Submittal #01 57 19-9R3

Marine Mammal Monitoring Plan Inclusive of Night Work

Multifunctional Expansion of Dry Dock 1

P-381

LOA Year (2024) – Year (2028)

Revised May 2024

Presented To:

PNSY Public Works Department

Portsmouth Naval Shipyard Kittery, ME 03904

By: 381 Constructors

Marine Mammal Monitoring Plan

Summary

This Marine Mammal Monitoring Plan (MMMP) has been developed to demonstrate compliance with the P-381 Project associated with the Multifunctional Expansion of Dry Dock 1, Specification Section 01 57 19.00 22 Subsection 1.7.1 (Item D) and in concurrence with information provided in the P-381 project Application for Letter of Authorization (LOA) (submitted by NAVFAC in August 2022) and the P-381 In-Water Night Work Proposal (NWP) (submitted by NAVFAC in January 2024). This document may be amended as necessary to comply with the requirements of the LOA, NWP and any subsequent amendments as issued. The P-381 LOA, NWP and supporting application will be available in the Environmental Office on site.

The primary update to the 381 LOA Marine Mammal Monitoring Plan (Rev 1) reflects means and methods to observe marine mammals during nighttime (sunset to 0200) activities. Nighttime monitoring means and methods are included in Section 10 of this document.

Contents

1. DESCRIPTION AND OVERVIEW

The MMMP is required to address activities associated with pile driving (vibratory and impact) and extraction, rock hammering, DTH hammer operation, rotary drilling, and any other activities that may impact marine mammals under the MMPA in the Super Flood Basin and at Berths 1 and 11 for the P-381 Multifunctional Expansion of Dry Dock 1 Project. This Plan covers the following as it relates to the Marine Mammal Protection Act (MMPA), the LOA, the NWP and the project specifications issued to the Contractor:

- Mitigation Measures
- Description of Region of Influence (ROI)
- Shutdown, Level A and Level B harassment zones
- Monitoring Measures and Frequency
- Communication Plan and Procedures
- Data Collection and Reporting
- Night Work Procedures
- Protected Species Observer Qualifications
- Recordings of Incidental Harassment Takes
- Weekly/Monthly Review of Observations and Take Counts
- Reporting of dead or injured marine mammals

2. MITIGATION MEASURES

The P-381 LOA authorizes the “taking” of five species of protected marine mammals in the Piscataqua River area surrounding the project area, consistent with previous authorizations for similar projects in this area. These species are:

- Harbor porpoise *(Phocoena phocoena)*
- Harbor seal *(Phoca vitulina)*

- Gray seal *(Halichoerus grypus)*
- Harp seal *(Pagophilus groenlandicus)*
- Hooded seal *(Cystophora cristata)*

Mitigation measures to reduce the overall "take" of marine mammals during construction activities, inclusive of night work are as follows:

Monitoring and Management of the Zones:

a. From sunrise to sunset, Protected Species Observers (PSOs) will be stationed in positions as indicated in the LOA to adequately view the entire Region of Influence (ROI) for pile driving (vibratory and impact) and extraction, rock hammering, DTH hammer operation, and rotary drilling activities. The ROI is defined by the farthest extent of sound propagation from the project area (1, Section 4).
    - Three PSOs will be required to adequately observe the harassment zones during pile driving (vibratory and impact) and extraction, rock hammering, DTH hammer operation, and rotary drilling activities. Night work monitoring locations and ROI visibility are detailed in Section 10 of this document.
b. PSOs will have no other assigned tasks during monitoring events (dedicated to monitoring).
c. If weather conditions prevent PSOs from adequately viewing the shutdown zone for the activity that is occurring, activities will be curtailed until conditions improve. However, if an activity has already begun, work will continue until it is safe to pause the activity.
d. The shutdown zone, harassment zones, and region of influence (ROI) will be visually observed from sunrise to sunset as appropriate for the specific activity in accordance with the issued authorization.
e. Applicable operations (pile driving [vibratory and impact] and extraction, rock hammering, DTH hammer operation, and rotary drilling activity) will not commence until a 30-minute pre-start clearance monitoring has been performed and it has been determined by the PSOs that the applicable activity shutdown zone is free of marine mammals.
    - If a marine mammal is present or observed entering the shutdown zone during the pre-activity survey, work will be delayed until one of the following conditions has been met:
        - the animal has been observed exiting the shutdown zone
        - the animal is thought to have exited the shutdown zone based on a determination of its course, speed, and movement relative to the pile driving location; or
        - the shutdown zone has been clear from any additional sightings for 15-minutes.
    - PSOs will communicate in accordance with the Communications Plan (Section 6) to the crew when pre-activity observation is complete and the zone is clear, or if work must be delayed.
f. Operations will cease if a marine mammal is observed within or approaching the shutdown zone during pile driving (vibratory and impact) and extraction, rock hammering, DTH hammer operation, and rotary drilling activities. Activities will remain halted until the mammal is seen exiting the area by its own volition, the animal is determined to have exited the shutdown zone based on a determination of its course, speed, and movement relative to the activity location, or if there are no sightings of the animal in the shutdown zone for fifteen minutes. If in-water construction activities cease for more than 30 minutes, the pre-activity monitoring of the shutdown zone must commence.
g. Crews will utilize a soft-start technique at the start of impact hammer pile driving activities, which will be noted in the In-Water Noise Generating Work Report (Attachment D) that are submitted at the end of every shift. The soft-start provides a warning and/or gives animals in close proximity to

pile-driving a chance to leave the area prior to an impact driver operating at full capacity, thereby exposing fewer animals to loud underwater and airborne sounds. Soft starts are required at the start of the day and after a break in impact driving lasting 30 minutes or longer.

h. Rock excavation and impact pile driving activities will occur during daylight hours only.
i. Pile driving (vibratory) and extraction, DTH hammer operation, and rotary drilling activities will occur from sunrise until 0200 (Section 10).
j. The Contractor will notify the Navy when they have reached 70% take authorization for any species, if there is an unusual uptick in sightings for a particular species, or if a species for which there is no take authorization is observed.
    - Work must stop if a non-authorized species is observed approaching the ROI.
k. Acoustic monitoring will be performed in congruence with the P-381 LOA Application (August 2022), the LOA (March 2023) and the NWP (January 2024). The Hydroacoustic Monitoring Plan which has been updated for the P-381 Night Work Proposal has been submitted under separate cover.

3. DESCRIPTION OF ROI: SHUTDOWN, LEVEL A, AND LEVEL B ZONES

The Level A and Level B harassment zones were determined by the distances calculated in the P-381 LOA Application (August 2022). The shutdown zones were determined during consultation with NMFS. To facilitate compliance with the LOA, the Contractor will implement shutdown zones as noted.

A. Shutdown Zone

Construction supervisors and crews, PSOs, and relevant Navy staff must avoid direct physical interaction with marine mammals during construction activity. If a marine mammal comes within 10 meters (33 ft) of construction activity, operations must cease and vessels must reduce speed to the minimum level required to maintain steerage and safe working conditions, as necessary to avoid direct physical interaction.

Visual monitoring will occur within the shutdown zone during all applicable activities. For some activities, the shutdown zone is larger than the Level A Harassment zone. For all other in water construction activities not listed in the LOA application (August 2022), the shutdown zone will be ten meters.

To ensure compliance with the LOA, the Contractor will implement the shutdown zones found in Table 1 below, and as listed in the LOA, for all authorized noise generating activity. During concurrent activities, the largest shutdown zone will be implemented (i.e., 200-meters for HF cetaceans and 50-meters for pinnipeds). This blanket setting of the shutdown zones will encompass all concurrent noise generating activities and provide consistency for the PSOs during the construction process due to the number of anticipated concurrent activities.

If a shutdown is required, the activities will cease as soon as safely practicable.

B. Level A Harassment Zone

Considered the “injurious” zone – If a marine mammal is observed within this zone during pile driving (vibratory and impact) and extraction, rock hammering, DTH hammer operation, and rotary drilling operations, activities will continue without cessation (unless this zone falls within the shutdown zone) and the PSOs will continue to monitor, document, and report the mammal’s activity as a Level A take.

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

C. Level B Harassment Zone

Considered the "disturbance" zone – If a marine mammal is observed within this zone during noise generating activities covered by the LOA, activities will continue without cessation and PSOs will continue to monitor, document, and report the mammal's activity as a Level B take.

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

Shutdown and monitoring zones are described within the P-381 LOA (March 2023) and in Table 1 below. Corresponding sound propagation figures are located in Attachment C of this document. Figures from the application showing the boundaries of the various harassment zones are available in the field for PSOs.

Table 1: LOA Table 2. Pile Driving Shutdown Zone and Monitoring Zones during Project Activities

LOA Year	Activity, Size, And Component	Shutdown Zone (m)		Monitoring Zone[1] (km^2)
		Harbor Porpoise	Seals	
2	Rock Hammering[2]	200	50	ROI[3]
2	Impact Pile Driving – 8 sheet piles per day	200	50	ROI[4]
2	Impact Pile Driving – 4 sheet piles per day	200	50	ROI[4]
2/3	Impact Pile Driving – 2 sheet piles per day	200	50	ROI[4]
2/3	Vibratory Pile Driving/Extraction – 8 sheet piles per day	20	10	ROI[4]
2	Vibratory Pile Driving/Extraction – 6 sheet piles per day	20	10	ROI[4]
2	Vibratory Pile Driving/Extraction – 4 sheet piles per day	15	10	ROI[4]
2/3	Vibratory Pile Driving/Extraction – 2 sheet piles per day	10	10	ROI[4]
2	DTH mono-hammer 4-6 inch relief holes	180	50	ROI[4]
2/3/4/5	DTH mono-hammer 9-inch rock anchors for tie-downs	200	50	ROI[4]
2/3/4	Rotary Drilling – 1 hour to set casings	10	10	ROI[4]
2/3/4	Rotary drilling – 9 hours to drill socket	10	10	ROI[4]
2/3/4	Rotary Drilling – 15 minutes to remove casings and temporary work trestle piles	10	10	ROI[4]
2/3/4	Cluster Drilling[2]	200	50	ROI[3,4]

Notes:
[1] In instances where the harassment zone is larger than the region of influence (ROI), the entire ROI is indicated as the limit of monitoring (see Figure 1-3 in the Navy's application).
[2] Activities will employ a bubble curtain to reduce underwater noise impacts outside of the basin.
[3] The entire ROI would be ensonified to the Level A threshold.
[4] The entire ROI would be ensonified to the Level B threshold.

