW1 Critical Pile Replacement Silverdale, Washington



Figure 3



Legend

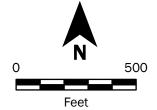
Harbor Seal



Level A Take



Level B Take



Observed Marine Mammal Takes

NAVFAC NW EHW1 Critical Pile Replacement Silverdale, Washington



Figure 4

Source(s): ESRI Imagery.

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet **Disclaimer:** This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warranty or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.



APPENDIX A Raw Mammal Sightings Data

Appendix Table A-1

Raw Mammal Sightings Data NAVFAC NW EHW1 Critical Pile Replacement Silverdale, Washington

Proj Name EHW1PRP EHW1PRP EHW1PRP EHW1PRP	PSOSTATION EHW1BM EHW1BM EHW1NT	SP30Vibe SP30Vibe	None	Clear	None	Beaufort3	mmobsrvd		mmcount sightdir	psodist		t	traveldir	comments	obsrvharass	shutdowncount	narasscount	harasscomment	obsrvdate		NEAR_DIST
EHW1PRP EHW1PRP EHW1PRP	EHW1BM		INDITE				Pv			90	10 Looking	ir	nd		OutZone		Λ				1302.94
EHW1PRP EHW1PRP			None	Clear	None	Beaufort3	Pv	0-50 0-50		70	10 Looking	9	s .		OutZone		0		8/14/2023 8:05 8/14/2023 8:35		38922.50
EHW1PRP		SP30Vibe	None	Clear	None	Beaufort1	Pv	0-50		60	80 Transiting	3 N	N .	Actual time 0750	NAPZone		0		8/14/2023 11:42		262.60
	EHW1ST	SP30Vibe	None	Clear	None	Beaufort1	Pv	0-50		90	55 Transiting,		3		NAPZone		0		8/14/2023 11:43		198.80
=::::::	2.111201	0.001.00	110110	0.00.	110110	Boddioitz		0.00			oo manorang,	5,5.16		Actual time of observation	10.0 20110				0, 1 1, 2020 12: 10	rtorar Bone	100.00
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	Pv	50-70	1 1	60	80 Looking	ir		0758	NAPZone	C	0		8/14/2023 11:50	North Bent	274.37
EHW1PRP	EHW1ST	SP30Vibe	None	Clear	None	Beaufort1	Pv	0-50	1	32	30 Transiting		SE	750	NAPZone	C	0		8/14/2023 11:51		329.66
												,									
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	Pv	50-70	1 1	60	80 Looking	V	W	Actual time of sighting 0808	NAPZone	C	0		8/14/2023 11:54	North Bent	225.58
EHW1PRP	EHW1ST	NAP	None	Clear	None	Beaufort1	Pv	0-50	1 2	70	100 Transiting	g S	S	810	NAPZone	C	0		8/14/2023 11:55	North Bent	242.47
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	Pv	70-90	2 2	10	150 Looking,St	Stationary, Diving V	W	Actual time of sighting 0817	NAPZone	C	0		8/14/2023 11:57	North Bent	282.96
EHW1PRP	EHW1ST	NAP	None	Clear	None	Beaufort1	Pv	50-70	1 2	40	75 Transiting,	g,Looking S	S	845	NAPZone	C	0		8/14/2023 11:58	North Bent	347.33
EHW1PRP	EHW1ST	NAP	None	Clear	None	Beaufort1	Pv	0-50	1	60	50 Looking,Tr	Fransiting N	NE	850	NAPZone	C	0		8/14/2023 12:01	North Bent	246.12
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	Pv	50-70	1 1		110 Looking,Di		nd	Actual sighting 0847	NAPZone	C	0		8/14/2023 12:01	North Bent	240.78
EHW1PRP	EHW1ST	NAP	None	Clear	None	Beaufort1	Pv	50-70	1 3	00	140 Transiting,	g,Diving S	S	858	NAPZone	С	0		8/14/2023 12:04	North Bent	290.70
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	Pv	50-70			100 Looking		nd	Actual sighting time 0853	NAPZone	C	0		8/14/2023 12:05		213.35
EHW1PRP	EHW1ST	NAP	None	Clear	None	Beaufort1	Pv	50-70	1 1	50	100 Transiting	g V	W		NAPZone	C	0		8/14/2023 12:06	North Bent	507.40
														Actual sighting time 0906,							
														transited into ehw1 before							
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	Pv	50-70		60	50 Transiting			pile driving	NAPZone	0	0		8/14/2023 12:07		158.69
EHW1PRP	EHW1ST	NAP	None	Clear	None	Beaufort1	Pv	0-50		00	60 Foraging,T		NW		NAPZone	C	0		8/14/2023 12:08	North Bent	344.85
EHW1PRP	EHW1ST	SP30Vibe	None	Clear	None	Beaufort1	Pv	0-50	1	80	30 Transiting,	g,Looking,Diving N	N	1025	LvIB	C	1		8/14/2023 12:11	North Bent	256.42
														Actual time of sighting 1008,							
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	Pv	50-70			130 Looking	S	3	during low power driving	LvIB	C	1	Outside of harbor seal shutdown zone	8/14/2023 12:11		231.33
EHW1PRP	EHW1ST	NAP	None	Clear	None	Beaufort1	Pv	70-90	1 2		60 Transiting		N		NAPZone	C	0		8/14/2023 12:15		541.81
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	Pv	70-90	1 1	80	130 Resting,Di		nd	Actual sighting time 1013	NAPZone	C	0			1	212.42
EHW1PRP	EHW1ST	NAP	None	Clear	None	Beaufort1	Pv	90-100	1	70	40 Transiting	g S	5	1048	NAPZone NAPZone	C	0		8/14/2023 12:17	North Bent	322.34
FUNADOD	FURNIANIT	00001/11		01	N1	D 6 14		70.00		00	450 0000			Astual times of sighting 4040	NAD7				0 /4 4 /0000 40 40	No die Book	000.77
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	Pv	70-90	1 1	60	150 Stationary	y S	5	Actual time of sighting 1016	NAPZone	C	0	Astrolating of sighting 1005 sighted during full	8/14/2023 12:18	North Bent	236.77
ELIMA DDD	ELIM/ANT	CD20Vib.	Nama	01	Name	Daniel de marte	D.	E0.70	4	00	100 Titi	e Divine	_	1025	5 LvIB			Actual time of sighting 1025, sighted during full	0/44/0002 40:00	North Doot	047.44
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	PV	50-70	1 1	80	160 Transiting,	g,Diving S	5	1025	PILVIB		1	power driving	8/14/2023 12:22	North Bent	247.44
ELIMA DDD	ELIM/ANT	CD20Vib.	Nama	01	Name	Daniel de marte	D.	50-70	4	00	175 Tun un ibiu «	e Divine	_	Actual time of sighting 1008	Luip			Full driving	0/44/0002 40:07	North Door	240.22
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	PV	50-70	1 1	80	175 Transiting,	g,Diving 5		Actual time of sighting 1028 Actual time of sighting 1036			1	Full driving	8/14/2023 12:27	North Bent	348.33
														during post driving							
