



Marine Mammal Monitoring Plan

**Phillips 66 Ferndale Refinery Dock Maintenance Project
Ferndale, Washington**

Prepared By
Hamer Environmental
1023 S 3rd Street
Mt. Vernon, Washington
98273

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Statement of Qualifications

Hamer Environmental (Hamer) was established in 1992 in Mount Vernon, Washington. As a company, Hamer assists our clients in resolving natural resource issues using science and cooperative efforts. By working in close collaboration with our clients, we can provide superior services in a timely and cost-effective manner and maintain excellent professional relationships through all phases of the project.

Hamer staff have acquired years of experience in field research, baseline studies, natural resource surveys and conservation planning. We have completed numerous cooperative field projects on threatened and endangered species throughout Oregon, Washington, and California. Our expertise in the management of fish and wildlife, wildlife research, vegetation and habitat analyses, and natural resource management and habitat conservation planning has provided unique and valuable services to a broad array of clients throughout the western states. Over the years, the staff at Hamer has developed excellent working relationships with state, federal, tribal and industry biologists and land managers.

Acronyms

Envoy -	Envoy Environmental
ESA -	Endangered Species Act
Hamer -	Hamer Environmental
IHA -	Incidental Harassment Authorization
MMMP –	Marine Mammal Monitoring Plan
MMPA -	Marine Mammal Protection Act
NMFS -	National Marine Fisheries Service
NOAA –	National Oceanic and Atmospheric Administration
Phillips -	Phillips 66
PSO -	Protected Species Observer
SRKW -	Southern Resident Killer Whale
WMMSN -	Whatcom Marine Mammal Stranding Network

Chapter 1. Project Description

1.1 Introduction

This Marine Mammal Monitoring Plan (MMMP) has been prepared for Phillips 66 (Phillips), the National Oceanic and Atmospheric Administration (NOAA), and the National Marine Fisheries Service (NMFS), in conjunction with the draft Incidental Harassment Authorization (IHA) application for the project. The current Phillips 66 Ferndale Refinery Terminal and Dock allows for the loading and unloading of crude oil and petroleum. In order to maintain the safe working conditions of the terminal, the existing timber causeway needs structural replacement. This work includes replacing the existing timber deck with concrete and replacing the existing 677 12-in steel and wood piles with 196 new 20-in steel piles. This MMMP and the draft IHA address the environmental impacts associated with the noise generated from vibratory pile driving, cutting, and removal.

The work is scheduled to take place during the summer and fall, 2024, after the Washington Department of Fish and Wildlife's in-water work window opens, with an expectation of 35 workdays to complete the pile driving work and a total of 66 days of in-water work (includes time needed to cut piles during the pile removal process). At the time of this MMMP's submission, the anticipated started date for pile driving is August 6th. This plan contains recommendations for avoidance and minimization measures for marine mammals within the project action area and compliance with the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA).

1.2 Project Location

The Phillips 66 Ferndale Refinery Terminal and Dock is located in Ferndale, Washington, on the southeastern shore of the Strait of Georgia (Figure 1).

Phillips 66 Ferndale Refinery Dock Maintenance Marine Mammal Monitoring Plan



Figure 1. Project Vicinity Map (Phillips 2024).

1.3 Regulatory Requirements

1.3.1 Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) of 1972 (16 U.S.C. 1361), prohibits the taking of any marine mammals, except as permitted by regulation. Take is defined as the harassment, capture, collection, or killing of any marine mammals. According to NOAA, the MMPA was implemented to prevent marine mammals from declining beyond the point where they ceased to be significant functions of the ecosystems of which they are a part. The MMPA offers protection to various species of mammals found within waters of the United States, including but not limited to cetaceans (dolphins, porpoises, and whales), pinnipeds (seals and sea lions), and sea otters.

1.3.2 Endangered Species Act

The Endangered Species Act (ESA) of 1973 (16 USC 1531-1543), administered by the USFWS and the National Marine Fisheries Services (NMFS), defines certain species as threatened or endangered and provides protections for those species, as well as 'candidate' species that may be listed in the future. Taking a species protected by the ESA is a violation. The ESA also protects the habitat of listed species, requiring biological assessment if a listed species is suspected to be present in a project area. Following the assessment, if it is determined that a listed species would be adversely impacted, modifications to the project may be required.

Chapter 2. Policy Compliance and Key Resources

2.1 Contractor Information

The implementation of the MMMP will involve several sectors within Phillips:

2.1.1 Phillips 66

Phillips is dedicated to the implementation of an MMMP to minimize impacts on marine mammals during in-water construction and to complying with all applicable laws and regulations. Implementation of the MMMP is the sole responsibility of Phillips employees and their subcontractors with the support of federal agencies and external specialists who may provide technical assistance.

The listed key personnel for Phillips will serve as external coordination. Construction crew members and subcontractors are responsible for reporting all marine mammal injury, mortality, death. Supervisors will ensure that any reports are directed to the MMMP lead biologist and the appropriate actions area taken to prevent further incidents. For this project, the project engineer is listed below:

Gordon Bullivant
Senior Project Engineer
360-306-7785
Gordon.Bullivant@p66.com

2.1.2 Envoy Environmental

Envoy Environmental (Envoy) is providing permitting support for this project, on behalf of Phillips. For this project, the permitting specialist is listed below:

Chase Carter
Environmental Engineer
360-303-3601

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chase@envoyec.com

2.1.3 Hamer Environmental

Hamer Environmental (Hamer) is providing qualified Protected Species Observers (PSO) for this project. The PSO's will work directly with Phillips to implement this MMMP and ensure its compliance with all applicable laws and regulations. For this project, Hamer's project coordinator is listed below:

Matt Reed
Senior Wildlife Biologist and Project Coordinator
360-941-6315
matt@hamerenvironmental.com

2.1.4 Regulatory Contacts

NOAA is responsible for administering and enforcing the MMPA and ESA. NOAA is the main agency point of contact for the MMMP and can also provide technical assistance on marine mammal issues. NOAA must be contacted if any marine mammal injuries or fatalities occur, or if take limits are being approached, as additional consultation may be needed. For this project, the Marine Resources Management Specialist is listed below:

Jennifer Gatzke
Marine Resources Management Specialist
XXX-XXX-XXXX
jennifer.gatzke@noaa.gov

In case of marine mammal strandings, the Whatcom Marine Mammal Stranding Network (WMMSN) is ready to assist. WMMSN has been granted authority by NOAA to respond to reports of stranded, distressed, or deceased marine mammals. Their contact information is below:

Whatcom Marine Mammal Stranding Network
360-966-8845

2.1.5 PSO Qualifications

Marine mammal monitoring may only be performed by qualified PSO's. Qualified PSO's either have previous marine mammal monitoring experience in Washington's coastal waters or they have been trained to identify the various marine mammal species that are likely to occur during project activities. All project PSO's will be submitted to NOAA for approval prior to arriving onsite. Hamer will ensure that all project PSO's are familiar with the MMMP and its requirements.

In addition to the PSO qualifications listed above, all project PSO's must meet the following minimum requirements:

- Degree in biological sciences or related field;
- Visual acuity in both eyes;
- Previous experience and/or training in the field identification of marine mammals of Western Washington;
- Previous experience conducting biological surveys;
- Ability to accurately record daily observations and communicate with pile driving personnel.

Chapter 3. Marine Mammal Monitoring

3.1 Monitoring Plan

This MMMP is designed to reduce and avoid impacts to marine mammals. This project-specific monitoring plan outlines the steps taken to implement these mitigation measures. Based on the IHA drafted for this project, visual monitoring will be initiated for all in-water work activities, including vibratory pile driving, removal, and underwater chainsaw cutting of timber piles. Visual monitoring will be conducted by qualified Protected Species Observers (PSO). The PSO's will monitor the Level A and B Exclusion and Harassment zones proposed by the IHA.

PSO's will be equipped with the following equipment to conduct monitoring activities:

- Binoculars and spotting scopes;
- GPS
- Rangefinders;
- Compass;
- Data form/log book for data recording;
- 2-way radio and/or cellphone for communication;
- Appropriate safety gear for their monitoring location, such as hard hat, safety glasses, boots, and lifejacket

PSO's shall have no other project-specific duties other than monitoring the Level A and Level B zones for marine mammals during in-water activities.