D. Bubble Curtain

The contractor shall operate a bubble curtain consistent with the design and performance standards described in the LOA (March 2023). The bubble curtain will be installed across the openings of the basin to help attenuate sound for the sound sources that encompass the entire ROI and during all night operations. The bubble curtain may be discontinued for certain activities should the results of

hydroacoustic recordings inside the bubble curtain show that the source levels from those activities do not result in the Level A harassment thresholds being achieved across the entire region of influence, upon review of the data by NMFS. The PSO will note when the bubble curtain is utilized during all cluster drill and hydraulic rock hammering activities and during all night activities.

4. MONITORING MEASURES AND FREQUENCY

Visual observation monitoring from sunrise to 0200 will be conducted in compliance with the P-381 LOA and NWP. This plan covers visual observational measures only; the Hydroacoustic Monitoring Plan will be submitted under separate cover. The hydroacoustic technician and PSOs will coordinate work in the field during applicable activities. Communication will be achieved via phone or radio.

Visual Marine Mammal Monitoring Observations

Sighting data and behavioral responses to construction activity will be collected during pile driving (vibratory and impact) and extraction, rock hammering, DTH hammer operation, and rotary drilling activity. A table of authorized species and corresponding number of authorized incidental takes can be found in Table 2. PSOs will conduct a pre- and post-activity survey 30- minutes before and 30- minutes after all monitored in-water construction activities. Three PSOs will be stationed to observe for marine mammals during pile driving (vibratory and impact) and extraction, rock hammering, DTH hammer operation, and rotary drilling activities.

Table 2: LOA Table 1. Authorized Incidental Take

Common Name	Scientific Name	Stock	Level A Harassment	Level B harassment
Harbor porpoise	*Phocoena phocoena*	Gulf of Maine/Bay of Fundy	29	5
Harbor seal	*Phoca vitulina*	Western North Atlantic	2,018	4,260
Gray seal	*Halichoerus grypus*	Western North Atlantic	133	284
Hooded seal	*Cystophora cristata*	Western North Atlantic	25	25
Harp seal	*Pagophilus groenlandicus*	Western North Atlantic	25	25

A. Monitoring Within the Shutdown Zone

For 30 minutes before activity begins, during and 30 minutes after pile driving (vibratory and impact) and extraction, rock hammering, DTH hammer operation, and rotary drilling activities, PSOs will be stationed at three approved locations (wherever provides the best vantage point for the applicable event). The maximum shutdown zones from the LOA will be implemented during all pile driving (vibratory and impact) and extraction, rock hammering, DTH hammer operation, and rotary drilling activities.

The shutdown zone will be observed for 30 minutes prior to noise generating activities commencing. Work will not start until the PSO deems the shutdown zone clear of any marine mammals. In the event of a marine mammal sighting within this zone before activity begins, work will be delayed until it is determined that the animal(s) have left the area, in accordance with the issued authorization.

If, during these activities, a marine mammal is observed entering or is within the shutdown zone, work will cease as soon as it can be done so safely. Activity will not resume until the mammal is observed leaving the area of its own volition, if the animal is thought to have exited the shutdown zone based on a

determination of its course, speed, and movement relative to the activity location, or has not been observed in the zone for 15 minutes.

Observation of the shutdown zone will continue 30 minutes after activities have concluded.

PSOs will have direct contact with work crews via radio/phone to clearly communicate marine mammal sightings and the requirement to shut down operations if a mammal enters or approaches the shutdown zone.

B. Level A and Level B Harassment Zones

The Level A and Level B harassment zones will be monitored for marine mammal activity during pile driving (vibratory and impact) and extraction, rock hammering, DTH hammer operation, and rotary drilling activities. For all in-water construction activities, a three PSO team will be stationed at a pre-approved monitoring location sufficient to monitor the harassment and shutdown zones. If a marine mammal is observed within a harassment zone, but is not within the shutdown zone, work will continue without cessation and information on the animal will be recorded on the data sheet as a take of that specific species. Observation of the harassment zones will start 30 minutes prior to any pile driving (vibratory and impact) and extraction, rock hammering, DTH hammer operation, and rotary drilling efforts and will continue 30 minutes after activities have finished.

C. Monitoring Locations and Adverse Weather

If weather conditions prevent PSOs from viewing the entire shutdown zone, pile driving (vibratory and impact) and extraction, rock hammering, DTH hammer operation, and rotary drilling activity will be curtailed until observers are confident marine mammals within the shutdown zone could be detected. If an activity has already begun, work will continue until the activity can be halted safely. At least one PSO will be stationed on site at a vantage point to always see the entirety of the shutdown zone during pile driving (vibratory and impact) and extraction, rock hammering, DTH hammer operation, and rotary drilling operations. PSO viewing stations are the following possible vantage points (Figure 1, Figure 2).

- Sunrise to sunset (Figure 1)
    - Portsmouth Naval Shipyard:
        - Berth 1
        - Berth 2
        - Berth 11
        - Berth 12
        - Boat within the project limits
    - Four Tree Island
    - Prescott Park
    - Steamship Company
    - Pierce Island
    - Harbor Walk Park
- Sunset to 0200 (Figure 2)
    - Portsmouth Naval Shipyard:
        - Berth 1a
        - Berth 1b
        - Berth 11
        - Berth 12

Figure 1: LOA Application Figure 11-1. Potential Vantage Points for Protected Species Observers

Figure 2: NWP Figure 1. Proposed Night Work PSO Locations

5. EQUIPMENT

PSOs will be equipped with the items listed below to enable them to report accurate data regarding marine mammal sightings and work activities being performed during both sunrise to sunset and nighttime operations. Additional nighttime equipment is described in the Night Work Procedure section of this plan (Section 10).

- Binocular
- Range finder
- Compass
- Tablet
- Paper datasheets (as a backup for recording data)
- Radio/Phone

PSOs will use range finders to determine distances of fixed objects within the harassment zones to aid in marine mammal sighting documentation. Distances to animals will be based on the best estimate of the PSO, relative to the known distances to fixed objects near the mammal and PSO. Bearing to animals will be determined using a compass.

6. COMMUNICATIONS PLAN AND PROCEDURES

All new PSOs will be approved by the Navy and NMFS. The responsibility of the lead PSO will be to oversee orientation of new PSOs to the jobsite and the duties associated with marine mammal monitoring (including reporting, communication, etc.). The Lead PSO will have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization. The Lead PSO will be designated via identification of their status as Lead PSO on resumes submitted to the

Navy for approval. The Contractor will identify multiple qualified Lead PSOs to assure adequate coverage of a Lead PSO on shift each day monitoring is required.

Every shift that in-water noise generating activities are anticipated, three PSOs will be stationed at approved locations to best view the entire ROI.

At least one PSO will be stationed on Berth 1 of the project site and will be in constant communication with construction crews and other PSOs during their shift. It will be their responsibility to alert the pile driving (vibratory and impact) and extraction, rock hammering, DTH hammer operation, and rotary drilling crews of any protected species observed entering or approaching the shutdown zone. It will also be the duty of this PSO to communicate any instances where work will be delayed or ceased to the appropriate crews and inform them when they may resume activity. This may include, but is not limited to, a sighting of a marine mammal entering or within the shutdown zone before or during applicable work activities, to adjust artificial lighting after sunset, or inclement weather preventing the shutdown zone from being viewed. The supervisor for each activity, or PSO located on Berth 1 (depending on if the Berth 1 PSO has a sufficient vantage point), will oversee recording start/stop times of activities, construction type, and piling materials and will provide this information to Navy via approved sighting form (Attachment D) in either electronic or paper format. The Berth 1 PSOs primary responsibility is to observe marine mammals, the construction information they record is to aid in take determination for all PSO's sightings. The second and third PSOs will be stationed at vantage points to best view the portion of the ROI located outside the basin and will be responsible for communicating the anticipated marine mammal trajectory to the PSO on Berth 1 by communicating observed marine mammal behavior, river conditions, and other notable river activities (such as fishing vessels or tankers utilizing the Federal Navigational Channel). PSOs will communicate in real time using cellphones or radios to convey mammal sightings, what construction activities are operating, and any other pertinent information regarding monitoring events. This will be the most effective method of communication between PSOs and will reduce the potential for double counts of marine mammals or missed observations.

The Contractor shall conduct briefings between construction supervisors and crews and the marine mammal monitoring team prior to the start of all pile driving (vibratory and impact) and extraction, rock hammering, DTH hammer operation, and rotary drilling activities and when new personnel join the work. These briefings would explain responsibilities, communication procedures, marine mammal monitoring protocols, and operational procedures.

Additionally, the Contractor will provide the Navy with a verbal overview of observations and take counts during weekly project progress meetings. Any concerns related to level of take achieved or construction operations in relation to mammal behavioral observations will be voiced at that time and forwarded to the appropriate Navy Environmental Staff for review and appropriate follow up.

7. DATA COLLECTION AND REPORTING

Data collection by the PSOs will be completed with the PSO sighting form and daily construction tracking log (Attachment A) in either electronic or paper format. Information collected will include but is not limited to:

- PSO name
- PSO location

- Activity at the time of sighting
- Estimated observed distance
- Distance and location of each observed marine mammal relative to the in-water construction activities
- Date and time that pile driving (vibratory and impact) and extraction, rock hammering, DTH hammer operation, and rotary drilling events begin and end
- Construction activities occurring during each observation period
- Noise type (pile driving (vibratory and impact) and extraction, rock hammering, DTH hammer operation, and rotary drilling)
- Type of pile or casing and size
- Amount of time pile driving (vibratory and impact) and extraction, rock hammering, DTH hammer operation, or rotary drilling
- Weather parameters (e.g., percent cover, visibility)
- Water conditions (e.g., sea state, tidal state [incoming, outgoing, slack, low, and high])
- Species, numbers, and if possible, sex and age class of marine mammals
- Time of sighting
- Marine mammal behavior patterns observed, including bearing and direction of travel, and if possible, the correlation to SPLs
- Distance and bearing of marine mammals to activities and marine mammals to the observation point
- Locations of all marine mammal observations
- Estimated amount of time the marine mammal spent in the Level A, Level B or shutdown zone and closest point of approach
- Other human activity in the area
- Bubble curtain operations

PSOs will note all behavioral observations to the extent practicable if an animal has remained in the area during construction activities. Therefore, it may be possible to identify the same animal or if different individuals are being taken.