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	Dv	70-90	1 1	80	110 Transiting	- N		observation	NAPZone		0		8/14/2023 12:32	North Bent	260.17
LIIWIFKF	LIWINI	3F30VIDE	None	Clear	None	beautorti	FV	70-90	1 1	80	110 Hansiding	3	N .	observation	NAFZUITE		0		6/14/2023 12.32	North Bent	200.17
														Actual time of sighting 1046.							
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	Pv	50-70	1 1	90	200 Looking, Di	Diving W		Heading west into ehw	NAPZone		0		8/14/2023 12:34	North Bent	519.83
2.1112.111	22	0.001.00	110110	O.GG.	110110	Boddioitz		00.0			200 2001	6		riodaing weet into onii	10.0 20110		-		0, 1 1, 2020 12.0 1	rtorar Bone	020.00
														Actual time of sighting 1058.							
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	Pv	50-70	1 1	90	160 Transiting,	z.Looking S		Headed south after milling	NAPZone		0		8/14/2023 12:39	North Bent	314.70
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort0	Pv	0-50			130 Diving,Loo		SW		NAPZone	C	0		8/15/2023 6:26		233.52
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort0	Pv	50-70	1 2		100 Transiting,		SE		NAPZone	C	0		8/15/2023 6:42		218.52
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort0	Pv	50-70	1 1		120 Transiting,		W		NAPZone	C	0		8/15/2023 6:52	North Bent	237.37
EHW1PRP	EHW1BM	SP30Vibe	None	Clear	None	Beaufort0	Pv	0-50	1	80	1 Resting	S	ST		OutZone	C	0		8/15/2023 7:01	North Bent	4818.71
EHW1PRP	EHW1ST	SP30Vibe	None	Clear	None	Beaufort0	Pv	0-50	2 1	80	60 Looking	N	N		NAPZone	C	0		8/15/2023 7:08	North Bent	453.91
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort0	Pv	50-70	1 1	90	120 Transiting,	g,Diving N	N		NAPZone	C	0		8/15/2023 7:09	North Bent	301.16
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort0	Pv	90-100	1	10	100 Transiting,	g,Diving N	N		NAPZone	C	0		8/15/2023 7:13	North Bent	617.07
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort0	Pv	50-70	1 1	80	125 Transiting,	g,Diving V	W		LvIB	C	1	Not in shutdown zone. No changes in behavior	8/15/2023 7:23	North Bent	430.48
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort0	Pv	50-70	1 2	00	40 Transiting	g N	N		NAPZone	C	0		8/15/2023 7:59		178.09
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort0	Pv	90-100	1	10	50 Transiting,		NW		NAPZone	C	0		8/15/2023 8:02		449.01
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort0	Pv	50-70		80	45 Transiting,		N		NAPZone	c	0		8/15/2023 8:16		118.27
EHW1PRP	EHW1ST	SP30Vibe	None	Clear	None	Beaufort0	Pv	0-50	1 2	70	20 Transiting	g S	SE	I. b. d.	NAPZone	c	0		8/15/2023 8:23	North Bent	388.57
			L.	1	1	L	L	<u> </u>						In bents underneath west	L]			L	1
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort0	Pv	50-70			120 Resting,Tr			side of wharf	NAPZone	c	0		8/15/2023 8:41		156.79
EHW1PRP	EHW1ST	SP30Vibe	None	Clear	None	Beaufort0	Pv	0-50	-	90	10 Resting, Gr		nd	Small juvenile	NAPZone	C	0		8/15/2023 8:45		239.21
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	Pv	50-70	-	10	30 Transiting,		5	Carallian and a contact	NAPZone	2	0		8/15/2023 8:50		223.36
EHW1PRP	EHW1ST	SP30Vibe	None	Clear	None	Beaufort0	Pv	90-100		90	20 Transiting			Small juvenile resight	NAPZone		0		8/15/2023 8:57		477.91
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	Pv	50-70			130 Diving,Tra			Perhaps mom and juvenile	NAPZone	1	0		8/15/2023 9:02		378.84
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	Pv	50-70			130 Looking,D		nd		NAPZone		0		8/15/2023 9:06		299.95
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	PV	90-100			140 Transiting,		SW		NAPZone	1	0		8/15/2023 9:07		292.92
EHW1PRP	EHW1NT	SP30Vibe	None	Clear	None	Beaufort1	Pv Pv	70-90		90	70 Resting		nd nd		NAPZone NAPZone	1	0		8/15/2023 9:12		416.39
EHW1PRP	EHW1ST	SP30Vibe	None	Clear	None	Beaufort0	Pv	90-100 50-70						Adult and juvenile	NAPZone NAPZone	+	0		8/15/2023 9:12		371.46
EHW1PRP EHW1PRP	EHW1NT EHW1NT	SP30Vibe	None	Clear	None None	Beaufort1	Pv	50-70			130 Transiting, 150 Transiting,	g,Looking,Diving W	v v	Addit and Juvenne	NAPZone NAPZone	1	0		8/15/2023 9:27 8/15/2023 9:34		353.94
		SP30Vibe	None	Clear		Beaufort1 Beaufort0	Dv.			90			nd .	Small juvenile	NAPZone NAPZone		0				360.68
EHW1PRP	EHW1ST	SP30Vibe	None	Ciear	None	Deautorio	Pv	70-90		90	10 Diving	ır		Adult and juvenile. Adult	IVAPZUHE	+	1		8/15/2023 10:03	INOITH BENT	403.94
EHW1PRP	FHW/1NIT	SP30Vibe	None	Clear	None	Requirert1	Dv.	50-70	2 4	90	165 Grooming,	1 Diving		grooming juvenile. Adult	NAPZone		_		8/15/2023 10:10	North Post	200.70
EHW1PRP EHW1PRP	EHW1NT FHW1ST	SP30Vibe SP30Vibe	None	Clear	None	Beaufort1 Beaufort0	Pv	50-70		90 90	70 Resting	אווואוחלי?	nd st	Brooming Juvernie	NAPZone NAPZone		0		8/15/2023 10:10 8/15/2023 10:10		389.72 366.40
EHW1PRP	EHW1ST EHW1NT	SP30Vibe SP30Vibe	None	Clear	None None	Beaufort0 Beaufort1	Pv	50-70			160 Resting)iving	ind		NAPZone NAPZone	-	0		8/15/2023 10:10 8/15/2023 10:15		361.20
EHW1PRP	EHW1NT	SP30Vibe SP30Vibe	None None	Clear	None	Beaufort1	Pv	70-90			140 Resting,Di		nd		NAPZone NAPZone		0		8/15/2023 10:15		361.20
EHW1PRP	EHW1NT	ISP30	None	Clear	Smoke	Beaufort0	Pv	0-50			120 Diving	viving II	N N		OutZone		0		8/15/2023 10:20		371.46
EHW1PRP	EHW1NT	ISP30	None	Clear	Smoke	Beaufort0	Pv	0-50			200 Looking	IN N	N	Mom and baby	OutZone	1	0		8/21/2023 7:54		542.63
EHW1PRP	EHW1BM	NAP	None	Clear	Smoke	Beaufort0	Pv	0-50		80	4 Looking		ST	and baby	NAPZone	1	0		8/21/2023 7:54		4856.32
				5.5ui	oonc	2000010100	1	1- 00	-1 -2		Looking			<u> </u>	20110				5, 21, 2020 0.20	. to at Dollt	7000.02