3.1.1 Vibratory Pile Driving and Removal

For all vibratory and removal activities, the IHA has established project-specific Level A and Level B monitoring zones. Level A is the zone of exclusion, which is the zone in which injury may occur to marine mammals during vibratory pile driving and removal activities. Level B is the harassment zone, which is the zone in which marine mammals may receive behavioral impairments during vibratory pile driving and removal activities.

For ESA-listed marine mammals, including Humpback Whales and Southern Resident Killer Whales (SRKW), a 1,585 meter exclusion zone will be implemented for all pile driving and removal activities (Figure 2). This zone encompasses both the Level A (exclusion) and Level B (harassment) zones. Due to the difficulty of accurately distinguishing SRKW from other killer whale species, any killer whales observed during monitoring will be considered to be SRKW. If any humpback whales or killer whales are observed approaching or entering the exclusion zone, all in-water pile driving activities will cease.

VIBRATORY PILE DRIVING EXCLUSION ZONE

SHUTDOWN ZONE FOR ESA LISTED MARINE MAMMALS AND KILLER WHALES



Pile driving will stop for all ESA listed marine mammals and killer whales in this zone. ESA listed species include Southern Resident Killer Whales and Humpback Whales.

Shutdown Zone: 1585 m to 120 dB

Figure 2. Level A Exclusion Zone for ESA-Listed Marine Mammals During Vibratory Pile Driving and Removal (Phillips 2024).

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For non-listed marine mammals, the IHA has proposed the following Level A and B exclusion and harassment zones (Table 1). For this project, this includes harbor seals, harbor porpoise, and sea lions. The Level A exclusion zone is 7.5m and the Level B harassment zone is 1585m from pile driving/removal activities (Figures 3 and 4). If any non-listed marine mammals are observed approaching or entering the Level A exclusion zone, all in-water pile driving activities will cease. If any non-listed marine mammals are observed within the Level B harassment zone, these individuals will be monitored and pile driving/removal activities may continue, as long as “Take” is available. The proposed “Take” for this project can be found in the draft IHA (Phillips 2024).

Table 1. Level A Exclusion and Level B Harassment Zones for Non-Listed ESA Species (Phillips 2024).

Project Activity	Species	Level B Harassment Zone	Level A Exclusion Zone
Vibratory Pile Driving	Harbor Seal	1585 m	7.5 m
	Sea lions	1585 m	7.5 m
	Harbor Porpoise	1585 m	7.5 m

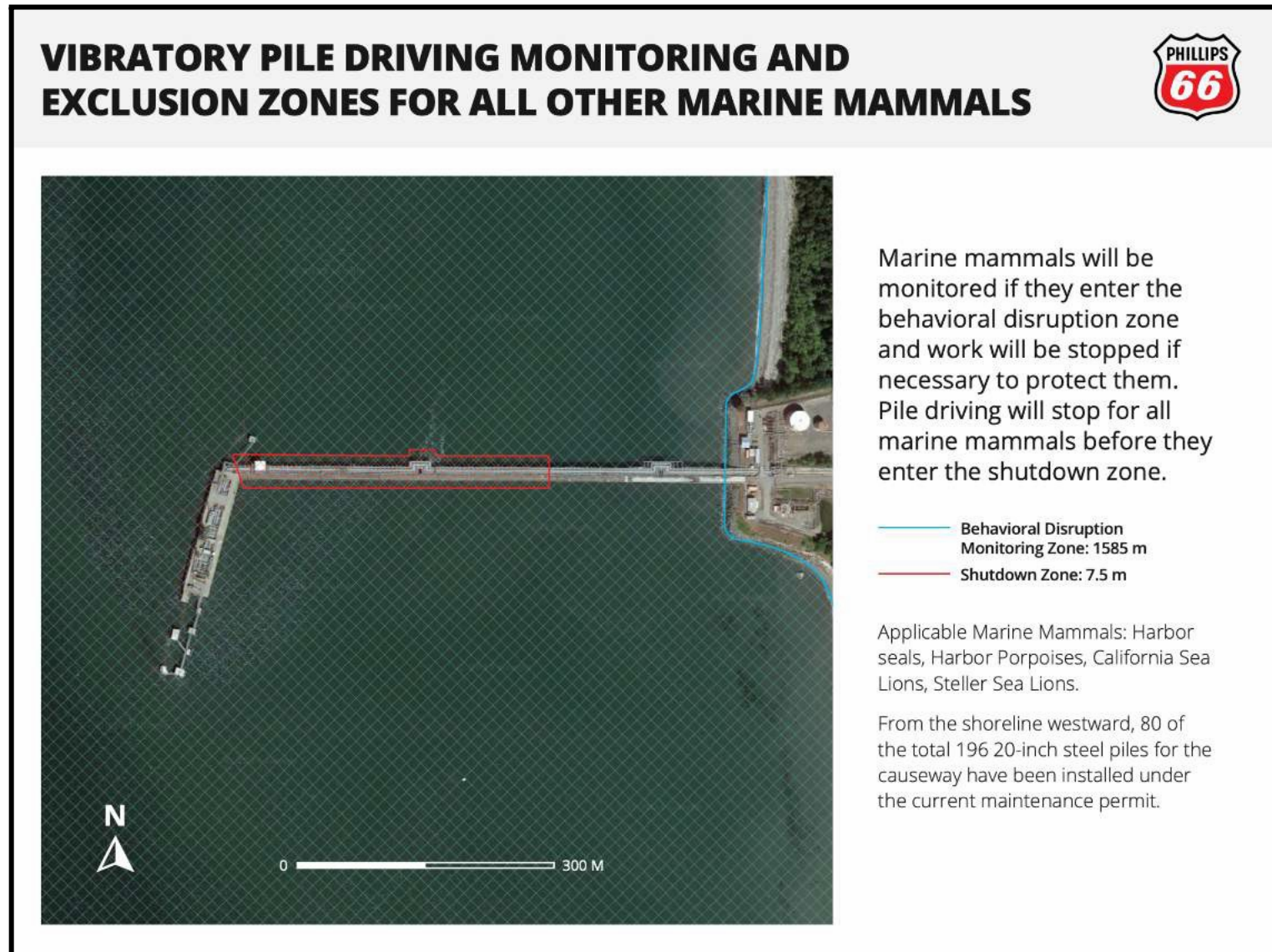


Figure 3. Level A Exclusion Zone for Non-Listed Marine Mammals During Vibratory Pile Driving and Removal (Phillips 2024).



VIBRATORY PILE DRIVING MONITORING AND EXCLUSION ZONES FOR ALL OTHER MARINE MAMMALS



Marine mammals will be monitored if they enter the behavioral disruption zone and work will be stopped if necessary to protect them. Pile driving will stop for all marine mammals before they enter the shutdown zone.

- Behavioral Disruption Monitoring Zone: 1585 m
- Shutdown Zone: 7.5 m

Applicable Marine Mammals: Harbor seals, Harbor Porpoises, California Sea Lions, Steller Sea Lions.

From the shoreline westward, 80 of the total 196 20-inch steel piles for the causeway have been installed under the current maintenance permit.

Figure 4. Level B Harassment Zone for Non-Listed Marine Mammals During Vibratory Pile Driving and Removal (Phillips 2024).

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Prior to the start of each monitoring day, the lead PSO will check the Orca Network for an recent marine mammal activities in the area. Daily onsite monitoring will start 30 minutes prior to initiation of vibratory pile driving and removal activities, to ensure that no marine mammals are within the exclusion zones. If no marine mammals are present at the end of the 30 minutes, vibratory pile driving and removal activities may begin. If a marine mammal enters or approaches the exclusion zone, vibratory pile driving and removal activities may not begin until the individual/s are either visually seen leaving the exclusion zone or 15 minutes have passed since that individual/s was last observed.

Once the 30 minutes of pre-construction monitoring has been completed, vibratory pile driving and removal activities may begin. If a marine mammal enters or approaches the exclusion zone, vibratory pile driving and removal activities will be stopped until the individual/s are either visually seen leaving the exclusion zone or 15 minutes have passed since that individual/s was last observed. If a marine mammal enters or approaches the harassment zone, vibratory pile driving and removal activities may continue and the behavior of the individual/s will be monitored and documented. If sea-state or weather conditions restrict the PSO's ability to see the entirety of the exclusion zones, work will be stopped until conditions change and the full exclusion zone is visible. If sea-state or weather conditions become unsafe, work will be stopped until conditions change.