Monitoring Reports

Daily logs will be submitted to the Navy within 48- hours of every monitoring event. Observations occurring during monitoring will be documented and will include all the information specified below. Information will be submitted to the Navy and reviewed as a team for quality control once a week. Information collected will include at minimum:

1. General data listed above
2. Pre-activity observational survey-specific data:
    - Date and time activities initiated and terminated
    - Description of any observable marine mammal behavior in the immediate area during monitoring
    - Actions performed to minimize impacts to marine mammals
3. During activity observational survey-specific data:
    - Description of all observable marine mammal behavior within monitoring zone
    - Description of observable marine mammal behavior in the immediate area surrounding monitoring zone
    - If possible, the correlation to underwater sound levels occurring at the time of this observable

behavior
- Actions performed to minimize impacts to marine mammals
- Times when activity stopped due to presence of marine mammals within the shutdown zones and time when activity resumes
- Total duration of driving time or removal time for each pile (vibratory driving) Number, amount, and type of piles that were driven or extracted, and method type (i.e. impact, vibratory, DTH, rotary drilling, rock hammering)
- Duration of impulsive/continuous for impact/rotary drilling
- Number of strikes during impact driving events for impact hammer use
- Duration of DTH use-combination impulsive and continuous

The number of strikes for each pile (impact driving) and DTH strike rate will be recorded with hydroacoustic monitoring. The Hydroacoustic Monitoring Plan has been updated for the P-381 Night Work Proposal has been submitted under separate cover.

4. Post activity observational survey-specific data:
   - Results, which include the detections of marine mammals, species and number observed, sighting rates and distances, and behavior reactions within and outside the monitoring zones.
   - Cumulative number of takes
   - Quantity of rock, number and type of piles that were driven or removed and by what method.

In the event 70% of the take authorization is reached for any species the Contractor will notify the Navy.

8. RECORDINGS OF INCIDENTAL HARASSMENT TAKES SUNRISE TO SUNSET:

a. **Level A Takes**- All mammals observed in the Level A harassment zone during noise generating activities will be recorded as a take. Data on behavior of observed marine mammals within the harassment zones will be collected and work will continue unless the mammal enters the shutdown zone, at which point work will cease. The maximum shutdown zone of 200-meters for HF cetaceans and 50-meters for pinnipeds will be implemented during concurrent noise generating activities.

b. **Level B Takes**- All mammals will be documented when an animal enters the ROI during all noise generating activity as listed in Table 1 and as shown in the figures in Attachment C. Takes will be recorded according to the requirements of the issued LOA for P-381.

Details for recording procedures for incidental harassment takes from sunset to 0200 can be found in Section 10 of this document.

9. REPORTING OF DEAD OR INJURED MARINE MAMMALS

In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by the issued LOA, such as serious injury or mortality, work must halt immediately. The incident must be reported to NAVFAC Natural Resource Manager (NRM) Ian Trefry 603-312-8487 or NAVFAC Installation Environmental Program Director Kari Moore (207) 438-4352 who will report the incident to NMFS in accordance with the LOA. In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the Navy must report the incident to the Office of Protected Resources (OPR), NMFS (PR.ITP.MonitoringReports@noaa.gov and the NMFS

analyst at ITP.tyson.moore@noaa.gov) and to the Greater Atlantic Region New England/Mid-Atlantic Regional Stranding Coordinator (978-282-8478 or 978-281-9291) as soon as feasible. If the death or injury was clearly caused by the specified activity, the Navy must immediately cease the activities until NMFS OPR is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of this LOA. The Navy must not resume their activities until notified by NMFS.

The report must include the following information:

- Date, time, and location (latitude/longitude) of the first discovery (and any subsequent updated information)
- Description of the incident, including circumstances under which the animal was discovered
- Environmental conditions (wind speed and direction, BSS, cloud cover, and visibility)
- Description of all marine mammal observations and active sound source use in the 24 hours preceding the event
- Species identification or description of the animal(s) involved
- Condition of the animal (including carcass condition if the animal is dead)
- Observed behaviors of the animal if alive
- Photographs or video footage

10. NIGHT WORK PROCEDURES

Night Work Overview

The nighttime PSO observation procedures detailed below will only apply for work that will be performed from sunset to 0200. Activities approved for night work are provided in Table 3. Additional information pertaining to in-water nighttime operations can be found in the P381 In-Water Night Work Proposal that was provided to NMFS on January 19th, 2024.

Table 3: NWP Table 2. LOA Activities Proposed for Night Work

Activity Method	*Size and Type of Material*	*Total # of Items Authorized*	*# Complete to Date*	*# Remaining*	*Location of Activity*
Rotary Drill	84-inch casing	112	0	112	DD1 N; DD1 W
	84-inch socket	36	0	36	DD1 N; DD1 W
	102-inch casing	232	0	232	CW; DD1 N; DD1 W; B11 Face; B1 Face
	102-inch socket	116	0	116	DD1 N; DD1 W; B11 Face; B1 Face
	126-inch casing	92	0	92	DD1 N; DD1 W
	126-inch socket	46	0	46	DD1 N; DD1 W
DTH Cluster Drill	72-inch shaft	16	0	16	DD1 W
	78-inch shaft	78	0	78	DD1 N; DD1 W; CW; B11 Face; B1 Face
	84-inch shaft	40	0	40	DD1 N; DD1 W
	108-inch shaft	46	0	46	DD1 N; DD1 W
Vibratory Hammer	28-inch Z-sheet	596	0	596	Berth 1; CW, CW-E; DD1 N; DD1 W
DTH Mono-hammer	4-6-inch Hole	924	0	924	B11 Face
	9-inch Hole	194	0	194	DD1 N; DD1 W; CW

Notes: CW = center wall; CW-E = center wall east; WCW = west closure wall; DD1 N = Dry Dock 1 North; DD1 W = Dry Dock 1 West; B1 Face = Berth 1 Face; B11 Face = Berth 11 Face.
I/R: Install/Remove
*See Appendix F for a breakdown of requested activities.

PSO Night Work Locations

Three PSOs (Figure 3) will be employed to view the shutdown zones. The Contractor will identify multiple qualified Lead PSOs to assure adequate coverage of a Lead PSO for each shift monitoring is required. To ensure accessibility and safety during nighttime hours, PSOs will be stationed within the confines of the PNSY, and no off-yard sites will be utilized. PSOs will not be stationed at approved off yard observation locations during night work for two reasons; Four Tree Island, Prescott Park, and Pierce Island are not open to the public from sunset to sunrise and, there are safety concerns for PSOs monitoring from public locations in the dark.

The PSOs will follow the means and methods of observing, documenting, and communicating information with the crews in real time as described in Section 6 and Section 7 of this document.
The night locations the PSOs will monitor from have been selected to maximize the ability of the PSOs to view the shutdown zones. The shutdown zones are located within the Super Flood Basin, the immediate area outside the basin along Berth 11-C and beyond the existing floating security barrier (Figure 4, Figure 5).

Two PSOs will be stationed at Berth 1, which will provide the best vantage point for viewing the Super Flood Basin (Figure 4) and the entrance area. The first PSO on Berth 1 will monitor the Super Flood Basin and immediate shutdown zone areas, while the second PSO will monitor the area west of the Entrance Structure. This will allow the first PSO to view the majority of the pinniped shutdown zone (50 m) and a portion of the high frequency (HF) cetacean shutdown zone (200 m), while the second PSO will monitor the remaining area of the HF cetacean shutdown zone (Figure 4). The third PSO will be positioned on Berth 11 (Figure 5) and will monitor the area of approach and HF cetacean shutdown zone outside of the basin.

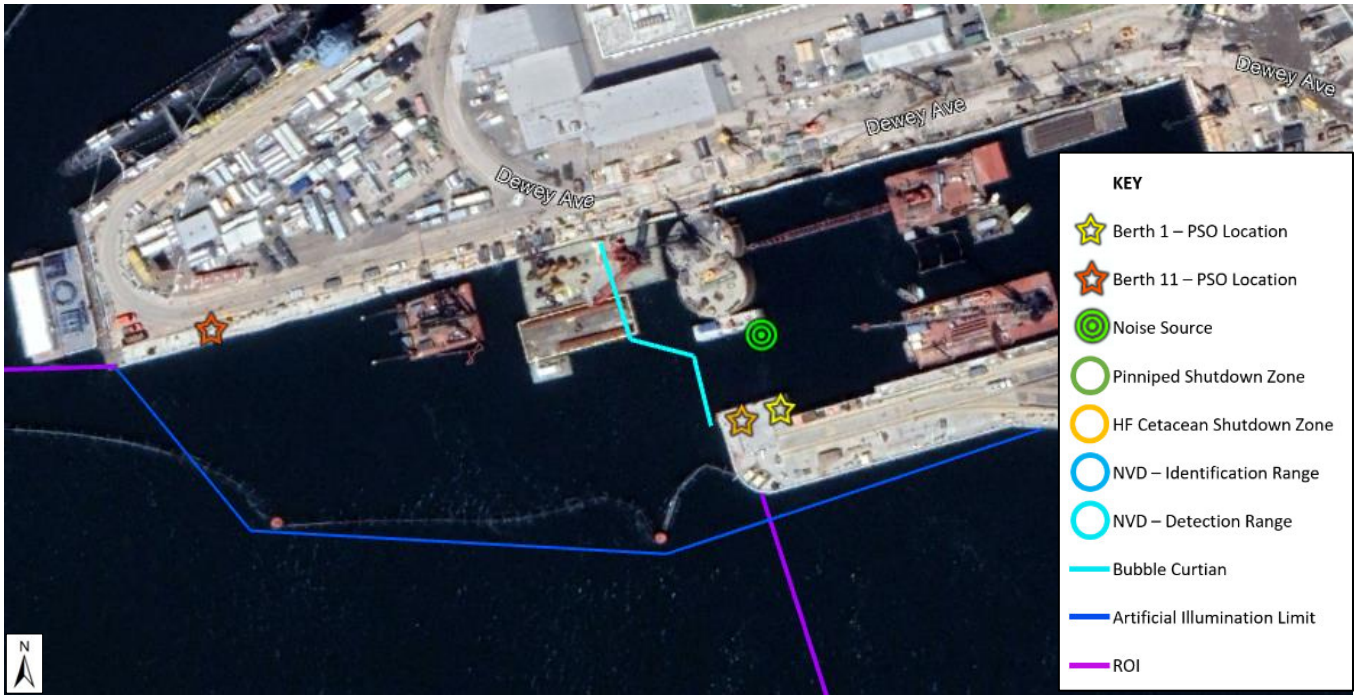
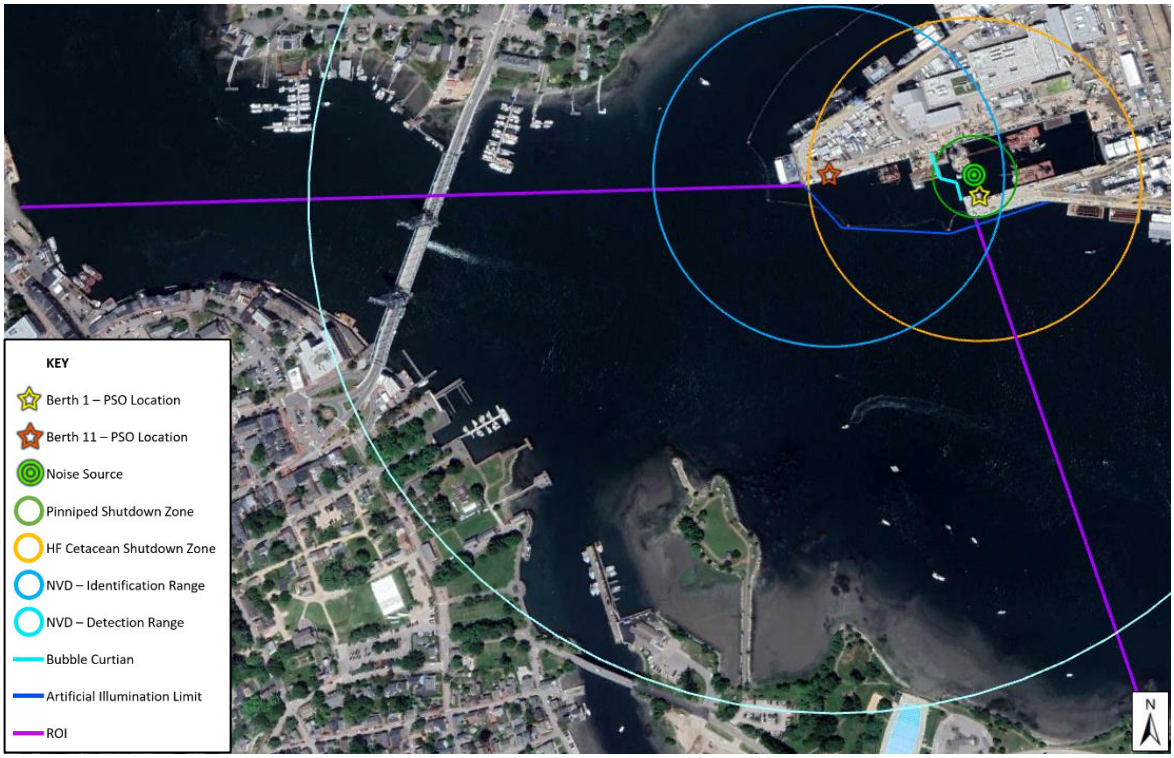