					I				I taken I in					l		la.	LUEAR RICE
Proj Name	psostation	constructact					mmobsrvd resightings	mmcount	sightdir psod		traveldir	comments obsrvharass	shutdowncount harasscount	harasscomment	obsrvdate	Pile	NEAR_DIST
EHW1PRP	EHW1BM	NAP	None	Clear	Smoke	Beaufort0	Pp 0-50	2	220	400 Transiting	NW	NAPZone	0	0	8/21/2023 8:27	North Bent	7445.73
EHW1PRP	EHW1NT	ISP30	None	Clear	Smoke	Beaufort0	Pv 0-50	1	. 0	100 Looking	N	OutZone	0	0	8/21/2023 8:44	North Bent	789.62
EHW1PRP	EHW1NT	ISP30	None	Scattered	None	Beaufort0	Pv 0-50	1	. 90	50 Transiting	N	NAPZone	0	0	8/22/2023 7:18	North Bent	218.48
EHW1PRP	EHW1NT	ISP30	None	Overcast	None	Beaufort0	Pv 70-90	1	. 90	60 Transiting, Diving	S	NAPZone	0	0	8/22/2023 7:19	North Bent	306.72
EHW1PRP	EHW1NT	ISP30	None	Broken	None	Beaufort0	Pv 90-100	1	. 180	150 Transiting	SE	NAPZone	0	o	8/22/2023 7:39	North Bent	415.20
EHW1PRP	EHW1NT	ISP30	None	Overcast	None	Beaufort0	Pv 50-70	1	. 180	100 Resting, Diving	ind	NAPZone	0	0	8/22/2023 8:00	North Bent	140.50
EHW1PRP	EHW1BM	NAP	None	Scattered	None	Beaufort1	Pv 0-50	1	. 90	422 Diving	W	NAPZone	0	0	8/22/2023 9:55		2479.41
EHW1PRP	EHW1BM	NAP	None	Scattered	None	Beaufort1	Pv 0-50	1	90	399 Diving	ST	NAPZone	0	ol		North Bent	1244.57
EHW1PRP	EHW1ST	ISP30		1_	1		Pv 0-50	1	270		ind	NAPZone NAPZone	0	0	8/22/2023 10:15	North Bent	642.90
			None	Overcast	None	Beaufort1	<u> </u>	1		20 Looking, Diving	IIIu		0	0			
EHW1PRP	EHW1BM	NAP	None	Scattered	None	Beaufort1	Pp 0-50	2	120	505 Diving	W	NAPZone	0	0	8/22/2023 10:36	North Bent	1919.98
												On platform under tower out					
EHW1PRP	EHW1NT	ISP30	None	Overcast	None	Beaufort1	Pv 50-70	2	180	50 Transiting, Stationary	W	of water NAPZone	0	0	8/22/2023 10:45	North Bent	206.65
EHW1PRP	EHW1NT	ISP30	None	Overcast	None	Beaufort0	Pv 70-90	3	180	60 Diving,Looking,Resting	ind	One adult 2 juveniles NAPZone	0	0	8/22/2023 10:48	North Bent	194.80
												1 in water and 3 still on float					
EHW1PRP	EHW1NT	ISP30	None	Broken	None	Beaufort1	Pv 0-50	1	180	80 Transiting	w	under tower NAPZone	o	ol	8/22/2023 11:25	North Bent	236.93
EHW1PRP	EHW1NT	ISP30	None	Broken	None	Beaufort0	Pv 50-70	1	. 180	40 Transiting	SW	NAPZone	0	0	8/22/2023 12:04		199.26
EHW1PRP	EHW1NT	ISP30	None	Broken	None	Beaufort1	Pv 90-100	2	180	100 Transiting	N	2 individuals NAPZone	0	n l	8/22/2023 12:09		226.61
EHW1PRP	EHW1BM	NAP	_			Beaufort1	Pv 0-50	1	120	580 Resting	eT.	NAPZone	0	0	8/22/2023 12:03		1620.26
			None	Isolated	None			1			31		0	0		North Bent	
EHW1PRP	EHW1NT	ISP30	None	Broken	None	Beaufort0	Pv 90-100	3	180	100 Transiting, Looking	ind	Looking for the platform NAPZone	0	0	8/22/2023 12:21	North Bent	360.78
EHW1PRP	EHW1BM	NAP	None	Isolated	None	Beaufort1	Pv 0-50	1	. 90	412 Diving	S	NAPZone	0	0	8/22/2023 12:57	North Bent	1291.33
EHW1PRP	EHW1NT	ISP30	None	Broken	None	Beaufort1	Pv 50-70	1	180	100 Diving,Looking	ind	NAPZone	0	0	8/22/2023 13:19	North Bent	345.39
EHW1PRP	EHW1BM	NAP	None	Isolated	None	Beaufort1	Pv 0-50	1	. 90	25 Indeterminate	W	NAPZone	0	0	8/22/2023 13:59	North Bent	235.77
EHW1PRP	EHW1BM	NAP	None	Isolated	None	Beaufort1	Pv 90-100	1	. 100	15 Diving	W	NAPZone	0	0	8/22/2023 14:09	North Bent	129.15
EHW1PRP	EHW1BM	NAP	None	Isolated	None	Beaufort1	Pv 0-50	1	. 240	317 Resting	ST	NAPZone	0	0	8/22/2023 14:46	North Bent	1143.42
EHW1PRP	EHW1BM	NAP	None	Scattered	None	Beaufort1	Pv 50-70	2	180	85 Looking	ind	NAPZone	0	0	8/22/2023 15:06	North Bent	233.17
EHW1PRP	EHW1ST	NAP	None	Clear	None	Beaufort1	Pv 0-50	1	180	190 Looking	S	NAPZone		ol	8/24/2023 8:26	North Bent	372.47
EHW1PRP	EHW1ST	ISP30	None	Clear	None	Beaufort2	Pv 0-50	1 1	180	220 Looking	S	OutZone		ol	8/24/2023 12:31	North Bent	606.76
				1	1		<u> </u>	+			0			<u> </u>			
EHW1PRP	EHW1NT	NAP	None	Clear	None	Beaufort1	Pv 0-50	1 2	260	120 Transiting	0	NAPZone	0	<u> </u>	8/24/2023 12:56	North Bent	280.10
EHW1PRP	EHW1NT	NAP	None	Clear	Snow	Beaufort1	Pv 90-100	1 1	. 160	130 Looking, Diving, Transiting	5	NAPZone	0	U .	8/24/2023 13:12	North Bent	248.17
EHW1PRP	EHW1NT	NAP	None	Clear	None	Beaufort1	Pv 70-90	1	. 160	150 Looking	ST	NAPZone	0	0	8/24/2023 13:32	North Bent	199.77
EHW1PRP	EHW1ST	NAP	None	Clear	None	Beaufort2	Pv 50-70	1	. 180	120 Looking	S	NAPZone	0	0	8/24/2023 13:34	North Bent	451.01
EHW1PRP	EHW1BM	ISP30	None	Isolated	None	Beaufort4	Pv 0-50	2	75	300 Transiting	S	OutZone	0	0	8/24/2023 13:40	North Bent	1510.02
EHW1PRP	EHW1ST	NAP	None	Clear	None	Beaufort1	Pv 90-100	1	. 160	185 Stationary, Fleeing	S	NAPZone	0	0	8/24/2023 13:55	North Bent	410.68
EHW1PRP	EHW1NT	NAP	None	Clear	None	Beaufort1	Pv 0-50	1	. 30	60 Transiting, Diving, Looking	NE	NAPZone	0	0	8/24/2023 14:32	North Bent	448.90
EHW1PRP	EHW1ST	NAP	None	Clear	None	Beaufort2	Pv 70-90	2	180	170 Resting	ST	Laying on platform NAPZone	0	n l	8/24/2023 14:40		418.63
EHW1PRP	EHW1NT	NAP	None	Clear	None	Beaufort1	Pv 50-70	1	170	70 Diving,Looking	W/	NAPZone	0	ol	8/24/2023 14:58		142.62
LIIWIIII	LIIWII	INAI	IVOITE	Oleai	None	Deadlorts	30-70		. 170	7 0 Diving, Looking	**	Moving towards pile, after	<u> </u>	9	0/24/2023 14:30	North Bent	142.02
												vibing out the pile for proofing - no construction					
EHW1PRP	EHW1ST	ISP30	None	Overcast	Haze	Beaufort1	Pv 0-50	1	15	30 Transiting	NE	activity during sighting NAPZone			8/28/2023 7:59	North Rent	334.03
EHW1PRP	EHW1NT	ISP30	None	Overcast	None	Beaufort0	Pv 0-50	1	140	80 Diving, Transiting	NE	NAPZone	0	0	8/28/2023 8:30		140.65
				1	1			+			INL NA/		0	0			
EHW1PRP	EHW1BM	NAP	None	Overcast	Smoke	Beaufort6	Pp 0-50	4	200	83 Transiting	VV	NAPZone NAPZ	0	0	8/28/2023 8:59	North Bent	813.07