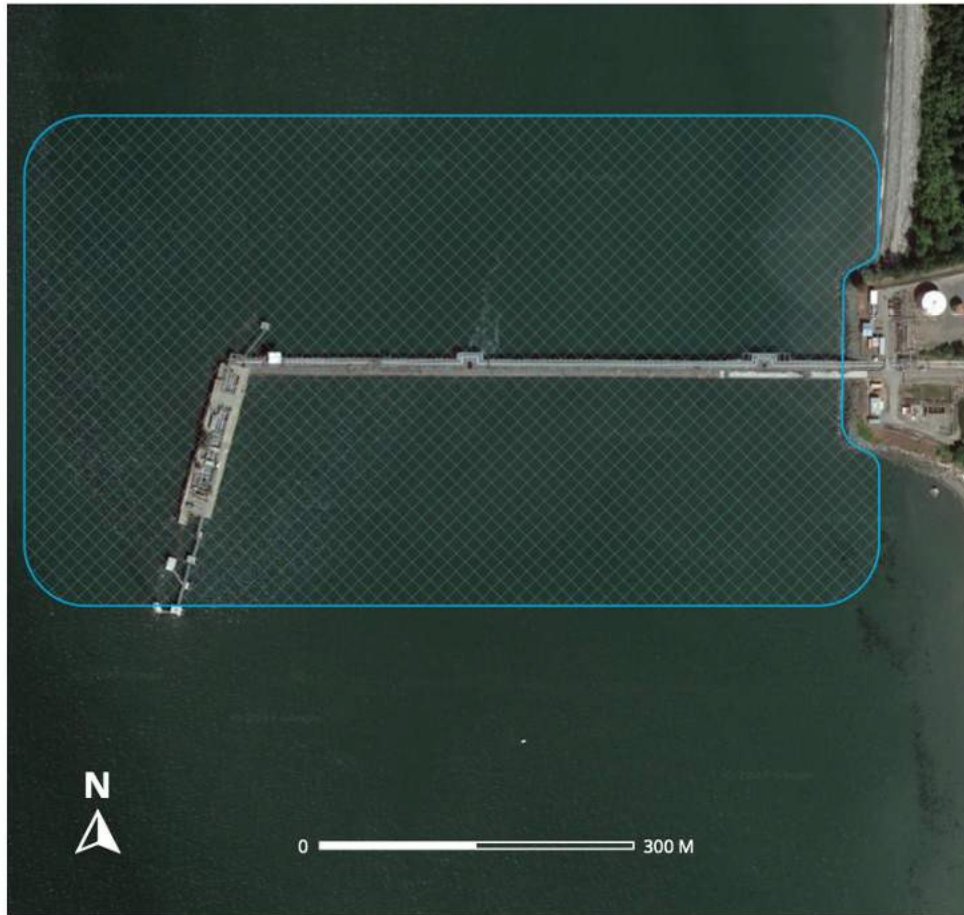
Upon completion of vibratory pile driving and removal activities for the day, PSO's will continue to monitor for 30 minutes, after which monitoring activities are officially finished for the day.

3.1.2 In-water Chainsawing

For all in-water chainsaw activities, the IHA has established project-specific Level A and Level B monitoring zones (Figure 5). For ESA-listed marine mammals, including Humpback Whales and Southern Resident Killer Whales (SRKW), a 215-meter exclusion zone will be implemented for all in-water chainsaw activities. For non-listed marine mammals, the IHA has proposed a 215-meter harassment zone for all in-water chainsaw activities. Monitoring activities will mirror those listed above for vibratory pile driving and removal activities.



UNDERWATER CHAINSAW NOISE BEHAVIORAL THRESHOLD EXCEEDANCE ZONE



Distance to attenuation of underwater chainsaw noise below the behavioral disruption threshold for all marine mammals.

— Behavioral Disruption Zone: 215 m

Figure 5. Level A and B Zones for Marine Mammals During In-Water Chainsawing (Phillips 2024).

3.2 PSO Locations

Two PSO's will be stationed in the project action area during all in-water and pile driving activities. The locations will allow the PSO's to effectively cover the action area, including all Level A and B Shutdown and Harassment/Monitoring zones (Figure 6). The lead PSO will be stationed near the in-water work, either on the dock, construction barge, or adjacent shoreline to monitor the 7.5m shutdown zone and nearby waters for harbor seals, sea lions, and harbor porpoise. The lead PSO is responsible for safely notifying pile driving personnel when a marine mammal approaches or enters the shutdown zone.

A boat-based PSO will monitor the 1585m monitoring zone, which includes the Level A shutdown zone for ESA-listed marine mammals (Humpback Whales and Killer Whales) and the Level B Harassment Zone for all non-listed ESA species. This boat-based PSO will be ferried via boat/boat captain along the outer edges of the 1585m shutdown and harassment zone, looking for marine mammals as they approach the action area. If a marine mammal approaches or enters the shutdown zone, the lead PSO will immediately be notified and the appropriate actions will be taken. PSO's will communicate using a 2-way radio, cell phone, or other approved device for all communications.

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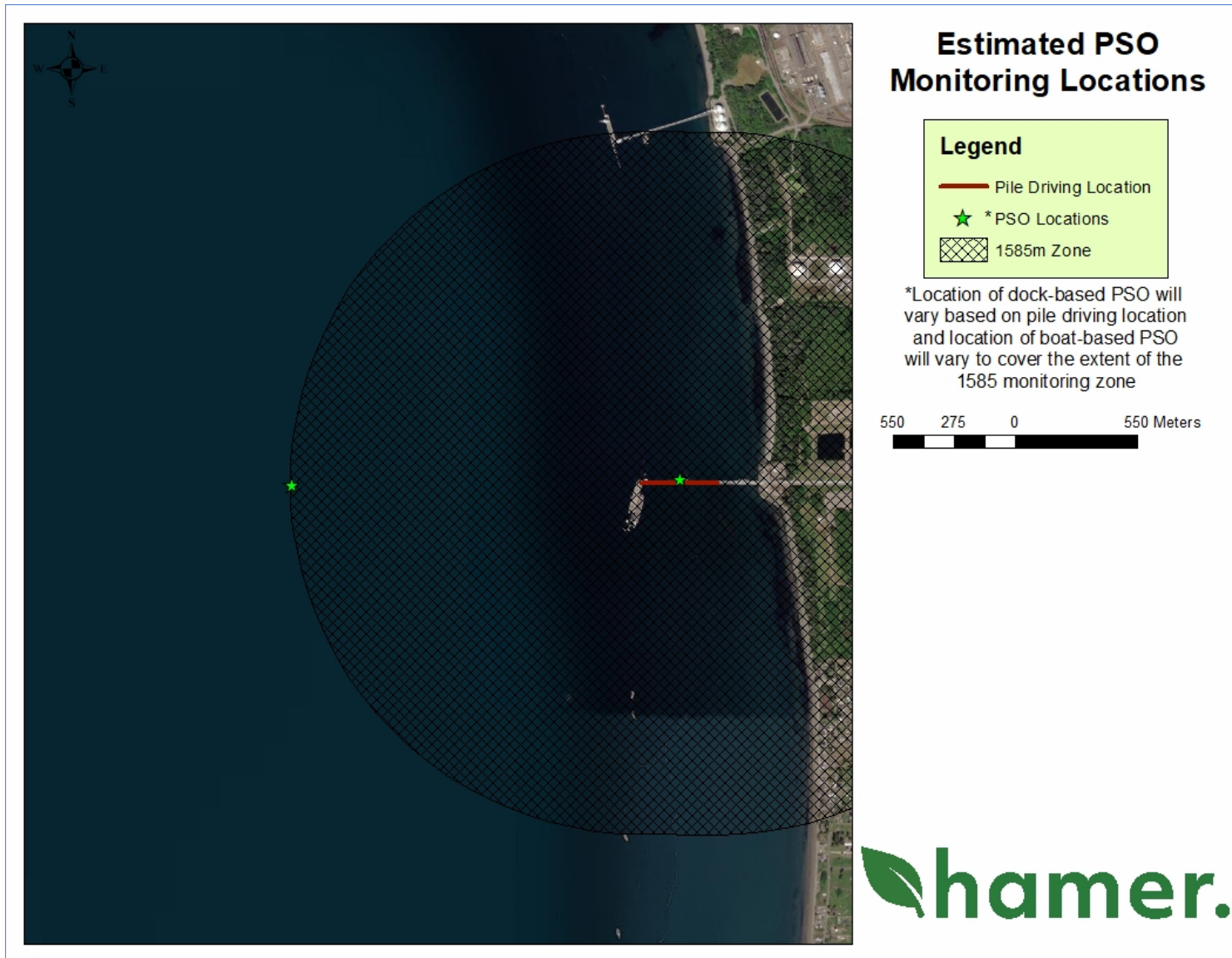


Figure 6. Estimated PSO Locations During In-Water Activities.