Figure 3: NWP Figure 1. Proposed Night Work PSO Locations

Note: For Simplicity, the vantage point for both Berth 1 monitoring locations is shown combined as both locations have the same vantage points

Figure 4: NWP Figure 2. Berth 1 Vantage Point



Note: For Simplicity, the vantage point for both Berth 1 monitoring locations is shown combined as both locations have the same vantage points

Figure 5: NWP Figure 3. Berth 11 Vantage Point

Monitoring Mitigations During Nighttime Operations

All monitoring and mitigation requirements noted in sections 1-9 above will be followed with adjustments to the following measures:

1. Artificial lighting will be used to illuminate the shutdown zones to the extent practicable.
2. Use of enhanced nighttime viewing technology.
3. Use of the bubble curtain during all in-water construction occurring after sunset.

A. Artificial Lighting

The Super Flood Basin and the area within the floating security barrier (approx. 250 feet south of Berth 11-C) will be illuminated with light plants located on work platforms and along Berth 11 and Berth 1, as appropriate. The light will illuminate the entire shutdown zone for phocid pinnipeds (50 meters) and a substantial area beyond the shutdown zone (i.e. area of approach). Although the light plants would not illuminate the entire shutdown zone for activities with the largest shutdown zones (DTH Cluster drilling, DTH mono hammering). The use of Night Vision Devices (NVD), in addition to the artificial lighting renders the entire shutdown zone visible, even for activities with the largest shutdown zone. At this time, the maximum observable range under artificial lighting is estimated to be 150 meters from the Berth 11 vantage point and 200 meters from the Berth 1 vantage points.

B. Enhanced Viewing Technologies

The PSOs observing nighttime operations will be equipped with an ATN OTS LT Thermal Monocular, which has dual capabilities as a high-definition (HD) and thermal monocular to identify animals approaching, or observed adjacent to, the shutdown zones. PSOs will utilize this Night Vision Device (NVD) to scan the Piscataqua River channel for marine mammal activity. As the pinniped shutdown zone will always be illuminated during night work activities, the ATN OTS LT Thermal Monocular will be used to view areas of the ROI and HF cetacean shutdown zone beyond the illuminated area. Manufacturer specifications indicate that the ATN OTS LT has a maximum working range of approximately 1847 meters depending on conditions Attachment E (recognition range of 461m, and identification range of 230 m). The maximum working ranges are greater than those proposed in the NWP (January 2023) as the contractor tested and selected a higher quality device. With the use of illumination, and the ATN OTS LT Thermal Monocular, all shutdown zones can be fully monitored. If the full extent of the shutdown zones cannot be observed, night work activities will be suspended until artificial lighting can be reinstated/provided or weather subsides, and the shutdown zones can be fully observed.

C. Bubble Curtain

To minimize impacts to marine mammal species present within the ROI, the bubble curtain will be used for all in-water noise generating activities after sunset. The contractor shall operate a bubble curtain consistent with the design and performance standards described in LOA (March 2023). The bubble curtain will be inspected and deployed at sunset to ensure it is functioning prior to nightfall as well as throughout the night.

Species Identification and Take Estimate via Extrapolation from Daytime Observations

To account for species that may not be able to be identified, may be missed between scans, and the potential inability to determine behavioral responses of marine mammals, an extrapolation method will be used. Therefore, data collected by the daytime PSOs will be used to approximate the species and takes for areas that cannot be monitored during nighttime operations.

A. Take Estimate and Species Identification

During night work monitoring, the contractor will estimate any additional takes that may have occurred in addition to direct observations made by PSOs. Due to low to no light and visibility conditions, it is logistically infeasible for the PSOs to monitor the full ROI during proposed night construction. With the use of measures described above, PSOs will monitor appropriate shutdown zones at night, but cannot confidently watch for marine mammals at larger Level A or Level B harassment distances.

To compensate for this situation, takes of marine mammals beyond the observable area will be extrapolated for night construction by calculating the percentage of time associated with night construction against the total construction duration for a given reporting period (i.e., 25% of total construction occurred at night). Documented Level A or B takes from PSOs will be assumed to correspond to the same percentage of project takes during this same period (i.e., an additional 25% of takes was not captured through full monitoring of the ROI). This additional percentage will be applied to the observable take count and used to determine additional, or extrapolated, take.
For example, if 40 hours of in-water construction occurred during a one-week period with 10 hours having occurred at night and 30 hours having occurred during the day, then 75 percent of the work occurred during the day when the ROI was fully monitored, and 25 percent occurred at night. Therefore, if there were 20 harbor seal takes observed during the day that would account for 75 percent of the takes for the period, and an additional 5 harbor seal takes (25 percent) would be applied for the night work for that period. This is in addition to confirmed observed takes sighted during nighttime operations.

All reporting will follow the 48-hour submittal timeline outlined below and will provide observed take, extrapolated take, and total estimated take.

11. QUALITY CONTROL

The data collected during each shift will be reviewed by a Lead PSO, at the end of the monitoring shift and submitted to the Navy within 48 hours for further review and archiving purposes.

PSO logs and construction logs will be checked for the following:

- Construction tracking records align with NMFS terminology.
- Forms have been filled out fully and appropriately.
- All information is collected and accurately represents the observations and activities of the shift.

The reviewer will provide their signature on the reporting form as part of the quality control for monitoring and construction data. This will ensure that all information submitted will be available for further review and take estimates can be tracked in a timely manner.

12. REPORTING

Per LOA (March 2023) requirements, a draft report will be prepared and submitted to NMFS within 90 days after each activity year of this project. Within 30 days of receiving comments from NOAA on the draft report, a final report will be prepared and submitted to NMFS. The draft and final reports will include information collected on the daily sighting forms, construction tracking logs, and acoustic reports such as:

- Locations of all marine mammal observations
- Other human activity in the area
- Actions performed to minimize impacts to marine mammals

- Detections of marine mammals
- Species and number observed
- Sighting rates and distances
- Behavioral reactions in/near harassment and shutdown zones
- Total number of marine mammal takes recorded throughout course of construction
- Information on marine mammal monitoring periods (dates/times and weather conditions).
- Details concerning construction activities.

13. PROTECTED SPECIES OBSERVER QUALIFICATIONS

The Contractor will utilize PSOs who have no other construction-related tasks and who have been trained or have experience in identifying marine mammals and completing observations utilizing the reports and parameters identified in this plan. PSO qualifications will meet the general education/experience and training recommended by NOAA Fisheries in the National Standards for Protected Species Observers. The Contractor is responsible for ensuring PSOs meet these minimum qualifications and will submit PSO candidate resumes for approval by the Navy and NMFS prior to monitoring independently. The lead PSO must have prior monitoring experience performing the duties of a PSO during a construction activity pursuant to a NMFS-issued incidental take authorization. The PSOs will rotate shifts and coordinate breaks to reduce the chance of potential fatigue. PSOs will have the ability to communicate in real time with operations supervision to relay the location of marine mammals and any potential concerns or take situations.