EHW1PRP	EHW1NT	NAP	Rain	Few	None	Beaufort0	Pv 50-70	1	. 270	15 Resting,Looking	ind	Surfaced after impact NAPZone	0	0	8/28/2023 9:30	North Bent	164.81
EHW1PRP	EHW1NT	NAP	Rain	Overcast	None	Beaufort0	Pv 50-70	1	. 120	60 Transiting	N	NAPZone	0	0	8/28/2023 9:39		180.18
EHW1PRP	EHW1NT	ISP30	None	Isolated	None	Beaufort0	Pv 0-50	1	. 180	100 Diving	ind	OutZone	0	0	8/30/2023 7:12	North Bent	339.53
EHW1PRP	EHW1BM	NAP	None	Isolated	None	Beaufort0	Pv 0-50	2	260	210 Looking	N	NAPZone	0	0	8/30/2023 7:15	North Bent	592.14
EHW1PRP	EHW1BM	NAP	None	Isolated	None	Beaufort0	Pv 50-70	1	180	360 Looking	W	NAPZone	0	0	8/30/2023 7:20	North Bent	1100.97
EHW1PRP	EHW1BM	NAP	None	Overcast	None	Beaufort1	Pv 0-50	1	. 5	460 Resting	ST	NAPZone	0	o	8/30/2023 9:09	North Bent	1274.23
EHW1PRP	EHW1BM	NAP	None	Overcast	None	Beaufort0	Pp 0-50	2	320	660 Transiting	N	NAPZone	0	0	8/30/2023 9:54	North Bent	2388.97
EHW1PRP	EHW1BM	NAP	None	Overcast	None	Beaufort0	Ej 0-50	1	. 290	498 Looking	S	NAPZone		n l	8/30/2023 10:21	North Bent	1708.81
EHW1PRP	EHW1NT	ISP30	None		None	Beaufort1	Pv 0-50	1	180	70 Resting	eT.	NAPZone	0	0 Pile driving delayed until zone clear	8/30/2023 10:21		179.66
LIWITHE	LIIVVIIVI	13530	None	Overcast	None	Deauloiti	FV 0-30	1	. 100	70 Resuing	31	INAFZOIIE		Driving delayed for monitoring, individual seemed	6/30/2023 10.33	North Bent	179.00
51 11 14 BBB	=								400	400 - 111		Object to the second of the se			0.00.0000.000.00		
EHW1PRP	EHW1NT	ISP30	None	Overcast	None	Beaufort1	Pv 0-50	1	. 180	120 Transiting	W	Shutdown initiated LvIA		0 unperturbed	8/30/2023 10:49		422.55
EHW1PRP	EHW1NT	ISP30	None	Overcast	None	Beaufort1	Pv 50-70	1	. 270	10 Transiting, Diving	SE	Seemingly unperturbed LvIB	0	0 Diving and not resighted	8/30/2023 11:23		165.27
EHW1PRP	EHW1NT	ISP30	None	Broken	None	Beaufort1	Pv 50-70	1	. 180	300 Transiting	SW	OutZone	0	0	8/30/2023 11:39		738.66
EHW1PRP	EHW1NT	ISP30	None	Overcast	None	Beaufort1	Pv 70-90	1	. 180	100 Transiting	S	LvIA	1	Dove near tower, still there	8/30/2023 11:49		193.34
EHW1PRP	EHW1NT	ISP30	None	Overcast	None	Beaufort1	Pv 90-100	2	180	100 Resting, Transiting	N	LvIA	1	0	8/30/2023 11:52	North Bent	203.50
EHW1PRP	EHW1BM	ISP30	None	Overcast	None	Beaufort0	Pv 50-70	1	. 15	375 Resting	ST	OutZone	0	0	8/30/2023 12:23	North Bent	1246.28
EHW1PRP	EHW1BM	NAP	None	Overcast	None	Beaufort0	Ej 0-50	12	180	1575 Resting	ST	NAPZone	0	0	8/30/2023 13:11	North Bent	5605.41
EHW1PRP	EHW1BM	NAP	None	Overcast	None	Beaufort0	Pv 70-90	1	. 0	399 Resting	ST	NAPZone	0	ol	8/30/2023 14:50		1188.39
EHW1PRP	EHW1NT	ISP30	None	Overcast	None	Beaufort1	Pv 0-50	1	180	30 Transiting	N	Post survey sighting NAPZone	0	ol	8/30/2023 15:04		300.40
EHW1PRP	EHW1NT	ISP30	None	Overcast	None	Beaufort1	Pv 50-70	1	180	150 Transiting	· ·	Post work survey sighting NAPZone		- n	8/30/2023 15:07	North Bent	447.36
EHW1PRP		NAP	_			Beaufort0	Pv 0-50	1 1	. 255	60 Looking,Stationary	ind	NAPZone NAPZone		<u> </u>	9/14/2023 10:04		138.99
	EHW1NT		None	Clear	None	ļ		1 1			ind		0	<u> </u>			
EHW1PRP	EHW1NT	NAP	None	Clear	None	Beaufort1	Pv 0-50	1 1	. 300	20 Diving,Indeterminate	ind	NAPZone	0	υ <u> </u>	9/14/2023 10:19		125.50
EHW1PRP	EHW1NT	NAP	None	Clear	None	Beaufort1	Pv 0-50	1	. 80	20 Diving,Indeterminate	N	NAPZone	0	0	9/14/2023 10:31	North Bent	162.43
EHW1PRP	EHW1NT	NAP	None	Clear	None	Beaufort1	Pv 50-70	2	60	20 Diving,Indeterminate	NE	NAPZone	0	0	9/14/2023 10:41		136.32
EHW1PRP	EHW1NT	NAP	None	Clear	None	Beaufort1	Pv 0-50	1	. 90	40 Diving,Indeterminate	NE	NAPZone	0	0	9/14/2023 10:45	North Bent	300.94
EHW1PRP	EHW1NT	NAP	None	Clear	None	Beaufort0	Pv 0-50	1	. 180	170 Transiting	W	NAPZone	0	0	9/14/2023 10:47	North Bent	479.83
EHW1PRP	EHW1NT	NAP	None	Clear	None	Beaufort1	Pv 0-50	1	. 90	35 Transiting	W	NAPZone	0	ol	9/14/2023 10:54		151.56
EHW1PRP	EHW1BM	NAP	None	Clear	None	Beaufort1	Ac 0-50	1	. 32	60 Diving, Transiting	SW	NAPZone NAPZone		ol	9/14/2023 10:57		1460.23
EHW1PRP	EHW1NT	NAP			1	Beaufort1	Pv 0-50	+	. 20	100 Diving, Indeterminate	ST	NAPZone		ol	9/14/2023 10:37		332.12
		NAP	None	Clear	None			+			OT.		0	<u> </u>			
EHW1PRP	EHW1NT		None	Clear	None	Beaufort0	Pv 90-100	1 1	. 260	70 Looking,Stationary	OI.	NAPZone	0	<u> </u>	9/14/2023 11:11		196.84
EHW1PRP	EHW1NT	NAP	None	Clear	None	Beaufort1	Pv 0-50	1	. 300	10 Resting, Stationary, Diving	NE	NAPZone	0	0	9/14/2023 11:14	North Bent	130.14
1			_	1	1	1		1							1	1	1
	1		I			I						Surfaced directly in front of				I	
			None	Clear	None	Beaufort1	Ac 0-50	1	. 35	10 Transiting, Diving	SW	the boat & dove next to it NAPZone	0	o l	9/14/2023 11:58	North Bent	1475.70
EHW1PRP	EHW1BM	NAP	None											ol .			397.18
		NAP			None	Beaufort0	Pv 70-90	1	160	120 Looking	lind	NAPZone	UI	UI .	9/14/2023 12:01	North Bent	
EHW1PRP	EHW1NT	NAP	None	Clear	None None	Beaufort0 Beaufort1	Pv 70-90 Ac 0-50	1	. 160	120 Looking 75 Resting	ind ST	NAPZone Laving on fence bouy NAPZone	0	n e e e e e e e e e e e e e e e e e e e	9/14/2023 12:01 9/14/2023 12:06		
EHW1PRP EHW1PRP	EHW1NT EHW1BM	NAP NAP	None None	Clear Clear	None	Beaufort1	Ac 0-50	1	. 270	75 Resting	ST	Laying on fence bouy NAPZone	0	0	9/14/2023 12:06	North Bent	2552.87
EHW1PRP EHW1PRP EHW1PRP	EHW1NT EHW1BM EHW1NT	NAP NAP NAP	None None None	Clear Clear Clear	None None	Beaufort1 Beaufort1	Ac 0-50 Pv 70-90	1 1	. 270	75 Resting 25 Diving	ind ST ind	Laying on fence bouy NAPZone NAPZone	0	0	9/14/2023 12:06 9/14/2023 12:10	North Bent North Bent	2552.87 131.79
EHW1PRP EHW1PRP	EHW1NT EHW1BM	NAP NAP	None None	Clear Clear	None	Beaufort1	Ac 0-50	1 1 1 1	. 270	75 Resting	ST	Laying on fence bouy NAPZone	0 0	0	9/14/2023 12:06	North Bent North Bent North Bent	2552.87