3.3 Reporting

PSO's will be required to collect and record data daily on a project-specific data form (Appendix A). All marine mammal observations will be recorded, including:

- The time and location of observation, including the distance and bearing from in-water activities;
- The species observed;
- The number of individuals seen;
- The behavior of the marine mammal/s observed;
- If possible, PSO's will also record the sex/age of the marine mammal/s observed;
- In-water work activities, if any, at the time of observation

PSO's will refrain from recording duplicate records of the same marine mammal/s, to the best extent possible. Along with recording all marine mammal observations, PSO's will also record the following daily information:

- The date and monitoring location;
- The weather and sea-state;
- The start/end time of daily monitoring

The lead PSO will also be responsible for recording the exact times of all in-water pile driving/removal and underwater chainsaw activities. Effective and frequent communication with pile driving personnel will be essential for accurately documenting these activities. If any ESA-listed species are observed within the Level A shutdown zone during in-water work activities, in-water operations will stop and NOAA will be notified. This may require a reinitiation of consultation between Phillips and NOAA.

Upon completion of in-water work activities, a draft monitoring report will be drafted and submitted to NOAA within 90 business days. This draft report will include the daily PSO observations, the amount of take, and the effectiveness of the MMMP. All daily data forms will also be included in the monitoring report. Within 30 business days receipt of comments from NOAA on the draft report, a final report will be submitted to NOAA.

References

Endangered Species Act, US Code 16 (1973) 1531-1544

Marine Mammal Protection Act, US Code 16 (1972) 1761

Phillips 66. 2024. Ferndale Refinery Dock Maintenance and Pile Replacement Project Incidental Harassment Authorization Application.

Appendix B – Resumes of PSO's

Matt Reed

COO & Senior Wildlife Biologist



Education: BSc in Wildlife Resources, University of Idaho

Years of Professional Experience: 20+

Matt Reed has over twenty years of experience in avian, wildlife, and fisheries/marine biological research in the western United States and Hawaii, including managing multiple avian habitat, impact, and management studies for birds in Washington State. He has developed specific management and mitigation plans for various avian and terrestrial species, conducted environmental studies, wildlife research, habitat evaluations, biological resource management plans, and studies of special status species including federal- and state-listed and Washington Priority Habitats and Species (PHS) birds across the western U.S. He has conducted large-scale studies involving avian habitat delineation, avian use and breeding bird point counts, raptor migration, avian nest, and species identification following species specific habitat assessment guidelines and survey protocols throughout the U.S. Matt has specialized in conducting inventories for terrestrial biological resources and assessing impacts to these resources from a variety of developments, including wind, solar, transmission, and other construction projects. Many of these projects included providing services in support of compliance with Section 7 of the Endangered Species Act, the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act and involved consultations with the USFWS under Section 7 of the Endangered Species Act and state-level biologists and regulators. These projects involved reviewing site plans for the construction of facilities, developing study plans, conducting literature reviews, conducting broad-scale surveys and impact assessment studies, developing drafting final reports for EISs, EAs and Biological Assessments. Matt routinely interacts with local, state, and federal agencies on behalf of his clients, authoring various SEPA/NEPA documents and impact assessments, including development of conservation measures, best management practices and specific mitigation plans with an adaptive management approach to ensure mitigation measures are properly implemented and continue to meet the goals of the mitigation.

Currently, Matt is project manager for multiple large avian survey efforts conducting surveys for the BLM and USFS for ESA listed bird species such as Marbled Murrelets and Northern Spotted Owls. He is also managing Marbled Murrelet and Northern Spotted Owl studies as part of the Skagit River Hydroelectric Relicensing and for a transmission line rebuild for Bonneville Power Administration in Western Washington. Matt is also the chair of the Marbled Murrelet Technical Committee's Marine Subcommittee and a member of the Inland Survey Protocol Committee.

Highlighted Experience

Avian Assessment and Surveys for Lummi Tribe. Current. Hamer Environmental are currently teaming with Canyon Environmental on this project for the Lummi Tribe. Matt is the project manager for Hamer, leading our team of wildlife biologists in designing and implementing avian assessments and surveys

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related to development project on Lummi Tribal lands. Work includes assessing the project area for various avian species and conducting presence/absence surveys.

Marbled Murrelet Habitat Assessment and Surveys for Whatcom County. 2022-Current. Hamer Environmental are currently teaming with Canyon Environmental on this project for Whatcom County. Matt is the project manager for Hamer, leading our team of wildlife biologists in assessing the presence of suitable habitat at Lake Whatcom Park and conducting presence/absence surveys for Marbled Murrelets.

Great Blue Heron Colony Monitoring for the City of Bellingham. 2022-Current. Hamer Environmental have a 5-year contract to conduct monitoring at the Post Point Great Blue Heron Colony in Bellingham, Washington. Matt is overseeing the project, which consists of identifying heron nests and monitoring the nests throughout the nesting season.

BPA Shelton to Fairmount Transmission Line Rebuild. 2021-Current. Hamer Environmental are currently teaming with Burns & McDonnell and ESA on Bonneville Power Administration's Shelton to Fairmount Transmission Line Rebuild project. Matt is the project manager for Hamer, leading our team of wildlife biologists and GIS analysts in designing and implementing avian desktop and field studies related to the potential impacts on Marbled Murrelet and Northern Spotted Owl populations and their habitats in the immediate vicinity of the transmission line corridor.

Skagit River Hydroelectric Relicensing. 2020-Current. Hamer Environmental are currently teaming with HDR Inc and ESA on Seattle City Light's Skagit River Hydroelectric Relicensing effort. Matt is the project manager for Hamer, leading our team of wildlife biologists and GIS Analysts in designing and implementing avian studies related to Marbled Murrelet and Northern Spotted Owl populations in the immediate vicinity of the Skagit River Hydroelectric Complex.

Marbled Murrelet and General Wildlife Impact Assessment for Swift Creek Repository SEIS, Nooksack, WA. 2018-Current. Matt is the lead wildlife biologist for field studies relating to a potential superfund site in Washington State. The creek has a natural occurrence of asbestos, and Whatcom County in Washington is looking to clean up the site to reduce contamination downstream. Matt is leading the wildlife impact assessment for the project, including conducting field studies at the site and developing a mitigation strategy for the SEIS.

Bureau of Land Management Marbled Murrelet Surveys, Roseburg District, OR. 2010-2020. Matt managed an annual survey crew for Marbled Murrelets in the Roseburg District of the BLM. He oversaw the day-to-day operations of the survey crew as the Project Manager and GIS Technician, creating the survey schedules and survey site and station GIS maps.

Samish Indian Nation Marbled Murrelet Surveys and Habitat Delineation, Anacortes, Washington. 2020-2021. Matt managed a Marbled Murrelet habitat delineation and survey project in Skagit County, Washington, for the Samish Indian Nation. The project involves identifying suitable Marbled Murrelet habitat and conducting surveys according to the 2003 Pacific Seabird Group Marbled Murrelet Inland Survey Protocol.

Marbled Murrelet Habitat Delineation and Inland Surveys, Northern California. 2019-2021. Client: Green Diamond. Matt is currently managed a Marbled Murrelet habitat assessment and survey crew for Green Diamond in Northern California. As Project Manager, Matt managed the survey crew, which

included creating the survey schedule and GIS maps and interacting with Green Diamond and California Fish and Wildlife Biologists.

Construction Monitoring for Marine Mammals and Marbled Murrelets at a Pile Dike Construction Site in the Mouth of the Columbia River, Washington. 2020. Client: US Army Corps of Engineers and Pacific Pile and Marine. Matt was the project manager and lead biologist conducting behavioral observations and monitoring of all marine mammals and seabirds present in the vicinity of a pile dike construction project to document any impacts from construction activities.