Attachments

Attachment A – Visual Monitoring Report Forms

Project Name: PNSY - P381	PSO:	Page: of
PSO Location:	Lead PSO Info: 207-614-4240	Date: / /

Weather							
AM	Time:	Wind Spd/Dir:	Temp (F):	Cld Cover (%):	Humid (%):	BSS:	Visibility:
PM	Time:	Wind Spd/Dir:	Temp (F):	Cld Cover (%):	Humid (%):	BSS:	Visibility:

Construction Acitvity Info					Marine Mammal Observation Info					
Event Info		Material Used	Time of Event	Tidal State	Species Code	Distance and Bearing from PSO (m and deg)	# Animals & Sex (min/max/best est)	Movement Relative to Noise	Behavior Code - Note Any Change in Behavior	Take Types & Number
Start of Day, End of Day, Sighting, Delay, Other	Install Remove	42-inch, 9-inch, 4-6-inch, 102-inch, 28-inch, N/A	:			m	/ /	Towards, Away, Parallel		A: ______
			:			deg	___M, ___F, ___UNK ___AD, ___JV, ___UNK			B: ______
Start of Day, End of Day, Sighting, Delay, Other	Install Remove	Circle activity during sighting. 42-inch, 9-inch, 4-6-inch, 102-inch, 28-inch, N/A	:			m	/ /	Towards, Away, Parallel		A: ______
			:			deg	___M, ___F, ___UNK ___AD, ___JV, ___UNK			B: ______
Start of Day, End of Day, Sighting, Delay, Other	Install Remove	42-inch, 9-inch, 4-6-inch, 102-inch, 28-inch, N/A	:			m	/ /	Towards, Away, Parallel		A: ______
			:			deg	___M, ___F, ___UNK ___AD, ___JV, ___UNK			B: ______
Start of Day, End of Day, Sighting, Delay, Other	Install Remove	42-inch, 9-inch, 4-6-inch, 102-inch, 28-inch, N/A	:			m	/ /	Towards, Away, Parallel		A: ______
			:			deg	___M, ___F, ___UNK ___AD, ___JV, ___UNK			B: ______
Start of Day, End of Day, Sighting, Delay, Other	Install Remove	42-inch, 9-inch, 4-6-inch, 102-inch, 28-inch, N/A	:			m	/ /	Towards, Away, Parallel		A: ______
			:			deg	___M, ___F, ___UNK ___AD, ___JV, ___UNK			B: ______
Start of Day, End of Day, Sighting, Delay, Other	Install Remove	42-inch, 9-inch, 4-6-inch, 102-inch, 28-inch, N/A	:			m	/ /	Towards, Away, Parallel		A: ______
			:			deg	___M, ___F, ___UNK ___AD, ___JV, ___UNK			B: ______
Start of Day, End of Day, Sighting, Delay, Other	Install Remove	42-inch, 9-inch, 4-6-inch, 102-inch, 28-inch, N/A	:			m	/ /	Towards, Away, Parallel		A: ______
			:			deg	___M, ___F, ___UNK ___AD, ___JV, ___UNK			B: ______
Start of Day, End of Day, Sighting, Delay, Other	Install Remove	42-inch, 9-inch, 4-6-inch, 102-inch, 28-inch, N/A	:			m	/ /	Towards, Away, Parallel		A: ______
			:			deg	___M, ___F, ___UNK ___AD, ___JV, ___UNK			B: ______

Other Monitoring Notes:	Comments: Please include how many items were installed/removed for each activity.
Was there noise making today? Yes / No	
Did you have any marine mammal sightings today? Yes / No	
Was the bubble curtain used today? Yes / No	

Attachment B – List of PSOs Names, Resumes and Certifications

PSO	PSO Status	NMFS Approval Date	Project Status
Babineau-Carter, Molly *Formerly Molly Erikson	Lead PSO	June (2022)	Active
Barton, Sierra	PSO	October (2022)	Inactive
Bilbrey, Amanda *Formerly Amanda Colombo	PSO	April (2023)	Active
Bushey, Ethan	Lead PSO	November (2022)	Active
Castrucci, Austin	PSO	April (2023)	Active
Cunningham, Iris	PSO	June (2023)	Inactive
Downs, Chloe	Lead PSO	September (2021)	Active
Dumm, Paige	PSO	June (2023)	Active
Hallett, Theodore,	Lead PSO	January (2020)	Active
Kelly, Brian	PSO	May (2022)	Inactive
Metzler, Christina	PSO	April (2023)	Inactive
Rancourt, Sabrina	Lead PSO	April (2017)	Active
Salcedo, Camden	PSO	March (2024)	Active
Wyman, Stephen	Lead PSO	June (2021)	Active

Molly Erickson

EDUCATION

University of New Hampshire, Durham, NH In Progress
Marine Biology M.S.
Advisor: Dr. Elizabeth Harvey
Topic: Seasonal Variability of Phytoplankton Population Dynamics
GPA: 4.00

University of New Hampshire, Durham, NH May 2020
Bachelor of Science in Marine, Estuarine, and Freshwater Biology
GPA: 3.71

Relevant Coursework: Biological Oceanography, Ecology of Aquatic Invasive Species, Elasmobranchs and Bony Fishes, Aquatic Botany, Limnology, Introduction to Marine Biology, Marine Biological Investigations, Undergraduate Ocean Research, Vertebrate Morphology, Animal Physiology, Applied Biostatistics, Experimental Design, Introduction to R Statistical Software, Data Science with R for the Life Sciences, Geographical Information Systems (GIS) for Earth and Environmental Systems

Awards: Dean's Scholarship, Civil War Memorial Scholarship, Dickie Scholarship

PUBLICATIONS

Erickson, M.R., and Harvey, E.L. "Seasonal Variability of Phytoplankton Population Dynamics in Coastal New Hampshire" *(in preparation)*

Winter, T.A., Erickson, M.R., Hamel, O., Vajda, Z.B., and Harris, L. "Exploration into Efficient and Inexpensive Methods of Aquaculture for the Green Sea Urchin, *Strongylocentrotus droebachiensis*" *(in preparation)*

Winter, T.A., Moline, S., Erickson, M.R., Dean, M., and Harris, L. "Determining optimal conditions for aquaculture of *Strongylocentrotus droebachiensis* through nutritional, behavioral, and larval studies*" (in preparation)*

FUNDING

School of Marine Sciences and Ocean Engineering, University of New Hampshire 2021- $1450

University of New Hampshire Sea Grant 2018-2020- $1000

PRESENTATIONS

Seasonal Variability of Phytoplankton Population Dynamics in Coastal New Hampshire- University of New Hampshire Department of Biological Sciences Graduate Student Seminar Series 2021

Determining Optimal Methods for the Aquaculture of Strongylocentrotus droebachiensis- University of New Hampshire Undergraduate Research Conference 2019

NEAq Internship Experience: Freshwater Gallery- New England Aquarium Intern Conference 2019

RELEVANT EXPERIENCE

Graduate Teaching Assistant 20 Hours/Week

Introduction to Marine Biology August-December 2021

Biological Oceanography August-December 2021

Animal Physiology February-May 2021

Comparative Morphology and Biology of Vertebrates September-December 2020

- Developed laboratory curriculum, lectured, graded assignments, monitored lab practicals, communicated with students

Undergraduate Ocean Research September 2018-May 2020

- Performed nutritional and behavioral research of *Strongylocentrotus droebachiensis* to determine optimal growth conditions for aquaculture
- Presented research in the University of New Hampshire Undergraduate Research Conference 2019
- Publication in preparation

Maria Mitchell Aquarium (College Intern) May-August 2019, 30 Hours/Week

- Helped manage a small aquarium in Nantucket, MA
- Assisted with training a team of interns
- Collected a variety of species local to the Cape and Islands in the Gulf of Maine

- Netting, handling, and measuring fish and other species
- Led educational programs such as feeding tours and beach ecology field trips
- Educated the public on a variety of marine species and the importance of marine conservation
- Performed a variety of tasks as an aquarist such as maintaining species health and meeting their nutritional requirements

Marine Mammal Alliance Nantucket May-August 2019

- Volunteered on the rescue team for the Marine Mammal Alliance of Nantucket
- Monitored beaches for injured and dead seals, recorded deaths, reported injuries and seal population dynamics

Horseshoe Crab Surveys May-June 2019

- Participated in surveying horseshoe crab populations for the State of Massachusetts
- Monitored populations and mating pairs on Monomoy Beach, Nantucket, MA to aid in future conservation efforts

New England Aquarium (Freshwater Gallery Intern) December 2018-January 2019
25 Hours/Week

- Performed animal care at the New England Aquarium
- Worked in the Freshwater and Northern Waters Galleries: temperature measurements, cleaning tanks, raising juveniles, maintaining nutritional requirements for a diverse array of species
- Animals worked with include octopuses, anacondas, piranhas, arowanas, urchins, anemones, flounders, lobsters, cardinal tetras, electric eels, catfish, trout, and salmon

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LABORATORY AND FIELD SKILLS

- Proficient with measurement and analysis techniques used in marine, freshwater, forest, and wildlife management, such as collection/interpretation of water quality data, shoreline surveys, quadrat sampling, DBH method, salinity measurements, phytoplankton and zooplankton sampling, seining, fluorometer, flow cytometer, and FlowCam
- PCR, gel electrophoresis, cell culture, quadrant streaking isolation, media inoculation, BLAST sequence analysis, Sanger sequencing, Bradford assays, restriction digests, gene cloning
- Experience identifying a variety of organisms such as algae, seagrasses, fishes, mammals, birds, and invertebrates
- Experience with data entry, creating technical documents, computerized graphics, MS Word, PowerPoint, Excel, QGIS, ArcGIS, R, Bash, Python, and JavaScript

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Sierra Barton
[redacted]

EDUCATION

BS in Wildlife and Conservation and Biology with a minor in Animal Behavior
from The University of New Hampshire August 2018- May 2022

SKILLS AND COURSEWORK

Field Skills:

- Identification and classification of tree and shrub species
- Observe/record/report field data
- Perform Diameter at Breast Height and Tree Basal Area measurements

Lab Skills:

- ArcGIS
- Analyze and interpret results
- Microscopy
- Spectrophotometry

Additional Skills:

- Microsoft Office
- Customer Service
- Communication
- Leadership

Coursework:

- GIS
- Chemistry
- Biology
- Dendrology
- Forest and Wildlife Ecology
- Animal Agriculture

PROFESSIONAL EXPERIENCE

Barrio, Portsmouth, NH January 2022, Present

Hostess/Server

- Welcome guests in a friendly and helpful manner
- Manage seating sections and seat customers
- Respond to guests' questions in a timely manner
- Serving customers with friendly service during peak times with high volume
- Memorize food and drink menus, as well as weekly specials
- Take food and drink orders and respond to special requests from customers

The Goat, Portsmouth, NH. August 2021- November 2021

Hostess/Server

- Welcome guests in a friendly and helpful manner
- Manage seating sections and seat customers
- Respond to guests' questions in a timely manner
- Serving customers with friendly service during peak times with high volume
- Memorize food and drink menus, as well as weekly specials
- Take food and drink orders and respond to special requests from customers

Aroma Joes, Newmarket, NH May 2019-August 2021

Barista

- Collaborate with other employees to deliver friendly customer service during peak times with high volume
- Prepare sandwiches, baked good, specialty coffees and teas and served customers while paying attention to detail ensuring positive customer experience
- Maintain sanitary workstation using appropriate hygiene protocol