Proj Name	psostation	constructactiv precipitatio cloudcov	er visibilityimp wind	mmobsrvd	resightings	mmcount	sightdir	psodist	behavior	traveldir	comments	obsrvharass	shutdowncount	harasscount	harasscomment
Legend															
EHW1PRP	EHW1 Pile Replac	ement Project													
Pv	Harbor seal														
Ac	California sea lion														
Ej	Stellars sea lion														
Pp	Harbor porpoise														
NAP	No Active Pile driv	ing													
SP30Vibe	Steel Pile 30-inch	- Vibratory													
ISP30	Impact Steel Pile -	30-inch													
Broken	Partly Cloudy														
SD	Shutdown														
OutZone	Outside of Shutdo	wn Zone													
resightings	Probability of sight	ting as the same individual vs new anima	I (response options are: 0 to 50	%, 50-70%, 70-90	%, and 90-100%)										
ind	Indeterminate														
	Level B Take														
	Level A Take														
NEAR_DIST	Post-processing ca	alculation in GIS, distances variable and a	approximate												

obsrvdate Pile NEAR_DIST

Appendix Table A-2

Raw Mammal Sightings Data NAVFAC NW EHW1 Critical Pile Replacement Silverdale, Washington

projname	psostation constr	uctactiv	precipitationpso	cloudcover	visibilityimpact	wind	mmobsrvd	resightings	mmcount	sightdir pso	ist behavior	traveldir	comments	obsrvharass	shutdowncount harasscount harassc	omment obsrvda	ite	Pile	NEAR_DIST_M
EHW1PRP	EHW1ST SP30Vi	ibe	None	Isolated	None	Beaufort0	Pv	0-50	1	15	125 Transiting	N	First sighting	NAPZone	0		6/2023 7:16		518.36
EHW1PRP	EHW1ST NAP		None	Scattered	None	Beaufort0	Pv	0-50	1	270	20 Transiting	N		NAPZone	0		6/2023 7:30		135.03
EHW1PRP	EHW1ST SP30Vi		None	Isolated	None	Beaufort0	Pv	0-50	1	25	80 Transiting	N		NAPZone	0		6/2023 7:41		368.08
EHW1PRP EHW1PRP	EHW1ST SP30Vi		None None	Isolated Scattered	None None	Beaufort0 Beaufort0	PV	50-70 50-70	1	30 270	95 Transiting 18 Transiting	N		NAPZone NAPZone	0		6/2023 7:45 6/2023 7:45		455.77 144.45
EHW1PRP	EHW1ST SP30Vi		None	Scattered	None	Beaufort0	Pv	0-50	1	42	80 Transiting	NW		NAPZone	0	-7	6/2023 7:45 6/2023 7:55		306.75
EHW1PRP	EHW1ST NAP		None	Scattered	None	Beaufort1	Pv	50-70	1	270	50 Transiting	N		NAPZone	0		6/2023 8:28		271.25
EHW1PRP	EHW1ST NAP		None	Scattered	None	Beaufort0	Pv	0-50	1	100	48 Diving	SE		NAPZone	0	9/6	6/2023 9:25	South Bent	91.69
EHW1PRP	EHW1ST SP30Vi	ibe	None	Isolated	Smoke	Beaufort0	Pv	0-50	1	45	48 Resting, Transitin	1		NAPZone	0		6/2023 9:27		294.30
EHW1PRP	EHW1ST SP30Vi		None	Scattered	None	Beaufort1	Pv	70-90	1	37	35 Looking, Transitir	SE	Juvenile	NAPZone	0		/2023 10:18		193.54
EHW1PRP EHW1PRP	EHW1ST NAP EHW1ST ISP30		None None	Isolated Overcast	None	Beaufort0 Beaufort0	PV	50-70 0-50	1	270	50 Diving 100 Transiting	N		NAPZone OutZone	0		/2023 11:44 8/2023 7:30		285.30 166.52
EHW1PRP	EHW1ST ISP30		None	Clear	None	Beaufort1	Pv	0-50	1	70	100 Transiting	S		NAPZone	0		/2023 12:10		472.74
EHW1PRP	EHW1BM NAP		None	Clear	None	Beaufort2	Ac	0-50	1	120	1 Transiting	S		NAPZone	0		/2023 12:58		1736.80
EHW1PRP	EHW1ST SP30Vi	ibe	None	Clear	None	Beaufort2	Pv	0-50	1	90	60 Transiting	S		NAPZone	0	9/8/	/2023 14:07	South Bent	334.21
EHW1PRP	EHW1NT SP30Vi	ibe	None	Overcast	None	Beaufort0	Pv	0-50	1	90	150 Transiting	S	Pre drive sight	NAPZone	0		1/2023 6:33		43.83
EHW1PRP	EHW1NT SP30Vi		None	Overcast	None	Beaufort0	Pv	0-50	1	90	40 Looking	ST	Pre survey sight	NAPZone	0		1/2023 6:38		117.58
EHW1PRP EHW1PRP	EHW1ST SP30Vi EHW1BM NAP		None None	Overcast Obscured	None None	Beaufort0 Beaufort1	PV	0-50 0-50	1	170	230 Foraging 1 Transiting	ind er		NAPZone NAPZone	0		1/2023 6:59 1/2023 7:03		562.29 4633.03
EHW1PRP	EHW1BM SP30Ri		None	Obscured	None	Beaufort1	Pv	0-50	1	160	1 Transiting	SF		NAPZone	0		1/2023 7:05		4807.28
									_			-			-	, -,	,		
													Observed a few minutes						1
EHW1PRP	EHW1ST NAP		None	Overcast	None	Beaufort2	Pv	90-100	1	322	30 Looking	ST	after impacting.	NAPZone	0		/2023 12:09		69.59
EHW1PRP	EHW1ST SP30Vi		None	Overcast	None	Beaufort1	Pv	0-50	1	320	30 Diving	W		LvIB	0 1		/2023 12:27		147.59
EHW1PRP EHW1PRP	EHW1ST ISP30 EHW1ST ISP30		None None	Overcast Overcast	None None	Beaufort2 Beaufort2	PV	0-50 70-90	1	90	40 Transiting 40 Looking	N N		LvIA NAPZone	1 1		/2023 12:32 /2023 12:39		5.31 145.13
EHW1PRP	EHW1ST NAP		None	Overcast	None	Beaufort2	Pv	70-90	1	38	160 Looking, Transitir	SE	1	NAPZone NAPZone	0		/2023 12:39 /2023 12:41		470.54
EHW1PRP	EHW1ST NAP		None	Overcast	None	Beaufort1	Pv	90-100	1	352	15 Foraging,Looking			NAPZone	0		/2023 12:55		138.65
EHW1PRP	EHW1ST NAP		None	Overcast	None	Beaufort1	Pv	90-100	1	302	30 Diving,Transiting			NAPZone	0	9/11/	/2023 13:31	South Bent	87.16
EHW1PRP	EHW1ST NAP		None	Broken	Fog	Beaufort0	Pv	0-50	1	10	30 Looking, Foraging			NAPZone	0		3/2023 7:08		92.72
EHW1PRP	EHW1ST NAP		None	Scattered	Fog	Beaufort0	Pv	90-100	1	15	30 Foraging,Transiti	r W		NAPZone	0		3/2023 7:12		145.60
EHW1PRP EHW1PRP	EHW1ST NAP EHW1ST NAP		None None	Scattered Scattered	Fog	Beaufort1 Beaufort0	PV	0-50 90-100	1	180	20 Diving 75 Transiting,Lookir	ind		NAPZone NAPZone	0		3/2023 7:15 3/2023 7:17		466.93 319.86
EHW1PRP	EHW1ST NAP		None	Scattered	Fog	Beaufort0	Pv	90-100	1	25	100 Transiting,Lookir			NAPZone	0		3/2023 7:17		308.09
EHW1PRP	EHW1ST NAP		None	Scattered	Fog	Beaufort1	Pv	50-70	1	60	25 Diving,Indetermi			NAPZone	0		3/2023 7:21		456.77
EHW1PRP	EHW1NT NAP		None	Scattered	Fog	Beaufort1	Pv	50-70	1	20	30 Diving	ind		NAPZone	0	9/13	3/2023 7:31	South Bent	373.14
EHW1PRP	EHW1ST NAP		None	Overcast	Fog	Beaufort0	Ac	0-50	1	18	200 Foraging,Looking	ind	Eating a fish	NAPZone	0		3/2023 7:46		641.32
EHW1PRP	EHW1BM NAP		None	Obscured	Fog	Beaufort0	Pv	0-50	1	40	1 Transiting	SW		NAPZone	0		3/2023 8:07		1682.48