Pre- and Post-Construction Monitoring: Marine Mammal and Seabird Monitoring to Mitigate for Potential Impacts from Construction of the Kitsap Transit Ferry Terminal Construction Project, Port Orchard, Washington. 2019-2020. Matt was the project manager and lead marine mammal and seabird observer for this project and conducted behavioral observations and monitoring of all marine mammals and seabirds present in the vicinity of a ferry terminal construction project to document any impacts to marine mammals and seabirds from construction activities. Monitoring was land based depending on the day and sea conditions. Matt's responsibility was to ensure no marine mammals were in the vicinity when construction activities began. The behavioral responses of marine mammals and seabirds to vibratory and impact pile driving were recorded and analyzed and the findings were summarized in a report submitted to Kitsap Transit.

Pre- and Post-Construction Monitoring: Marine Mammal and Seabird Monitoring to Mitigate for Potential Impacts from Construction of the Edmunds Ferry Terminal Dolphin Repair Project, Edmunds, Washington. 2019. Matt was the project manager and lead marine mammal and seabird observer for this project and conducted behavioral observations and monitoring of all marine mammals and seabirds present in the vicinity of a ferry terminal construction project to document any impacts to marine mammals and seabirds from construction activities. Monitoring was land and boat-based, utilizing the Edmunds and Mukilteo ferries along with land-based observation points to monitor for the presence of marine mammals. Matt's responsibility was to ensure no marine mammals or seabirds were in the vicinity when construction activities began and to communicate with the lead WSDOT biologist. The behavioral responses of marine mammals and seabirds to vibratory pile driving were recorded and submitted to WSDOT.

Marblemount Quarry Wildlife Studies, Biological Assessment, and Draft Environmental Assessment. WA. 2018-2019. Matt was the lead wildlife biologist for a potential quarry construction project near Marblemount, Washington. A thorough assessment of wildlife habitat and presence/absence surveys for various ESA-listed species was conducted, including Marbled Murrelet surveys and carnivore surveys. Data collected during the assessments and surveys was inserted into a Biological Assessment and Environmental Assessment for the project.

Marbled Murrelet Biological Evaluation Addendum, Cooke Aquaculture. WA. 2016. Matt was the co-author in researching, developing, and preparing an addendum for a proposed finfish aquaculture development near Port Angeles, Washington. The addendum was specifically related to Marbled Murrelets and their risk of being entangled in nets and other underwater gear associated with finfish aquaculture.

Pre- and Post-Construction Monitoring: Marine Mammal and Marbled Murrelet Monitoring and Carcass Searches to Mitigate for Potential Impacts from Construction of the Vashon Ferry Terminal Construction Project, Vashon Island, Washington. 2015-2016. Matt was the project manager and conducted behavioral observations and monitoring of all marine mammals and seabirds present in the vicinity of a ferry terminal

construction project to document any impacts to mammals from construction activities. Monitoring was both land and sea-based, depending on the day and sea conditions. Underwater sound percussions from driving construction pilings into the shoreline substrate can create high decibel sound readings in underwater areas adjacent to the pile location. These high sound levels can damage the hearing of marine mammals and marbled murrelets and cause potential impacts to internal organs. Matt's responsibility was to ensure no marine mammals or marbled murrelets were in the vicinity when construction activities began. The behavioral responses of mammals and marbled murrelets to vibratory and impact pile driving were recorded and analyzed. Marine mammals observed on the project included Orcas, Humpback Whales, Grey Whales, and various other Pinnipeds and Cetaceans. Seabirds routinely documented include Common Murre, Pigeon Guillemot, Cassin's Auklet, along with various species of waterfowl, gulls, and cormorants.

Pre- and Post-Construction Monitoring: Marine Mammal and Seabird Monitoring to Mitigate for Potential Impacts from Construction of the Anacortes Ferry Terminal Project in Anacortes, Washington. 2015 – 2016. Matt helped manage and conduct behavioral observations and monitoring of all marine mammals and seabirds present in the vicinity of a ferry terminal construction project to document any impacts to mammals and seabirds from construction activities. Monitoring was primarily conducted at-sea using a boat provided by the construction contractor. Underwater sound percussions from driving construction pilings into the shoreline substrate can create high decibel sound readings in underwater areas adjacent to the pile location. These high sound levels can damage the hearing of marine mammals and seabirds and cause potential impacts to internal organs. Our responsibility was to ensure no marine mammals were in the vicinity when construction activities began. The behavioral responses of mammals and seabirds to vibratory pile driving were recorded and analyzed. Project work also included error checking field data. Marine Mammals encountered included California Sea Lions, Harbor Seals, and Harbor Porpoises. Seabirds routinely observed included Marbled Murrelet and various species of waterfowl, gulls, and cormorants.

Pre- and Post-Construction Monitoring: Marine Mammal to Mitigate for Potential Impacts from Construction of Aid to Navigation (ATON) Structures in the Puget Sound and Straits of Juan De Fuca, Washington. 2015 - 2016. Matt was the project manager and conducted behavioral observations and monitoring of all marine mammals present in the vicinity of a Aid to Navigation (ATON) construction project to document any impacts to mammals from construction activities. The project involved the monitoring of ATON installations and deconstructions all across the Puget Sound and Straits of Juan De Fuca, where Matt either monitored from the construction company barge or via a boat. Underwater sound percussions from driving construction pilings into the shoreline substrate can create high decibel sound readings in underwater areas adjacent to the pile location. These high sound levels can damage the hearing of marine mammals and cause potential impacts to internal organs. Our responsibility was to ensure no listed mammals were in the vicinity when construction activities began. The behavioral responses of mammals and to vibratory pile driving were recorded and analyzed. Project work included error checking field data, analysis of field data and preparation of a final report. Marine mammals encountered included California Sea Lions and Harbor Seals.

Pre- And Post-Construction Monitoring: Marine Mammal And Marbled Murrelet Monitoring and Carcass Searches To Mitigate For Potential Impacts From Construction Of A Private Travel Lift Pier in Anacortes, Washington. 2015. Matt was the project manager and conducted behavioral observations and monitoring of all marine mammals and seabirds present in the vicinity of a private travel lift pier construction project to document any impacts to mammals from construction activities. Underwater sound percussions from driving construction pilings into the shoreline substrate can create high decibel

sound readings in underwater areas adjacent to the pile location. These high sound levels can damage the hearing of marine mammals and marbled murrelets and cause potential impacts to internal organs. Our responsibility was to ensure no listed mammals or marbled murrelets were in the vicinity when construction activities began. The behavioral responses of mammals and marbled murrelets to vibratory and impact pile driving were recorded and analyzed. Project work included error checking field data, analysis of field data and preparation of a final report. Marine mammals encountered included Harbor Seals.

Assessing Impacts to Natural Resources from Proposed Wind and Solar Energy Developments, Meteorological Towers, Communication Tower, and Military Facilities in Hawaii. 2008 – 2015. Client: Various Federal, State, and Private Clients across Hawaii. Matt conducted ornithological radar studies of endangered and threatened seabirds and bats at proposed communication towers, meteorological towers, and wind and solar energy developments. Bats were surveyed by walking survey transects and using hand-held acoustical bat detectors and night vision equipment to detect bats.

Assessing Impacts to Pelagic Seabirds from Light Attraction at Offshore Oil Platforms in the Santa Barbara Channel of Southern California. 20013 - 2014. Matt surveyed for seabirds on offshore oil platforms in the Santa Barbara Channel of southern California using marine radar to see if seabirds were attracted to the lights of the platforms at night. The focus of this study was on Scripps's Murrelets and Ashy Storm-Petrels. Radar detected nocturnal seabirds being attracted to the lighted decks of the oil platforms. In addition to surveying with radar, visual observations of seabirds being attracted to lights at night were recorded, along with any rafting and/or foraging seabirds seen during the day on and around the platforms. Marine Mammals encountered included Blue Whales, Pacific White-sided Dolphins, California Sea Lions, and Harbor Seals.