Kingston Recreation, Kingston, NH Summer 2018, and 2019

Summer Camp Counselor

- Work along with other counselors to execute activities and field trips for campers including trampoline parks, bowling, water parks, etc.
- Led campers between the ages of 4 and 12 in activities such as basketball, soccer, painting, talent shows, bracelet making, and more
- Enforce camp rules and appropriately work with campers who violate them

Amesbury Animal Hospital, Amesbury, MA October 2017- April 2018

Intern

- Assisted customers and patients at front desk: weighed pets, prepared paperwork for vets
- Observed surgeries on spays, neuters, euthanizing, and various dental procedures; recorded data from patient monitors during procedures as regulated by vet
- Sanitized surgical and dental equipment following standard hygiene protocol

Dunkin' Donuts, Kingston, NH June 2016-May 2018

Crew Member

- Collaborated with other employees to deliver friendly customer service during peak times with high volume
- Trained several new employees on proper protocols, operation, and maintenance of equipment as well as how to appropriately handle the cash register
- Maintained sanitary workstation using appropriate hygiene protocol

Amanda Bilbrey

Amanda.Bilbrey@kiewit.com

EDUCATION

University of Rhode Island – North Kingstown, RI
Non-Degree Graduate Work – Biology, Evolution — May 2021

Pennsylvania State University - Altoona, PA
Bachelor of Science - Biology, Concentration in Ecology — May 2019

Monroe Woodbury High School - Central Valley, NY
High School Diploma — June 2012

RELATED EXPERIENCE

Kiewit
***Environmental Manager* – Kittery, ME** — November 2022 - Present

- Watch for marine mammals during pile driving operations
- Identify and document marine mammal sightings
- Communicate sightings to other observers
- Maintain and QA/QC daily logs
- Write proposals for the client to submit to NMFS for permit changes and concurrence
- Review and collaborate on submission of annual report to NMFS
- Update environmental plans including monitoring plans
- Develop and conduct environmental protection and awareness training for staff and craft
- Review operations and ensure compliance with a variety of environmental permits
- Coordinate in-water work needs with mammal monitor schedule

Maine Audubon
***Shorebird Biologist* – Falmouth, ME** — April 2022 – July 2022

- Conduct 20+ surveys per week
- Manage 6 beaches (Kennebunkport to Old Orchard) in southern Maine
- Identify and document marine mammal sightings
- Observe endangered and protected bird species with binoculars for long periods of time
- Supervise and train project biotechnicians, interns, volunteers, public works departments and elected town/city officials
- Engage in applied research partnerships
- Superior understanding of the ESA and Migratory Birds Treaty Act regarding Piping plovers and Least Terns
- Point of contact on behalf of Maine Audubon in the coordination and collaboration of volunteers and stakeholders
- Determine management needs for birds depending on predators, nest location and adult piping plover behavior
- Track nest and fledgling success
- Negotiating and implementing management agreements with both private and public landowners
- Chair, facilitate and conduct meetings and trainings with diverse stakeholder work groups

Rhode Island Department of Environmental Management
***AIS and Water Quality Monitoring Intern*| Office of Water Resources – Providence, RI** — June 2020 – Nov 2021

- Execute 80+ surveys at unique locations (lakes/ponds/rivers) identifying and tracking aquatic invasive species
- Perform ambient river monitoring and testing (DO, SPC, Temperature, Barometric pressure, metals, Bacterial loads)
- Complete field reports for each survey; manage digital files, input data in Access database, perform QA/QC activities
- Compile, analyze and interpret complex sets of data for technical reports
- Sample for macroinvertebrates to determine stream health
- Conduct stream habitat assessments
- Coordinate with RI Department of Health to deliver cyanobacteria, metals, and bacterial samples
- Use Google Earth and GIS mapping to quantify yearly growth of invasive species
- Plan, coordinate and implement statewide planning to manage existing and new threats
- Develop strategies to prevent spread and remediate existing threats from aquatic invasive species

Amanda Bilbrey

Amanda.Bilbrey@kiewit.com

- Create and distribute outreach to increase public awareness and promote responsible actions by the public

***Naturalist* | Division of Parks and Recreation – Narragansett, RI** April 2020 – June 2020

- Conduct public education programs regarding animal life and behavior, natural resources, and conservation
- Understand and identify New England ecosystems and wildlife with a focus in Narragansett Bay
- Develop and implement environmental education classes for children and adults during a global pandemic
- Confer with Regional Manager to determine subjects and schedules for park programs
- Provide visitor services, explain regulations, answer visitor requests, needs and complaints
- Provide information about the park and surrounding areas
- Perform emergency duties to protect human life, government property, and natural features of the park
- Inspect facilities for maintenance problems and equipment failures; perform variety of maintenance tasks

Student Conservation Association | PA Department of Conservation and Natural Resources – Williamsport, PA
Crew Leader February 2018 – August 2018

- Lead a 10-person crew to perform trail and park maintenance, build new trail and invasive plant management
- Restore river and lakefront environments, conserve and restore habitats, carry out vegetative management plans
- Take inventory, distribute and maintain equipment and supplies
- Perform regular safety checks and teach members proper tool handling and maintenance
- Prepare and apply herbicides to invasive plants
- Develop and implement strategies to enhance team performance
- Conduct learning seminars which teach crew members about the environment, diversity, equity, and inclusion
- File daily paperwork on crew productiveness, safety, and accomplishments
- Manage monthly budgets, file expense reports, and make purchases for the crew as needed
- Assist in data recording and logistical planning
- Perform construction and equipment maintenance, operate heavy machinery as needed
- Consult with conservation, state and park management about projects and collaborate on management plans
- Give back to the community through service projects

VOLUNTEER WORK

Volunteer: Blackstone River Watershed Water Chestnut Pull – Pawtucket, RI June 2022
Board Member: Wood-Pawcatuck Watershed Association – Hope Valley, RI January 2021 – April 2022

- Water Quality Committee Chairwoman
- Serve on the marketing committee and the general board

SKILLS

Microsoft Office (Word, Excel, Access, Teams)
Statistical Analyses (R Statistical Package, Minitab, SPSS)
Report Preparation and Writing
Conflict Management and Resolution
Field Research Data Collection & Analysis
Navigation and GPS Data Collection
Adobe Acrobat
Mapping (Google Earth, ArcGIS)
Water & Soil Quality Analyses
Data Entry and Quality Assurance
Community Outreach and Education
Project Management

CERTIFICATIONS

Rhode Island Boating License – *State of Rhode Island* Issued June 2020 – Does Not Expire
U.S. EPA Water Quality Standards and Criteria: *Key Concepts* Issued June 2020 – Does Not Expire
First Aid/ CPR/ AED – *American Red Cross* Issued May 2018 – Expired May 2020
Safe Zone Certified – *The Safe Zone Project* Issued August 2016 – Does Not Expire

Ethan Bushey

[redacted]

Professional Website: https://ethan3847.wixsite.com/mysite/home

EDUCATION

- B.S. in Marine Biology Minor in Oceanography
- Relevant coursework: Sustainable Fisheries, Introduction to Aquatic Botany, Biodiversity and Ecology, Introductory Biology: Molecular and Cellular, Basic SCUBA, General Ecology, Chemical Oceanography, Biological Oceanography, Genetics, Statistics, Physics 1 & 2, Entomology

- Relevant coursework: Marine Mammalogy, Ichthyology, Marine Biology, Global Climate Change

EXPERIENCE

- Photographed protected marine mammals off the coast of Virginia and in the Gulf of Mexico
- Implemented necessary impact mitigation procedures outlined in a NOAA and BOEM drafted Environmental Management Plan
- Cohabitated with several other crewmembers in tight quarters for extended periods of time
- Inputted and submitted large sums of data in a timely manner using Excel

- Matched humpback whale flukes from several organizations with images on the Happywhale database
- Identified numerous marine mammal species from photographs taken during oceanic cruises
- Worked with Happywhale's citizen science program handling and processing individual submissions
- Formatted/Interpreted countless year long datasets from organizations like the Hawaii Marine Mammal Consortium, Winged Whale Research, and the University of Baja California Sur

- Assisted with coastal ecosystem monitoring programs by looking at sea star wasting disease impacts on local species
- Gathered CTD survey samples in Kachemak Bay for a long-term oceanographic data set
- Measured Blue Mussel growth from several core samples taken during an unusual recruitment event

2020

- Successfully photographed and identified humpback whales in Kachemak Bay
- Gained experience operating vessels and working with high end cameras
- Improved and reformatted a 39 year long data set of humpback whale sightings using Microsoft Excel

- Collected genetic and otolith samples from various commercial fish species
- Enhanced my understanding of the Alaskan Salmon and Black Cod industries
- Built stronger communication skills while obtaining catch information from fishing boat captains

SKILLS

- Assisted with several marine mammal necropsies
- Experience teaching children ages 10-17 in a camp setting
- Strong understanding on the importance of conservation

Proficient in identifying marine mammals in

CERTIFICATIONS

- Open water SCUBA
- Protected Species Observer (PSO)
- CPR/AED
- BOSIET (2020)
- OGUK medical for offshore work (2020)

Ethan Bushey

[redacted]

Professional Website: https://ethan3847.wixsite.com/mysite/home

a field setting

ADDITIONAL EXPERIENCE

- Honed public speaking skills, developed over the past 6 years by presenting personal research and reporting on others'
- Comfortable working with large data sets
- 68 sea days as a PSO
- Spent countless hours identifying and cataloguing butterflies as an entomology research assistant

AUSTIN J. CASTRUCCI

EDUCATION

University of New Hampshire, Durham, NH — Expected May 2023
Bachelor of Science in Freshwater, Estuarine, and Marine Biology — GPA: 3.2
Awards: Transfer Distinction Scholarship (2020)

***Relevant Coursework*:** Fisheries Biology, Environmental Pollution and Protection, Organic Chemistry, Aquaculture, Lake Ecology, Biological Oceanography, Marine Invertebrates, Ecology, Biology, Introduction to Marine Biology

Saint Mary's College of California, Moraga, CA — Graduated May 2019
Bachelor of Arts in Environmental Studies — GPA: 3.508
Awards: Cum Laude (2019), Academic Dean's List (2017-2018)

Relevant Coursework: Sedimentology & Stratigraphy, Hydrology, Wetland Ecology

SKILLS

Field Skills: Species identification of plants, identification of freshwater microorganisms, marine invertebrates, and marine mammals, use of topographic maps, use of GPS, experienced hiker in the outdoors & performing water quality analysis as a team.
Lab & Research Skills: Perform grain analysis through sieving, compilation of data on stomatal density with a t-test, analyzing the health of wetland vegetation.
Software: Microsoft Word, Microsoft Excel, Keynote/ Google Powerpoint, RobotC, & Rstudio.
Languages: Proficient in Spanish & French.
Certifications: CPR-AED certified - American Heart Association (Feb 2018-Feb 2020), Certified Open Water Scuba Diver - NAUI (Aug 2018)

RESEARCH EXPERIENCE

University of New Hampshire, Durham, NH — August 2022 - Present
Research Assistant for Norway Pond Independent Project

- Analyze 20 core samples for pigments phycocyanin, phycoerythrin and chlorophyll a.
- Screen the 20 core samples for microcystins via ELISA (enzyme-linked immunosorbent assay) antibody plates.
- Interpret the presence of pigments and concentrations of microcystins to identify historical changes and implications with respect to the current presence of cyanobacteria in Norway Pond.
- Will present findings at the URC on April 18th, 2023.