EHW1PRP	EHW1NT NAP		None	Scattered	Fog	Beaufort1	PV	0-50	1	250	40 Diving	SE	Originally swam north	NAPZone	0	9/13	3/2023 9:03	South Bent	672.97
													along shore and then						
EHW1PRP	EHW1ST NAP		None	Scattered	Fog	Beaufort0	Pv	90-100	1	70	50 Transiting,Lookir	S	back south.	NAPZone	О	9/13	3/2023 9:04	South Bent	222.90
EHW1PRP	EHW1NT NAP		None	Isolated	Fog	Beaufort1	Pv	0-50	1	30	30 Diving	N		NAPZone	0		3/2023 9:09		261.58
EHW1PRP	EHW1ST NAP		Hail	Isolated	None	Beaufort0	Pv	90-100	1	52	65 Looking, Transitir	1		NAPZone	0		3/2023 9:13		293.95
EHW1PRP EHW1PRP	EHW1ST NAP EHW1BM ISP30		None	Isolated	None	Beaufort0	Pv	90-100 0-50	1	352 170	200 Transiting,Lookir 14 Transiting	NW		NAPZone OutZone	0		3/2023 9:15 3/2023 9:23		682.77 4256.48
EHW1PRP	EHW1BM NAP		None None	Scattered Scattered	None	Beaufort1 Beaufort1	Pv	0-50	1	280	10 Diving	SF		NAPZone	0		3/2023 9.23 3/2023 9:48		4284.07
EHW1PRP	EHW1BM NAP		None	Scattered	None	Beaufort1	Ac	0-50	1	20	20 Transiting	S		NAPZone	0		3/2023 9:52		4272.09
EHW1PRP	EHW1ST NAP		None	Broken	None	Beaufort0	Pv	70-90	1	348	155 Transiting,Lookir	W		NAPZone	0	9/13/	/2023 10:10	South Bent	485.57
EHW1PRP	EHW1ST NAP		None	Scattered	None	Beaufort0	Pv	70-90	1	178	55 Looking,Transitir	1		NAPZone	0		/2023 10:21		413.74
EHW1PRP	EHW1ST NAP		None	Scattered	None	Beaufort0	Pv	90-100	1	22	50 Looking, Transitir	N .		NAPZone	0		/2023 10:25		264.40
EHW1PRP EHW1PRP	EHW1BM NAP EHW1ST NAP		None None	Scattered Scattered	None None	Beaufort1 Beaufort1	Ac	0-50 0-50	1	120 100	5 Transiting 100 Diving	N ind		NAPZone NAPZone	0		/2023 10:28 /2023 10:35		4406.18 642.39
EHW1PRP	EHW1ST NAP		None	Scattered	None	Beaufort0	Pv	70-90	1	16	215 Looking,Transitir		Just outside zone	NAPZone	0		/2023 10:55		674.53
EHW1PRP	EHW1ST NAP		None	Scattered	None	Beaufort0	Pv	90-100	1	60	30 Looking	ind	In zone	NAPZone	0	-, -,	/2023 10:55		235.00
EHW1PRP	EHW1ST NAP		None	Scattered	None	Beaufort0	Pv	50-70	1	352	100 Diving, Transiting			NAPZone	0	9/13/	/2023 11:08	South Bent	350.95
EHW1PRP	EHW1ST NAP		None	Scattered	None	Beaufort1	Pv	90-100	1	354	250 Looking,Transitir	NE	Same juvenile	NAPZone	0	9/13/	/2023 11:21	South Bent	811.53
EHW1PRP	EHW1ST ISP30		None	Coattered	None	Popufort4	Dv	90-100		240	150 Looking Trees in	14/		LvIB	1	ctive pile driving. 30in impact 9/13/	/2022 44:02	Courth Point	465.30
EHW1PRP EHW1PRP	EHW1ST NAP		None None	Scattered Scattered	None None	Beaufort1 Beaufort1	Pv	70-90	1	348 355	150 Looking, Transitin 45 Transiting, Diving		Swimming west	NAPZone	T During a		<mark>/2023 11:26</mark> /2023 11:34		465.30 176.68
EHW1PRP	EHW1ST NAP		None	Scattered	None	Beaufort1	Pv	90-100	1	180	160 Transiting	S	Moved outside of zone	NAPZone	0			South Bent	458.66
EHW1PRP	EHW1ST NAP		None	Scattered	None	Beaufort2	Pv	90-100	1	344	20 Transiting, Diving	W	Near pile	NAPZone	0		/2023 11:54		58.38
EHW1PRP	EHW1ST NAP		None	Scattered	None	Beaufort1	Pv	0-50	1	10	30 Resting, Diving	NE		NAPZone	0	9/13/	/2023 11:58	South Bent	431.66
EHW1PRP	EHW1ST NAP		None	Scattered	None	Beaufort1	Pv	90-100	1	224	75 Resting, Diving	S		NAPZone	0	9/13/	/2023 12:06	South Bent	337.42
EUW4DDD	FUN/4 OT NAS		None	Class	Nana	Beaufert0	Dv	E0 70		440	AE Looking Tree 111		Likely at least 2 have	NADZon -		242	/2022 40:42	Courth Dane	040.00
EHW1PRP EHW1PRP	EHW1ST NAP		None None	Clear Scattered	None None	Beaufort2 Beaufort2	Pv	50-70 90-100	4	110 24	45 Looking, Transitir 85 Transiting, Looking		been observed before	NAPZone NAPZone	0		/2023 12:10 /2023 12:14		240.69 276.66
EHW1PRP	EHW1ST NAP		None	Isolated	None	Beaufort2	Pv	50-70	1	30	30 Diving,Transiting		 	NAPZone	0		/2023 12:14		214.37
EHW1PRP	EHW1ST NAP		None	Isolated	None	Beaufort2	Pv	50-70	1	80	40 Diving,Transiting			NAPZone	0		/2023 12:28		235.21
	EHW1ST NAP		None	Isolated	None	Beaufort2	Pv	70-90	1	80	60 Transiting	S		NAPZone	0	9/13/	/2023 12:30	South Bent	131.24
EHW1PRP			None	Isolated	None	Beaufort3	Pv	0-50	1	60	15 Transiting	S		OutZone	0	evel A Harassment Zone. 30in	/2023 12:39	South Bent	1867.33
	EHW1BM ISP30				None	Beaufort2	Pv	70-90	1	318	20 Diving,Transiting	N		LvIA			/2023 12:43	South Bent	100.80
EHW1PRP EHW1PRP			None	Scattered		200010112	1.						Same individual	NAPZone	O I Impacuii	, ,			317.43
EHW1PRP EHW1PRP	EHW1BM ISP30 EHW1ST ISP30 EHW1ST NAP		None None	Scattered Scattered		Beaufort1	Pv	90-100	1	12	90 Diving. I ransiting				0	9/13/	/2023 12:47	South Bent	
EHW1PRP EHW1PRP	EHW1ST ISP30				None None	Beaufort1 Beaufort1	Pv Pv	90-100 90-100	1	12	90 Diving,Transiting 65 Diving,Looking	S	Same individual	NAPZone	0		/2023 12:47 /2023 12:50	South Bent South Bent	205.64
EHW1PRP EHW1PRP EHW1PRP EHW1PRP	EHW1ST ISP30 EHW1ST NAP		None	Scattered	None		Pv Pv		1	2		S	Same individual Swimming directly		0				
EHW1PRP EHW1PRP EHW1PRP EHW1PRP EHW1PRP	EHW1ST ISP30 EHW1ST NAP EHW1ST NAP		None None	Scattered Scattered	None None	Beaufort1	Pv Pv	90-100	1	2	65 Diving,Looking	S	Same individual Swimming directly toward pile & dove	NAPZone	0	9/13/	/2023 12:50	South Bent	205.64
EHW1PRP EHW1PRP EHW1PRP EHW1PRP EHW1PRP	EHW1ST ISP30 EHW1ST NAP EHW1ST NAP EHW1ST NAP		None None None	Scattered Scattered Scattered	None None	Beaufort1 Beaufort2	Pv Pv	90-100	1	345	65 Diving,Looking 45 Looking,Transitir	S S SW	Same individual Swimming directly toward pile & dove <10m from it	NAPZone NAPZone	0	9/13/ 9/13/	/2023 12:50 /2023 12:58	South Bent South Bent	205.64 140.35
EHW1PRP EHW1PRP EHW1PRP EHW1PRP EHW1PRP	EHW1ST ISP30 EHW1ST NAP EHW1ST NAP		None None	Scattered Scattered	None None	Beaufort1	Pv Pv Pv	90-100	1 1 1	2	65 Diving,Looking	S SW S	Same individual Swimming directly toward pile & dove	NAPZone	0 0	9/13/ 9/13/ 9/13/ 9/13/	/2023 12:50 /2023 12:58	South Bent South Bent South Bent	205.64