Pre- and Post-Construction Monitoring: Marine Mammal Monitoring Of Mammal Presence, And Carcass Searches to Mitigate For Potential Impacts from Construction of Manette Bridge, Bremerton Washington. 2010 - 2011. Matt conducted behavioral observations and monitoring of all marine mammals and seabirds present in the vicinity of a bridge construction project to document any impacts to mammals from construction activities. Underwater sound percussions from driving construction pilings into the shoreline substrate can create high decibel sound readings in underwater areas adjacent to the pile location. These high sound levels can damage the hearing of marine mammals and cause potential impacts to internal organs. Our responsibility was to ensure no listed mammals were in the vicinity when construction activities began. The behavioral responses of mammals to vibratory pile driving were recorded and analyzed. Project work included error checking field data. Marine Mammals encountered included California Sea Lions and Harbor Seals.

Alaska Fisheries Observer in the North Pacific and Bering Sea, National Marine Fisheries Service, OR, WA, and AK December 2006 — April 2007, September 2007 — March 2008, January — March 2009, January —April 2010, September 2010 —March 2011, November 2011 —March 2012, October 2012. Matt served as an onboard fisheries biologist, on commercial fishing vessels in the Bering Sea and North Pacific. His duties involved oversight of fishing operations, biological sample collection and analyses, and by-catch disposal supervision. Data was also collected on all marine mammals and federally listed and protected seabirds encountered. This position required irregular work hours, rough ocean conditions, following detailed fisheries protocols, and report writing. Marine Mammals encountered included Orcas, Humpback Whales, Fin Whales, Risso's Dolphin, Pacific White-sided Dolphin, Dall's Porpoise, Harbor Porpoise, and Stellar Sea Lion. Seabirds routinely encountered included Marbled Murrelet, Red-legged Kittiwake, Common Murre, Brown Pelican, Pigeon Guillemot, Cassin's Auklet, and various species of Cormorants, Gulls, and Petrels.

Case Wyatt
Wildlife Biologist



Education

BSc. in Wildlife Management from Tarleton State University, 2012

Case Wyatt has over a decade of experience conducting wildlife research and data collection in Texas, Oklahoma, New Mexico, Oregon, and Washington. His expertise in the Pacific Northwest includes surveys and habitat assessments for Marbled Murrelet, Northern Spotted Owl, and red tree vole. He has marine mammal monitoring experience observing and recording species in the Pacific Northwest and Southeast Alaska. Case has conducted surveys for many species with extensive experience surveying for threatened or endangered species. He has experience conducting avian point counts and nest monitoring for research and energy development. Case has a track record of managing crews that are required to meet strict weekly deadlines for submitting reports and summaries.

Project Experience

Avian Radar and AV Study for Hawaii Utility Avian Habitat Conservation Plan. SWCA. Hawaiian Islands. 2023-Present. Hamer Environmental designed and conducted a radar and audiovisual study of federally endangered seabirds to assess collision risk potential with transmission lines. A total of forty (40) survey locations were surveyed in Fall 2023 throughout a Hawaiian Island's transmission infrastructure. An additional year of radar and av surveys is planned for spring through fall of 2024. Surveys were conducted by a two-person team, of a radar technician and audiovisual observer. Radar surveys used one of Hamer's 3D radar systems mounted on a truck and covering a radius of 1.5km. The radar technician communicated with the audio-visual observer when a radar target was observed nearby that fit the criteria as a seabird, and the observer used binoculars or night vision to observe and identify any birds. Surveys for the nocturnal seabirds were conducted in the evening for 3 hours from sunset, and again in the morning for two hours ending at sunrise. Personnel served as radar technician and audiovisual observer at different times throughout the study.

Sixes River In-holding Marbled Murrelet Surveys. Coquille Indian Tribe. Sixes, Oregon. 2023. Case managed a crew that conducted Marbled Murrelet audio/visual surveys according to the 2003 Pacific Seabird Group Marbled Murrelet Inland Protocol. He created the survey schedule, conducted audio-visual surveys, reviewed and transmitted data to the tribe and transcribed the report detailing the findings of the study.

BLM Roseburg District Marbled Murrelet Surveys. Bureau of Land Management (BLM). Oregon. 2022-Present. Case managed a crew that conducted Marbled Murrelet audio/visual surveys according to the 2003 Pacific Seabird Group Marbled Murrelet Inland Protocol. He assigned tasks, created the survey schedule, conducted audio-visual surveys, reviewed and transmitted data to the BLM. Case was responsible for hiring and training staff for the project and communicating with BLM staff.

Fautleroy Ferry Terminal Marine Mammal Monitoring, Seattle, WA. 2023. Case conducted marine mammal monitoring surveys for Washington State Ferries for a project at the Fautleroy Ferry Terminal in West Seattle. Work included recording all marine mammals seen into the Survey 123 app provided by WSF.

Ketchikan Airport Ferry Terminal Marine Mammal Monitoring, Ketchikan, AK. 2022-2023. Case managed and conducted marine mammal monitoring surveys for the Alaska Dept of Transportation for a project at the Ketchikan Ferry Terminal in Alaska. Case was the onsite project manager and lead monitor for the project.

Marine Structure Maintenance and Pile Replacement Program. Department of the Navy. Naval Base Kitsap, Washington. 2021. Hamer Environmental conducted marine mammal and marbled murrelet monitoring during impact and vibratory pile driving at Naval Base Kitsap's Bangor EHW-1. Case monitored for marine mammals under and around the wharf before, during and after pile driving. Sightings were immediately communicated via handheld radios to a Hamer lead who coordinated with client's project manager to halt or continue pile driving activities. All observations were recorded and compiled according to the National Marine Fisheries Services (NMFS)-approved Marine Mammal Observation Record Form to determine if any take occurred.

BLM Medford District Marbled Murrelet Surveys. Bureau of Land Management (BLM). Oregon. 2022-2023. Case managed a crew that conducted Marbled Murrelet audio/visual surveys according to the 2003 Pacific Seabird Group Marbled Murrelet Inland Protocol. Other listed species including the Northern Spotted Owl were recorded and reported to the BLM. He assigned tasks, created the survey schedule, conducted audio-visual surveys, reviewed and transmitted data to the BLM. Case assisted with hiring and training staff for the project and communicating with BLM staff.

Post Point Heron Colony Nest Monitoring. City of Bellingham. Bellingham, Washington. 2022-Present. Hamer Environmental monitored nesting success at the Post Point great blue heron colony in Bellingham, Washington. The colony was observed for heron nesting and fledging success, data was recorded and compiled into a report for the City of Bellingham.

Demolition of DGPS Tower Site. Northern Pride Communications, Inc., Whidbey Island, WA, 2021. Case conducted a biologist desktop review and biological surveys of priority habitats and priority species near the demolition site including the northern spotted owl and marbled murrelet. Avian surveys were conducted, and a list of all species observed was provided to Northern Pride Communications.

Skagit River Hydroelectric Relicensing. Seattle City Light, 2021, North Cascades, WA., 2021. Case was the audio-visual component of a Marbled Murrelet radar project for Seattle City Light's hydroelectric dam relicensing. Case conducted 3-hour long audio-visual surveys for the federally threatened Marbled Murrelet but also recorded other species potentially observed on the radar. Habitat assessments were conducted to determine suitability of Marbled Murrelet nesting habitat in adjacent forests. Case also helped coordinate with Seattle City Light and HDR staff for barge transportation and safety check-ins.

Sand Island Test Pile Project. U.S. Army Corps of Engineers (USACE). Clatsop County, Oregon and Pacific County, Washington. 2020. Hamer Environmental conducted marine mammal and marbled murrelet monitoring during impact and vibratory pile driving near West Sand Island and East Sand Island at the Mouth of the Columbia River. Sightings were immediately communicated to a Hamer lead who coordinated with client's project manager to halt or continue pile driving activities. Information from observations were transcribed and observations mapped to determine if any take occurred.

Marbled Murrelet Crew Lead. Bureau of Land Management, Roseburg, OR. 2020. Client: Determined presence or occupation of threatened marbled murrelets in Bureau of Land Management (BLM) timber units using the Pacific Seabird Group protocol. Trained crew members, assigned tasks, reviewed &

Phillips 66 Ferndale Refinery Dock Maintenance Marine Mammal Monitoring Plan

corrected schedules, and proofed data sheets. Established new survey stations at set points with suitable canopy openings by cutting flagged trails through understory. Case provided weekly status reports to BLM staff, conducted biweekly safety meetings with crew and coordinated with other staff on scheduling.