Blue Ocean Society for Marine Conservation, Portsmouth, NH — Summer 2018
Whale Behavior Researcher & Educator

- Collected spatial field data on whale behavior and other marine life including dolphins, sharks, and sunfishes using portable GPS system
- Processed data with Microsoft Excel in collaboration with other interns
- Facilitated tours and assisted in educating the public about marine science

Saint Mary's College of California, Moraga, CA — March 2017
Research Assistant for Senior Project

- Aided in setting up hidden wildlife cameras, collaborated with professor and lead undergraduate researcher identifying species
- Maintained cameras, performed routine checkups on equipment

PROFESSIONAL EXPERIENCE

Taylor Lobster Co., Kittery, ME — March 2021-Present

- Handle customers on retail floor with fulfilling orders for fish or lobsters
- Cognizant of keeping retail floor stocked, maintaining kitchen with orders and overall friendly atmosphere

- Apply general knowledge of marine natural history when requested by customers

Seacoast Science Center, Rye, NH September - October 2019

Naturalist

- Led interpretive ecology programs for school children (grades pre-K through 12) and groups, both onsite and offsite
- Applied general knowledge of the Gulf of Maine ecosystem, excellent verbal communication skills, and great enthusiasm for the marine environment

Granite State Whale Watching Co, Rye, NH Summer 2019

Deckhand

- Aided in documenting whale sightings and assisted interns and naturalists in recording whale behavior
- Performed routine rounds on boat to ensure the safety of the passengers and crew in all sea conditions, and performed basic seamanship

IRIS CUNNINGHAM

[redacted]

Professional Experience

May 2022 - July 2023

Environmental Engineering Intern Kiewit

- Participated in an internal environmental audit of all stations and bridges on the project.

- Increased efficiency during said audit by taking detailed notes and later presenting them to the environmental manager with specific solutions to issues brought to my attention.

- Executed two incident reports regarding oil spills that occurred on both a station and a storage yard.

- Translated and distributed two toolbox talks about Labeling and Idling to all laborers and engineers working on the project.

- Analyzed three permits that were necessary to achieve permission for the commencement of the WMATA 4 Station Platforms Rehabilitation Project.

February 2023 - Present

Mailroom Associate University of Kansas

- Employed by the Physics and Astronomy Department

- Sort and recieve incoming mail for multiple science departments at the University of Kansas

Education

August 2021 - Present

Bachelor of Science in Environmental Studies University of Kansas at Lawrence, KS

Environmental Studies Major with a Geology Minor

Key Skills

- Auditing
- Environmental Permitting
- Environmental Engineering
- Organization
-

PROTECTED SPECIES OBSERVER CERTIFICATION

THIS DOCUMENT CERTIFIES THAT

Chloe Elizabeth Downs

Has successfully completed the Protected Species Observer (PSO) training course for seismic surveys in the Gulf of Mexico and US Atlantic G&G Surveys with an overall examination score of 80% or greater which complies with BOEM/BSEE basic training criteria under BOEM NTL.

Awarded this 16th day of September, 2021

Sarah Fortuna

Sarah Fortuna
Instructor

Accuracy, Integrity, Service

540 Hawthorn Street
North Dartmouth, MA
www.aisobservers.com

PAIGE DUMM

LinkedIn: https://www.linkedin.com/in/paigedumm/

[redacted] [redacted]

[redacted]

EDUCATION

The Pennsylvania State University
Bachelor of Science, Environmental Studies, graduated May 2023
Minor: Biology
GPA: 3.68 Dean's List: seven out of eight semesters

INTERNSHIP EXPERIENCE

Intern, Vida de Colores, Butterfly Conservation, San Ramon, Costa Rica June 2022 - July 2022

- Worked in educational eco-tourism providing tours to both English and Spanish speaking visitors
- Performed habitat work such as caring for native plants, trail maintenance, and removed infected plants and predators from enclosures
- Provided animal care such as butterfly/larvae/egg care and relocation, hummingbird feeding and habitat care, and care and feeding of other native bird species
- Developed a butterfly rearing and habitat guide to initiate a butterfly habitat and release program at Penn State Altoona
- Partnered with Dr. Carolyn Mahan on her field research with PennDOT to identify plant species that would be ecologically beneficial for butterflies
- Created a poster presentation to showcase internship experience to students and faculty

ACADEMIC PROJECTS

- Collected stream community data of Spring Run to examine distribution patterns of living aquatic organisms, identified the aquatic organisms using field guides, and analyzed population data
- Learned to identify marine species and their anatomy, and about ocean ecology
- Formulated two research questions, collected data, and presented findings on parental care behavior in breeding blue birds and the active parasites of fledglings for two 15-week projects
- Developed dichotomous key of local plants in Pennsylvania and learned 80+ taxonomic families of seed plants
- Performed data collection and analyses of soil and water qualities of a local sustainable family-owned farm called the Last 44 Acres
- Wrote weekly analysis of primary literature using scientific journals
- Identified local Flora and Fauna using field guides and Seek app during educational hiking trips and cataloged findings
- Researched, wrote, and presented on the deforestation of the Amazon to create the palm oil industry, farm to table apple production, and information for a short story titled *Resolutions in the Yarrow*

ENVIRONMENTAL COMPETITION

- Learned methods on how to identify species within the subjects of Aquatic Ecology, Wildlife, Forestry, Soils and Land Use, and Environmental Issues as a member of a Pennsylvania Envirothon team for Regional and State Competition in Spring 2018 and 2019

COMPUTER SKILLS

Microsoft Office, Google Suite, Photoshop, Adobe Illustrator, ArcMap, ArcGIS, RStudio, Zoom, Minitab

OUTDOOR INVOLVEMENT

hiking, camping, kayaking, swimming, birding, fishing, GPS navigation, and recording activities in a nature journal

WORK EXPERIENCE

Child Care and Animal Care, Nicktown, PA and Altoona, PA (May – August) 2016 - 2021

- Provided full-day care for children ages 1-13 for multiple families
- Entrusted to care for dogs, chickens, cats, and ducks while owners were away

Cashier, Ken's BiLo, Northern Cambria, PA July 2018 - August 2019

- Interacted with customers, provided quality customer service, and handled financial transactions

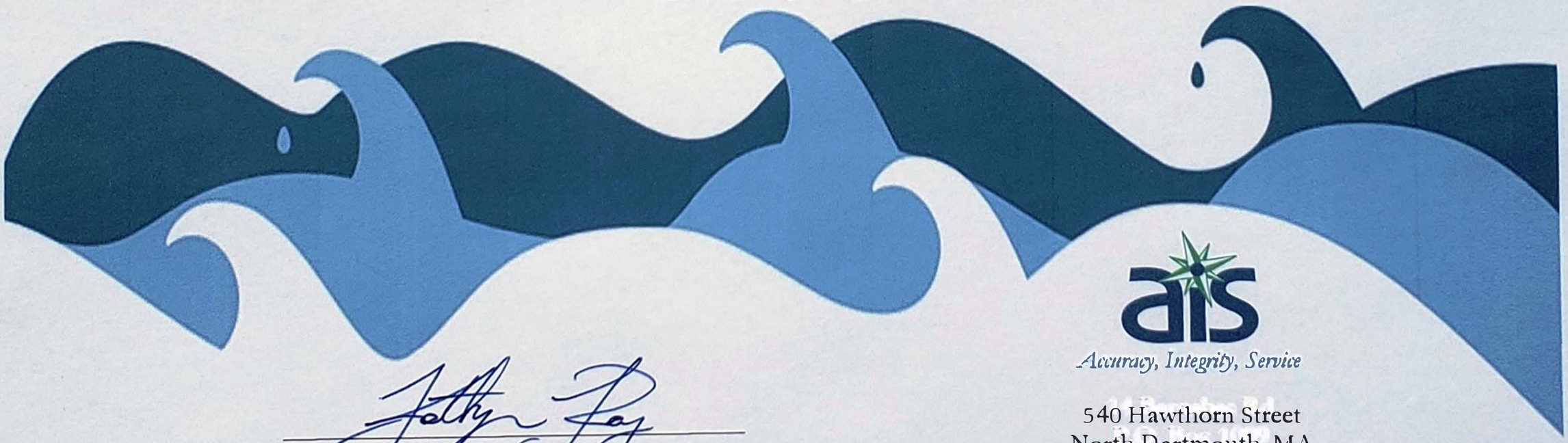
PROTECTED SPECIES OBSERVER CERTIFICATION

THIS DOCUMENT CERTIFIES THAT

Teddy Hallett

Has successfully completed the Protected Species Observer (PSO) training course with an overall examination score of 80% or greater which complies with BOEM/BSEE basic training criteria under BOEM NTL 2016-G02

Awarded this 31st day of January, 2020



Kathryn Roy
BOEM Approved Instructor

ais
Accuracy, Integrity, Service

540 Hawthorn Street
North Dartmouth, MA
aisobservers.com

Brian H. Kelly
brian.kelly1@kiewit.com
[redacted]

CAREER SUMMARY

An Environmental Management professional with over 12 years of progressive experience in both the public and private sector. Professional experience for the past 8+ years as a Project Environmental Manager on large-scale, high profile heavy construction projects for a Fortune 500 construction contractor managing environmental compliance and project permitting and implementing environmental policies, procedures, and training. 4+ years of professional experience as a regulatory and environmental scientist working for state government reviewing various types of environmental permits and conducting inter-agency coordination on coastal policies and programs. Solid background in environmental science, biology, oceanography, coastal management, and economics. Trained in stormwater and erosion and sediment control, hazardous materials and waste management, and wetland delineation. Extensive knowledge and understanding of local, state, and federal environmental regulations with significant experience in New York, New Jersey, Virginia, Maryland, Washington DC, Louisiana, Delaware, and Florida.