projname	psostation constructactiv	precipitationpso	cloudcover	visibilityimpact	wind	mmobsrvd	resightings	mmcount	sightdir	psodist behavior	traveldir	comments obsrvharass	shutdowncount	harasscount	harasscomment	obsrvdate Pile	NEAR_DIST_M
												Edge of the zone headed					
EHW1PRP	EHW1ST NAP	None	Scattered	None	Beaufort2	Pv	90-100	1	. 210	70 Transiting,Divin		away NAPZone	0			9/13/2023 13:20 South Be	
EHW1PRP	EHW1ST SP30Vibe	None	Overcast	None	Beaufort1	Pv	0-50	1	. 0	110 Transiting	SW	OutZone	0			9/19/2023 6:59 South Be	
EHW1PRP	EHW1NT SP30Vibe	None	Overcast	None	Beaufort1	Pv	70-90	1	. 0	140 Diving	S	OutZone	0			9/19/2023 7:03 South Be	
EHW1PRP	EHW1BM ISP30	None	Overcast	None	Beaufort2	Pv	0-50	1	. 40	5 Transiting	S	OutZone	0			9/19/2023 7:04 South Be	
EHW1PRP	EHW1NT SP30Vibe	None	Overcast	None	Beaufort1	Pv	0-50	45	0	150 Transiting	SE	OutZone	0			9/19/2023 7:15 South Be	
EHW1PRP	EHW1NT SP30Vibe	None	Overcast	None	Beaufort0	Pv	0-50	1	. 45	100 Transiting	S	OutZone	0			9/19/2023 7:17 South Be	
EHW1PRP	EHW1ST SP30Vibe	None	Overcast	None	Beaufort0	Pv	50-70	1	. 0	100 Transiting, Divin	gS	OutZone	0			9/19/2023 7:40 South Be	
EHW1PRP	EHW1BM NAP	None	Overcast	None	Beaufort2	EJ	0-50 0-50	1	. 40	5 Transiting	S .	NAPZone NAPZ	0			9/19/2023 8:19 South Be	
EHW1PRP	EHW1NT SP30Vibe	None	Broken	None	Beaufort0	PV	0-50	1	. 0	10 Diving	ind	Post drive survey NAPZone Moving slowly with head	0			9/19/2023 8:54 South Be	nt 140.6
EHW1PRP	EHW1ST SP30Vibe	None	Overent	None	Beaufort1	D.	0-50	1	15	40 Transiting	CW	out NAPZone				9/20/2023 7:20 South Be	nt 101.2
EHW1PRP	EHW1ST SP30Vibe	None None	Overcast	None	Beaufort1	PV	50-70	1	. 90	80 Transiting	SW	NAPZone NAPZone	0			9/20/2023 7:20 South Be 9/20/2023 7:31 South Be	
EHW1PRP	EHW1ST SP30Vibe	None	Overcast Overcast	None	Beaufort1	PV	50-70	1	. 90	40 Transiting	5	NAPZone NAPZone	0			9/20/2023 7:31 South Be	
EHW1PRP	EHW1ST NAP	None	Overcast	None	Beaufort0	PV	0-50	1	340	2020 Diving,Stationar	S NE	NAPZone NAPZone	0			9/20/2023 7:40 South Be	
EHW1PRP	EHW1ST NAP	None	Overcast	None	Beaufort0	Pv	50-70	2	340	30 Resting, Stational	,	NAPZone	0			9/20/2023 7:50 South Be	
EHW1PRP	EHW151 INAF EHW1BM ISP30	None	Overcast	None	Beaufort1	Fi	0-50	7	180	100 Resting	QT QT	Hauled out on fencing NAPZone	0			9/20/2023 8:35 South Be	
CHWIFKE	EHWIBW ISFSU	None	Overcast	None	Beautorti	E)	0-50	· '	100	100 Resting	31	Hauled out on fence	0			9/ 20/ 2023 8.33 30util Be	1 4790.0
EHW1PRP	EHW1BM ISP30	None	Overcast	None	Beaufort1	Δc	0-50	0	180	100 Resting, Station	arST	floats NAPZone	0			9/20/2023 8:40 South Be	nt 2317.2
EHW1PRP	EHW1ST NAP	None	Scattered	None	Beaufort0	Pv	0-50	1	10	50 Resting, Station		NAPZone	0			9/20/2023 8:41 South Be	
EHW1PRP	EHW1ST SP30Vibe	None	Broken	None	Beaufort2	Pv	0-50	1	270	40 Transiting	S	NAPZone	0			9/20/2023 9:06 South Be	
22	2201	110110	Bronon	110110	Boddiortz		0 00	_	2.0	To Transiting	_	Moderate speed looking				5, 25, 2525 5.55 554.1. Be	
EHW1PRP	EHW1BM ISP30	None	Broken	None	Beaufort2	Ac	0-50	1	. 110	20 Transiting	sw	at boat NAPZone	0			9/20/2023 9:07 South Be	nt 1883.9
EHW1PRP	EHW1ST NAP	None	Scattered	None	Beaufort0	Pv	50-70	1	. 310	15 Diving	NE	NAPZone	0			9/20/2023 9:12 South Be	
						1					1	Delayed for resight out				0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0	
												of SD zone, green light					
EHW1PRP	EHW1ST SP30Vibe	None	Broken	None	Beaufort2	Pv	90-100	1	. 90	40 Transiting	s	to drive OutZone	0			9/20/2023 9:13 South Be	nt 338.3
EHW1PRP	EHW1BM ISP30	None	Broken	None	Beaufort2	Pv	0-50	1	120	300 Looking	ST	Head up looking around LvIB	0	1	Did not appear to be actually harassed	9/20/2023 9:14 South Be	nt 1884.9
EHW1PRP	EHW1BM ISP30	None	Isolated	None	Beaufort2	Ac	70-90	10	185	100 Resting	ST	Hauled out on fence NAPZone	0			9/20/2023 11:39 South Be	nt 4415.1
EHW1PRP	EHW1BM ISP30	None	Isolated	None	Beaufort2	Ej	70-90	6	180	100 Resting	ST	Hauled out on fence NAPZone	0			9/20/2023 11:43 South Be	nt 4934.6
EHW1PRP	EHW1ST SP30Vibe	None	Isolated	None	Beaufort1	Pv	0-50	1	. 90	50 Transiting	S	NAPZone	0			9/20/2023 11:45 South Be	nt 105.6
												Resighted outside SD					
EHW1PRP	EHW1ST ISP30	None	Isolated	None	Beaufort1	Pv	90-100	1	. 45	150 Transiting	N	zone NAPZone	0			9/20/2023 11:47 South Be	
EHW1PRP	EHW1ST ISP30	None	Isolated	None	Beaufort1	Pv	0-50	1	. 45	120 Transiting	S	NAPZone	0			9/20/2023 12:25 South Be	
EHW1PRP	EHW1ST ISP30	None	Isolated	None	Beaufort1	Pv	50-70	1	. 0	60 Diving	S	NAPZone	0			9/20/2023 12:28 South Be	nt 211.2
												Looking at boat with					
												head high above water,					
EHW1PRP	EHW1BM ISP30	None	Isolated	None	Beaufort3	Ej	0-50	1	. 170	10 Looking	ST	adult male NAPZone	0			9/20/2023 12:40 South Be	
EHW1PRP	EHW1ST ISP30	None	Isolated	None	Beaufort1	Pv	0-50	1	. 45	20 Diving	ind	NAPZone	0			9/20/2023 12:47 South Be	nt 231.7
												Surfaced, then swam					
												underwater close to					
EHW1PRP	EHW1BM ISP30	None	Isolated	None	Beaufort3	Ac	0-50	1	. 30	12 Transiting	SW	boat, then under fence NAPZone	0			9/20/2023 12:49 South Be	
EHW1PRP	EHW1ST NAP	None	Isolated	None	Beaufort1	Pv	0-50	1	. 80	20 Diving,Resting	W	NAPZone	0			9/20/2023 12:51 South Be	nt 184.2
												Stopped to look at					
												people in boat, would					
												still be in level b zone					
	L l	L.	L	l.,		1.	L			_L	L	when impacting					
EHW1PRP	EHW1BM ISP30	None	Isolated	None	Beaufort3	Ac	50-70	1	. 30	5 Transiting	SW	resumed NAPZone	0			9/20/2023 13:02 South Be	
EHW1PRP	EHW1BM ISP30	None	Isolated	None	Beaufort2	PV	0-50	1	190	40 Resting	SI	Hauled out on fence NAPZone	0			9/20/2023 13:49 South Be	
EHW1PRP	EHW1BM ISP30	None	Isolated	None	Beaufort3	AC	50-70	10	190	50 Resting	SI	Haujed out on fence NAPZone	0			9/20/2023 13:54 South Be	
EHW1PRP	EHW1BM ISP30	None	Isolated	None	Beaufort3	Ej	70-90	2	170	150 Resting	ST	Hauled out on fence NAPZone	0			9/20/2023 13:58 South Be	nt 5109.6