Marbled Murrelet Surveys and Crew Leading. Lincoln City, Oregon. 2016, 2017 and 2018. Determined presence or occupation of threatened marbled murrelets in private Pacific Northwest timber stands using the Pacific Seabird Group protocol. Trained crew members, assigned tasks, reviewed & corrected schedules, and proofed data sheets. Assessed & mapped habitat at new survey sites by traversing stands seeking mature trees with suitable platforms. Established new survey stations at set points with suitable canopy openings by cutting flagged trails through understory. Utilized GPS, maps & compasses for locating stations & determining detection direction.

Avian Bio-monitoring. Oregon, Texas, New Mexico, and Oklahoma, 2017-2021. Worked with various wind energy clients conducting avian use surveys for large and small birds for pre- and post-construction monitoring. Mortality searches and carcass persistence trials around wind turbines for birds and bats. Monitored for and identified raptors from 1 hour after sunrise to 1 hour before sunset. Curtailed wind-turbines for at-risk eagles using tablets and software provided by wind-energy company. Logged data daily for each site & provided daily reports to crew members. Search and efficiency trials to locate decoys in variable vegetation heights. Drove transects surveying for sandhill cranes and whooping cranes. Daily communication with wind energy staff and completing regular job safety analyses (JSA). Worked independently with supervisory contact only when necessary.

Jordan Riggins

Wildlife Biologist (Staff Biologist)



BS in Zoology, Humboldt State University
Years of Professional Experience: 11 Years

Jordan Riggins joined Hamer Environmental in 2022 adding over a decade of experience conducting wildlife surveys and managing projects in the Pacific Northwest to the company's repertoire. She has extensive experience surveying and managing projects for marbled murrelets, an ESA-listed seabird, but also has considerable experience surveying for many other avian species including the northern spotted owl, bald eagle, osprey, peregrine falcon and streaked horned lark. In addition to birds, Jordan has also conducted surveys for terrestrial mollusk, red tree vole, salamander species and noxious weed mapping. Jordan is skilled in project management, data/GIS analysis, drafting reports, meeting deadlines, and collaborating with clients across a spectrum of projects involving managing over sixty seasonal surveyors in the past decade. Jordan has also completed Hamer Environmental's Marine Mammal monitoring training and is familiar with the marine mammals that are found in the Salish Sea.

Relevant Project Experience

Marine Mammal Surveys, Bellingham Cold Storage. WA. 2022. Jordan served as the on-water marine mammal monitor for an in-water piling project at various WSF ferry terminal locations in the Puget Sound, surveying for marine mammal species which could be impacted by noise from construction projects.

Marine Mammal Surveys, Washington State Ferries. WA. 2022-2023. Jordan served as the on-water marine mammal monitor for an in-water piling project at various WSF ferry terminal locations in the Puget Sound, surveying for marine mammal species which could be impacted by noise from construction projects.

Marbled Murrelet Surveys, Bureau of Land Management (BLM). Roseburg Field Office, Oregon. 2022. Jordan assisted in training surveyors and worked as a surveying biologist for marbled murrelet on BLM land in southwest Oregon outside the Roseburg area.

Projects prior to employment at Hamer:

Marbled Murrelet Surveys, Bureau of Land Management (BLM). Marys Peak Field Office, Oregon. 2020-2021. Jordan worked as a surveying biologist for marbled murrelet on BLM land in western Oregon. She assisted with coordinating survey effort outside the Corvallis area, training surveyors in station setting and survey protocol, performed QA/QC on collected survey data, conducting follow-up surveys, and also drafted and submitted summary reports at regular intervals.

Marbled Murrelet Surveys, Greenwood Resources. Western Oregon. 2019-2021. Jordan led survey efforts for marbled murrelet surveys accessed and conducted on privately owned land near Jewell and Tillamook, Oregon. She trained surveyors in station setting and survey protocol, performed QA/QC on collected survey data, conducted follow-up surveys, drafted and submitted summary reports at regular intervals.

Marbled Murrelet Surveys, Bonneville Power Administration (BPA). Holcomb, Washington. 2018. Jordan conducted surveys as a surveying biologist for marbled murrelet along BPA transmission lines from Holcomb to Naselle, Washington.

Marbled Murrelet Surveys, Bonneville Power Administration. Marys Peak, Oregon. 2018. Jordan conducted surveys for marbled murrelet in the Siuslaw National Forest and on BPA land setting up and surveying stations. She performed marbled murrelet habitat delineations assessing potential habitat and assisted with technical reports detailing delineation and survey results.

Graeme Riggins

Wetland Scientist



Education

BS in Environmental Science and Resource Management, University of Washington, 2013.

Years of Professional Experience: 8 Years

Graeme has over 8 years of experience working in environmental science and wildlife biology for state agencies, universities, private research organizations and as a consultant in the private sector. He has worked with a large variety of avian species, including northern spotted owl, marbled murrelet, bald eagles, and black-backed woodpecker. Graeme is well-versed in the flora of the mountains, meadows, and forests of the Pacific northwest and has conducted a variety of habitat surveys in the Cascades of Oregon and Washington, the Coast range, and sagebrush-steppe of Oregon. He has also conducted trapping efforts for Washington ground squirrel in the Columbia Gorge and fisher in the Fremont-Winema National Forest.

Graeme has formally completed Marine Mammal Identification Training with Hamer Environmental, which includes the use of the Survey 123 app for reporting all marine mammal sightings. He is also certified to conduct Marbled Murrelet At-Sea surveys.

Experience

Marine Mammal Surveys, Washington State Ferries. WA. 2022-2023. Graeme served as the on-water marine mammal monitor for an in-water piling project at various WSF ferry terminal locations in the Puget Sound, surveying for marine mammal species which could be impacted by noise from construction projects.

Bald Eagle Night Roost Surveys, Sierra Pacific Industries. Deming, WA. 2022. Graeme performed night roost surveys on a Sierra Pacific property designated as a conservation easement with Whatcom County Land Trust. He was responsible for coordinating with SPI and Land trust representatives to meet survey quotas, conducting surveys and preparing a final report.

Marine Mammal Surveys, U.S. Navy. Poulsbo, WA. 2021. Graeme served as the on-water marine mammal monitor for an in-water piling project on US Navy property in the Puget Sound, surveying for marine mammal species which could be impacted by noise from construction projects.

Projects prior to employment at Hamer Environmental:

Streaked Horned Lark Surveys. Columbia River, Oregon. 2021. Graeme conducted pre-construction surveys for streaked horned larks along the Columbia River.

Terrestrial Mollusk Surveys, U.S. Forest Service, Mount Hood National Forest 2020-2021 Graeme worked as a surveying biologist to survey proposed stands for threatened and endangered terrestrial mollusk species (e.g. *Monodinia fidelis columbiana*, *Cryptomastix devia*, *Pristiloma wascoense*). Work included training surveyors in survey protocol and terrestrial mollusk identification, conducting surveys

for terrestrial mollusks, collecting specimens, identifying species before sending on to a mollusk expert for confirmation of any target species and monumentation of any confirmed target species locations.

Northern Spotted Owl Surveys, U.S. Forest Service, Mount Hood, Western Oregon and Southern Washington 2019-2021 Graeme worked as a surveying biologist to locate and determine nesting status of northern spotted owl (*Strix occidentalis caurina*) in projects for USFS in Mt. Hood, Gifford Pinchot and Fremont-Winema National Forests. Graeme was responsible for conducting night point call-playback surveys, activity center walkthroughs, and follow-up surveys to determine presence and nesting status of located owls. Graeme was also responsible for training technicians in survey protocol and identification of owl species.

Marbled Murrelet Surveys, Oregon Department of Forestry, Western Oregon, 2019-2021. Graeme conducted surveys for marbled murrelet on public timber lands in western Oregon. He was responsible for training surveyors in station setting protocol and assisting with data QC, as well providing support to field crews.

Passerine Point Count Surveys, Portland Metro, Willamette Valley, Oregon, 2019-2021. Graeme was responsible for conducting point count and nest search surveys for passerines at a number of sites throughout the greater Portland area.

Construction Wildlife Surveys, Bonneville Power Administration, Columbia Gorge 2019-2020 Graeme conducted surveys at known nest locations for bald eagle, osprey and peregrine falcon. Surveys included recording behavioral information to determine nesting and breeding pair status. Northern spotted owl night point call-playback and follow-up surveys were also part of this project. Survey and relocation of amphibians within proposed work areas.

Northern Spotted Owl Surveys, Bureau of Land Management, Coos Bay, OR 2019 Graeme worked as a surveying biologist to locate and determine nesting status of northern spotted owl in projects on BLM land near Coos Bay, Oregon. Graeme was responsible for conducting night point call-playback surveys, activity center walkthroughs, and follow-up surveys to determine presence and nesting status of located owls.

Terrestrial Mollusk Surveys, Bureau of Land Management, Tillamook District, 2019. Graeme worked to survey proposed stands for threatened and endangered terrestrial mollusk species in western Oregon. Work included conducting surveys for terrestrial mollusks, collecting specimens, identifying species before sending on to a mollusk expert for confirmation of any target species and monumentation of any confirmed target species locations.

Fisher Research, U.S. Forest Service, Fremont-Winema National Forest, 2018. Graeme assisted with recapture efforts for fisher in the Upper Klamath Basin and conducted fisher rest habitat assessment surveys.

Intensive Forestry Management Study, National Council for Air and Stream Improvement, Western Oregon, 2018. Mr. Riggins led survey efforts for a long-term study on the effects of intensive forest management on passerine abundance. He trained surveyors in survey protocol and the identification of western songbirds and plants. Surveys included point count surveys and associated arrays of stem count, vegetation cover, and downed woody debris surveys.

Red Tree Vole Surveys, Bureau of Land Management, Tillamook District. 2018. Graeme worked as a surveying biologist to assess proposed stands on BLM land for red tree voles.

Washington Department of Natural Resources Timber Sale Process. Sedro-Woolley, Washington. 2016-2017 Graeme contributed to the Department of Natural Resources' (DNR) timber harvest process by delineating and analyzing habitat for marbled murrelet and "uncommon habitats", as described in the DNR's Habitat Conservation Plan, in DNR's Northwest Region. Graeme prepared and presented technical reports detailing delineation results for regional biologists and foresters to inform timber harvest plans, identified uncommon habitat types present within timber stands and performed nest surveys for northern goshawk at known nest sites on DNR lands.

Washington Ground Squirrel Research, Michigan State University – Wildlife Toxicology Lab, Boardman, Oregon. 2015 Graeme conducted burrow count, audio-visual surveys, and led trapping and tagging efforts for a research project investigating Washington ground squirrel on the Boardman Naval Weapons Systems Training Facility. He also conducted vegetation surveys analyzing habitat, deployed infrared camera rigs to monitor den site activity and reviewed footage from deployed IR cameras.

Black-backed Woodpecker Research, Klamath Bird Observatory. Upper Klamath Basin, Oregon. 2014. Mr. Riggins conducted call-playback surveys of black-backed woodpecker in unburned forest, recorded behaviors of all Picids and recorded all avian species present during survey efforts. Survey efforts also included habitat analysis via downed woody debris and vegetation cover surveys.

Nicholas Denk

Wetland Scientist



BS in Environmental Science, Western Washington University, 2018.

Grass, Sedge, & Rush Identification for Western Washington, Coastal Training Program, 2023

AutoCAD I & II, Bellingham Technical College, 2019-2020

Determining the Ordinary High Water Mark, Coastal Training Program, 2019

Western Washington State Wetland Rating System (2014), Coastal Training Program, 2019.

Nicholas Denk joined the Hamer team in 2024, bringing over 4 years of experience in environmental consulting for public, private, and tribal clients. He also has a year of wetland/stream restoration installation/maintenance experience through the Washington Conservation Corps. Nicholas' skills focus on delineating wetlands, collecting data in the field on soils, vegetation, and hydrology, and preparing associated critical areas reports/mitigation plans in accordance with local, state, and federal requirements. Additionally, he has nearly 4 years of experience utilizing CAD software to process survey and/or GPS data to prepare report figures or client site plans. Nicholas also prepares regulatory compliance documentation and permit applications.

Nicholas has also completed Hamer Environmental's Marine Mammal monitoring training and is familiar with the marine mammals that are found in the Salish Sea.

The following projects were prior to employment at Hamer:

Critical Areas Assessment Report, Mitigation Plan, & Habitat Management Plan in Anacortes WA. 2022-2024. Nicholas performed a regulatory review of the proposed project and associated regulations at the local, county, and state level for the private client's proposed project in the City of Anacortes, WA. The property was in shoreline jurisdiction, had wetlands on-site, had nearby eagle nest present, was within a heron rookery buffer, and the buffer of a City of Anacortes Species/Habitat of Local Importance. He prepared a functional analysis of impacts associated with the proposed project and negotiated with local regulators, the client, and associated parties to meet critical area requirements. He also prepared a habitat management plan associated with the heron rookery to ensure the site plan and proposed uses were in compliance with regulatory habitat protections.

Cascade Natural Gas Critical Areas Assessment Report in Island County, WA. 2023. Nicholas lead the wetland delineation along approximately 1.25 miles of Ault Field Rd north of Oak Harbor, WA. Work was performed for Cascade Natural Gas to support permitting the extension of a gas line along the roadway. Nicholas approximated off-site wetland boundaries of multiple depressional wetlands within the study area using LiDAR, public records, and visual observation. He determined their regulated buffers via the Island County Code. Nicholas integrated the results of the delineation with the client's proposed site plan to determine no impacts were proposed. He then prepared the associated Critical Areas Assessment Report for the proposed project. Nicholas prepared all report figures utilizing CAD.

Wetland Delineation in Skagit County, WA. 2021. Nicholas performed a wetland delineation on approximately 140 acres of hay field near Burlington, WA for a private client looking to develop the land into an agricultural product processing facility. The property had been formerly delineated by another firm, but the Department of Ecology rejected the results and requested a third-party review. To

efficiently review such a large property, Nicholas utilized 100 ft transects with hydric soil/wetland hydrology determinations to establish general wetland boundaries, then refined the general boundaries with smaller determination intervals as needed. He used Skagit County Critical Areas Code to determine regulated buffers. He prepared the wetland delineation results map with CAD.

Howard Bowen Park Critical Areas Assessment Report & Mitigation Plan in Sumas, WA. 2020-2021.

Nicholas performed a wetland delineation and ordinary high water mark determination (Bone Creek) in Howard Bowen Park in Sumas, WA. Work was performed for the City of Sumas to support permitting upgrades to the existing Sumas Rodeo Grounds. Nicholas delineated wetland boundaries of multiple riverine wetlands and determined their regulated buffers via the City of Sumas Municipal Code. Nicholas integrated the results of the delineation with the client's proposed site plan with CAD to determine impacts and potential mitigation. He collaborated with project engineers and architects, exchanging numerous CAD drawings, to synthesize a site plan that would satisfy Critical Area code requirements. He then prepared the associated Critical Areas Assessment Report and Mitigation Plan for the proposed project. Nicholas also prepared the associated SEPA checklist for submittal.

Critical Areas Assessment Report & Mitigation Plan in Whatcom County, WA. 2020.

Nicholas performed a wetland delineation on 5 acres northwest of Bellingham, WA for a private client looking to develop a single-family residence on forested land. Nicholas delineated wetland boundaries for multiple depressional wetlands and one riverine wetland and determined their regulated buffers via the Whatcom County Critical Areas Code. Nicholas integrated the results of the delineation with the client's site plan with CAD to determine strategies to avoid or minimize impacts. He prepared the associated Critical Areas Assessment Report and Mitigation Plan for the proposed project.

Mitigation Monitoring for the Meadows-Ferndale Homeowners Association in Ferndale, WA. 2019, 2023.

Nicholas assisted in conducting vegetation and hydrologic monitoring of created wetlands and buffer/wetland enhancement areas within the Meadow-Ferndale Community. Nicholas established long term transect locations and performed point intercept vegetation monitoring. Nicholas created all figures with GIS and reports associated with the monitoring results in 2019 and created figures with CAD for the results in 2023.

Critical Areas Assessment Report and Management Plan for Volunteer Park in Anacortes, WA. 2019.

Nicholas assisted in conducting a delineation of wetlands within Volunteer Park for the City of Anacortes, using federal (U.S. Army Corps of Engineers) methodology. Nicholas determined wetland boundaries and established protective buffers via the City of Anacortes Critical Areas Code. He assisted in determining potential impacts and site-specific best management practices (BMPs) for upcoming maintenance on park trails to remain in compliance with federal and City codes. Nicholas created all figures associated with the delineation results and management plan utilizing GIS.