Legend

EHW1PRP EHW1 Pile Replacement Project

 Pv
 Harbor seal

 Ac
 California sea lion

 Ej
 Stellars sea lion

 Pp
 Harbor porpoise

 NAP
 No Active Pile driving

 SP30Vibe
 Steel Pile 30-inch - Vibratory

 ISP30
 Impact Steel Pile - 30-inch

 Broken
 Partly Cloudy

SD Shutdown
OutZone Outside of Shutdown Zone

resightings Probability of sighting as the same individual vs new animal (response options are: 0 to 50%, 50-70%, 70-90%, and 90-100%)

ind Indeterminate
Level B Take
Level A Take

NEAR_DIST Post-processing calculation in GIS, distances variable and approximate



Appendix Table A-3

Raw Mammal Sightings Data NAVFAC NW EHW1 Critical Pile Replacement Silverdale, Washington

Project Name	PS0 Station	constructactiv	precipitationpso	cloudcover	visibilityimpact	wind	mmobsrvo	resightings	mmcount	sightdir	psodist	behavior	traveldir	comments obsrvhara	s shutdowncount	harasscount	obsrvdate Pile	NEAR_DIST_M
EHW1PRP	EHW1BM	SP12vibe	Rain	Overcast	Rain	Beaufort4	Ej	0-50	1	4	0	7 Looking	N	OutZone		0 (9/26/2023 8:53 Float	1715.4
EHW1PRP	EHW1NT	SP12vibe	None	Broken	None	Beaufort1	Pv	90-100	1	4	5	240 Diving, Transiting	SW	NAPZone		0 (9/26/2023 7:28 Float	772.2
EHW1PRP	EHW1NT	SP12vibe	None	Broken	None	Beaufort1	Pv	90-100	1		0	200 Looking	S	NAPZone		0 (9/26/2023 7:37 Float	532
EHW1PRP	EHW1NT	SP12vibe	None	Broken	None	Beaufort1	Pv	90-100	1	3	5	50 Looking, Transiting	S	NAPZone		0 (9/26/2023 8:01 Float	325.5
EHW1PRP	EHW1NT	SP12vibe	None	Broken	None	Beaufort1	Pv	50-70	1	3	0	220 Resting,Looking	ind	NAPZone		0 (9/26/2023 8:02 Float	811.3
EHW1PRP	EHW1NT	SP12vibe	None	Broken	None	Beaufort1	Pv	0-50	2		0	50 Transiting	N	NAPZone		0 (9/26/2023 8:09 Float	268.2
EHW1PRP	EHW1NT	SP12vibe	None	Broken	None	Beaufort1	Pv	50-70	1	3	0	60 Looking	SW	OutZone		0 (9/26/2023 8:23 Float	255.1
EHW1PRP	EHW1NT	SP12vibe	None	Broken	None	Beaufort1	Pv	50-70	1	3	0	120 Looking	S	OutZone		0 (9/26/2023 8:50 Float	440.4
EHW1PRP	EHW1NT	SP12vibe	Rain	Overcast	Haze	Beaufort1	Pv	50-70	1	4	5	200 Looking	ind	OutZone		0 (9/26/2023 10:28 Float	687.2
EHW1PRP	EHW1NT	SP12vibe	Rain	Overcast	None	Beaufort1	Pv	0-50	1		0	60 Transiting	W	NAPZone		0 (9/26/2023 15:22 Float	500.3
EHW1PRP	EHW1NT	SP12vibe	Rain	Overcast	Snow	Beaufort1	Pv	50-70	1	3	0	70 Transiting	NE	NAPZone		0 (9/26/2023 15:25 Float	737.4
EHW1PRP	EHW1NT	NAP	None	Broken	None	Beaufort1	Pv	0-50	1	30	0	50 Indeterminate, Transiting, Diving	SW	NAPZone		0 (9/26/2023 13:38 Float	100.2
EHW1PRP	EHW1NT	SP12vibe	None	Broken	None	Beaufort1	Pv	0-50	1		0	250 Diving	ind	Pre drive survey sighting NAPZone		0 (9/26/2023 7:19 Float	725

Legend EHW1PRP Legend

EHW1 Pile Replacement Project

Pv Habor seal Ej Stellars sea lion

PRP Pile Replacement Project

NT North Trestle BM **Boat Monitor**

NAP No Active Pile driving SP12-vibe Steel Pile 12-inch; Vibratory

Broken Partly Cloudy ind Indeterminate SD Shutdown

OutZone Outside of Shutdown Zone

resightings Probability of sighting as the same individual vs new animal (response options are: 0 to 50%, 50-70%, 70-90%, and 90-100%)

APPENDIX BRaw Bird Sightings Data

APPENDIX B. BIRD OBSERVATION DATA

				Wind		
			# of	Speed	Observed	
Date	Time	Species	Birds	(Beaufort)	Behavior	Comments
08/22/23	0815	Pigeon Guillemot	3	1	Resting	
		Red necked Grebe (Podiceps grisegena)	2	1	Resting, Transiting	
		Glaucous- winged gull (Larus glaucescens)	8	1	Resting, Transiting	
	915	Pigeon Guillemot	3	1	Resting	
	930	Great Blue Heron	2	1	Standing	
		Glaucous- winged gull	1	1	Swimming	Eating barnacles/mollusks on pile
	1015	Glaucous- winged gull	18	1	Resting, Feeding/Diving, Transiting	
	1140	Mallard (Anas platyrhynchos)	7	1	Swimming	Nearshore
	1215	Pigeon Guillemot	2	1	Resting, Transiting	
		Glaucous- winged gull	21	1	Resting, Preening	
		Belted King fisher (Alcedo atthis)	1	1	Resting, Feeding/Diving	
		Great Blue Heron (Ardea Herodias)	3	1	Nesting, Transiting	
		Pigeon Guillemot	2	1	Resting	North of northern trestle walkway
	1400	Pigeon Guillemot	1	2	Diving	
		Glaucous- winged gull	4	2	Feeding	
	1415	Pigeon Guillemot	2	1	Resting	North of northern trestle walkway



			# of	Wind Speed	Observed	
Date	Time	Species	Birds	(Beaufort)	Behavior	Comments
08/22/2023		Glaucous- winged gull	14	1	Resting, transiting	
		Great Blue Heron	2	1	Nesting	
	1615	Glaucous- winged gull	17	1	Resting, preening	Many on beach
08/28/23	930	Glaucous- winged gull	1	1	Resting	Shoreline
00/20/23	1030	Glaucous- winged gull	1	1	Resting	Possible Resight
	830	Glaucous- winged gull	2	0	Resting	Under Trestle
	1000	Glaucous- winged gull	1	1	Swimming	Under Trestle
08/30/23	1130	Glaucous- winged gull	1	1	Swimming	Under Trestle
	1230	Pigeon Guillemot	1	1	Swimming	North of Trestle
	1520	Cormorant (Phalacrocorax pelagicus)			Foraging	Landward of trestle in water
	808	Glaucous- winged gull	11		Resting	Two on beach, one on tower, rest on EHW1 structure
	1008	Glaucous- winged gull	5		Resting, foraging	Shoreline
	1108	Glaucous- winged gull	3		Resting	
09/13/2023		Great blue heron	1		Transiting	
		Belted King Fisher	1		Transiting	
	1208	Glaucous- winged gull	5		Resting	Two on shoreline, two on tower, one on north trestle
	1241	Glaucous- winged gull	1		Transiting	Transiting away from pile
	1308	Glaucous winged gull	5			North trestle
		Great blue heron	1		Nesting	tower



Date	Time	Species	# of Birds	Wind Speed (Beaufort)	Observed Behavior	Comments
09/13/2023	1408	Common loon (Gavia immer)	1		Transiting North	
		Glaucous- winged gull	7			Six on north trestle, one on shore
		Great blue heron	1		Resting, nesting	Nesting in tower
09/14/2023	1110	Glaucous- winged gull	5		Resting, foraging	Two on EHW1 structure, three on beach resting
		Great blue heron	1		Nesting	On tower
	1135	Pigeon Guillemot	Multiple			Resting in building shadow, resighted north of the training platform north of EHW1 and observed clear of affected zones at 1224
	1310	Glaucous- winged gull	6			Post-work shoreline survey, five on beach, one on
		Great blue heron	1		Nesting	Nesting on tower
09/20/2023	0840	Canada geese (Branta canadensis)	22		Resting, foraging	Foraging on beach
		Green winged teal (Anas carolinesis)	7		Resting	Resting on beach
		Mallard (Anas platyrhynchos)	2		Resting	
		Glaucous- winged gull	7		Resting	North trestle, two resting in water close by
		Pelagic cormorant	1		Foraging	North of north trestle
	1040	Canada geese	27		Resting	Resting on beach
		Glaucous- winged gull	4		Resting	Three on tower, one on beach; pause in driving for splicing work – resume monitoring at 1340



Date	Time	Species	# of Birds	Wind Speed (Beaufort)	Observed Behavior	Comments
09/20/2023	1340	Glaucous- winged gull	3		Resting	Resting on beach – wind is high
	1440	Glaucous- winged gull	4		Resting	One on tower, two on North Trestle, one on beach
	1445	Belted king fisher	1		Transiting	Post work survey sighting
		Glaucous- winged gull	2		Resting	Post work survey sighting
		Common crow (Corvus brachyrhynchos)	1			Post work survey sighting