EXPERIENCE

Environmental Manager
Kiewit Infrastructure Company
Woodcliff Lake, NJ
July 2013 - Present

- Ensure compliance with regulatory and contractual environmental requirements for the Project and implement Kiewit's internal environmental policies and procedures.
- Manage client-owned permits, obtain contractor permits, and draft environmental compliance plans (i.e. SPCC, SWPPP).
- Perform field inspections and monitoring; develop and conduct environmental protection and awareness training with staff and craft; and carry out project environmental audits and assessments.
- Prepare Kiewit, project, and permit required reports and communication; assess and reduce environmental risks; interpret environmental specifications and drawings; and provide guidance on operational compliance.
- Coordinate with Clients and Owners on environmental issues; and interface with local, state, and federal regulatory agencies and partners (USACE, EPA, USCG, FHWA, FERC, FAA, NYSDEC, NYCDEP, NJDEP, SUSCD, VDEQ, LDNR, etc.).
- Supervise testing, handling, transport, and disposal of hazardous materials (lead-based paint, mercury, and PCBs), asbestos containing materials, contaminated soils, and hazardous waste.

Projects:

WMATA Station Rehabilitation Project, Blue and Green Lines
Washington Metro Area Transit Authority (WMATA)
Greenbelt, MD
January 2021 – Present
The WMATA Station Rehabilitation Project is a $275+ million project consisting of the reconstruction and rehabilitation of six Metro train stations as part of WMATA's Platform Improvement Project. The project includes the complete reconstruction of the platform edge and tile replacement, rehabilitating the canopies and skylights, renovating station interior rooms, improving lighting and communication systems, upgrading the shelters and passenger information displays, and removing and abating lead-based paint and asbestos containing material.

WMATA Station Rehabilitation Project, Orange Line
Washington Metro Area Transit Authority (WMATA)
Arlington, VA

January 2020 – December 2020

- The WMATA Station Rehabilitation Project is a $225+ million project consisting of the reconstruction and rehabilitation of four Metro train stations as part of WMATA's Platform Improvement Project. The project includes the complete reconstruction of the platform edge and tile replacement, rehabilitating the canopies and skylights, renovating station interior rooms, improving lighting and communication systems, upgrading the shelters and passenger information displays, and removing and abating lead-based paint and asbestos containing material.

Calcasieu Pass Liquefied Natural Gas Terminal
Venture Global Calcasieu Pass LLC
Cameron, LA
November 2019 – January 2020

- The Calcasieu Pass Project is a $2.5+ billion project to construct a 10 MTPA Liquified Natural Gas (LNG) export facility consisting of a 720 MW combined cycle gas power plant, three pretreatment trains, two 200,000 cubic meter LNG storage tanks, and two ship loading berths on a 1,000+ acre site.

WMATA Station Rehabilitation Project, Yellow and Blue Lines
Washington Metro Area Transit Authority Station (WMATA)
Alexandria, VA
January 2019 – November 2019

- The WMATA Station Rehabilitation Project was a $250+ million project consisting of the reconstruction and rehabilitation of six Metro train stations as part of WMATA's Platform Improvement Project. The project included the complete reconstruction of the platform edge and tile replacement, rehabilitating the canopies and skylights, renovating station interior rooms, improving lighting and communication systems, upgrading the shelters and passenger information displays, and removing lead-based paint.

Goethals Bridge Replacement Project
Port Authority Of New York New Jersey
Elizabeth, NJ
February 2016 – January 2019

- The Goethals Bridge Replacement Project was a $1.5 billion project consisting of two new cable-stayed bridges spanning the Arthur Kill between Staten Island, NY and Elizabeth, NJ. The project included the construction of twin 1.4-mile-long structures with 950-foot cable stayed main spans, the complete demolition of the existing Goethals Bridge, a railroad bridge replacement, interchange and local road enhancement, access road through wetlands for construction access and future maintenance and inspection, and remediation of contaminated soils (PCBs, heavy metals, and radiation).

Elizabeth River Tunnels Project
Elizabeth River Commission
Portsmouth, VA
July 2013 – February 2016

- The Midtown Tunnel Project was a $1.4 billion project consisting of a new 4,200 foot two-lane immersed tube tunnel under the Elizabeth River, rehabilitation of three existing subaqueous tunnels, a 4,300 foot elevated highway extension and associated interchange enhancements of the Martin Luther King expressway, a 3,900 foot directional drill of a 36 inch waterline under the Elizabeth River, and remediation of contaminated soils (lead and other heavy metals).

Environmental Scientist I, II, & III
Delaware Coastal Programs, DNREC
Dover, DE
January 2009 – December 2012

- Reviewed and approved federal consistency certifications for compliance as part of the CZMA Federal Consistency program.

- Conducted interagency project coordination at the local, state, regional, and national level on National Ocean Policy, Regional Ocean Planning, Coastal & Marine Spatial Planning (CMSP), the Mid-Atlantic GIS ocean data portal with the Mid-Atlantic Regional Council on the Ocean (MARCO), DE Sea Level Rise Vulnerability Assessment and Adaptation; Planned and facilitated meetings and workshops with other agencies, the private sector, and the public.
- Developed grant applications for the Coastal Management Program and completed grant reporting requirements for the South Wilmington EPA Brownfield Assessment grant.
- Assisted in field work and research on DE Bay benthic mapping, horseshoe crab research, and wetland sedimentation and subsidence research including sediment elevation tables, surveying, and radiometric coring.

EDUCATION

- M.S. Oceanography/Coastal Management
  Florida Institute of Technology, Melbourne, FL
  September 2006 - December 2008
  GPA 4.0

- B.A. Biology
  Colby College, Waterville, ME
  September 2001 - May 2005
  GPA 2.99

CERTIFICATIONS & TRAINING

- MDE – Erosion & Sediment Control Certification
- VA DEQ – Erosion & Sediment Control Plan Reviewer, Inspector, and Basic; VA DEQ – Stormwater Management and Erosion & Sediment Control Plants; VA DEQ - Responsible Land Disturber Certification.
- VA DOT – Erosion & Sediment Control Contractor Certification
- NYS DEC – Erosion & Sediment Control Card Certificate
- Envision Sustainability Professional – Institute for Sustainable Infrastructure
- RCRA / DOT HazMat Certification, Environmental Waste Management
- HAZWOPER 40 HR - OSHA
- OSHA 30
- FEMA Benefit-Cost Analysis Course certification. DEMA.
- GIS Inundation Mapping certification. NOAA.
- Wetland Delineation Training certification. Florida DEP

AWARDS

- SKW Midtown Tunnel Project – City of Norfolk Environmental Business Award of Excellence – August 2015
- SKW Midtown Tunnel Project – Governors Environmental Excellence Award – March 2015
- SKW Midtown Tunnel Project – Elizabeth River Project – Model Level Riverstar – November 2014
- SKW Midtown Tunnel Project – Virginia Environmental Excellence Program E4 Level – June 2014

CHRISTINA **METZLER**

PROFILE

- Looking for a full-time position.
- Dedicated, hardworking, self-motivated, organized
- Proficient in time management, accustomed to fast-paced environments, fast learner.

EXPERIENCE

MARCH 2022 – CURRENT
QUALITY ENGINEER, SATELLITE TOOL & MACHINE

- Perform inspections at various stages of the manufacturing process on aerospace parts.
- Evaluate and create nonconformance reports, SCARs, internal corrective actions, etc.
- Prepare for and participate in NADCAP & ISO audits.

SEPTEMBER 2018 – MARCH 2022
QUALITY ASSURANCE ENGINEER, ACME MONACO CORPORATION

- Supervise quality control inspectors and monitor overall quality of all commercial products.
- Prepare for and participate in customer & regulatory audits.
- Ensure that all documentation and processes are running in compliance with customer, state, and government regulations & standards.
- Manage customers on quality issues, product changes, and new part submissions. Manage vendors to meet quality requirements.
- Write and perform process validations and machine qualifications.
- Transpose data collection and run capability analyses.
- Prepare and distribute weekly, monthly, quarterly, & annual reports to top management.

JANUARY 2016 – SEPTEMBER 2018
QUALITY MANAGER, PLATT & LABONIA LLC

- Perform quality inspections at each point of the manufacturing process from raw material to finished product.
- Prepare for, and participate in, ISO 9001 audits and maintain facility compliance through process control and documentation.
- Assist with inventory control, shipping documentation, and design testing.
- Work with vendors to meet quality requirements.

EDUCATION

MAY 2017
MARINE BIOLOGY, UNIVERSITY OF NEW HAVEN

- Degree received in marine biology with a minor in environmental science and geology.
- Founding member of the sorority Alpha Sigma Kappa-Women in Technical Studies on my campus.
- Vice-president of Student Society of Stem Cell Research.

CHRISTINA **METZLER**

[redacted]

https://www.linkedin.com/in/christina-metzler-4b6584169/

CERTIFICATIONS

- Corrective/Preventative Action
- Root Cause Analysis
- 21st Century Leadership
- Internal Auditor ISO 9001:2015
- Internal Auditor ISO 13485:2016

*All obtained through CCSU Continuing Education

SKILLS

- 4 years of college field work
- Use of field testing equipment such as current meters, water chemical analysis, tree core samplers and sediment core sampler.
- Familiar with Microsoft Teams, RingCentral, & GoTo Meeting
- Extremely well organized with paperwork and documentation
- Experience as a project leader & organizer
- Proficient in Microsoft office, minitab, and various customer portals.
- Proficient in the use of various inspection equipment

REFERENCES

Lew Hallett	ISO Compliance Consultant-Platt & Labonia	[redacted]
Lillian Cupe	Lead Quality Inspector	[redacted]
Richard Ohidy	Quality Engineer, Alleima	[redacted]

Sabrina Rancourt

Profile: Seven years of experience overseeing environmental compliance for a general contracting firm. Lead Protected Species Observer on the Berth #11 project at Portsmouth Naval Shipyard and holding the same position on the Super Flood Project as well as the P-381 evolution. Served as a Field Engineer on the Dry Dock #3 Caisson Replacement project and DD #2 Equipment Storage Enclosure at Portsmouth Naval Shipyard. Served as a Project Engineer for the Wharf Infill and Building Removal at the International Marine Terminal project in Portland. Has a strong working knowledge of NAVFAC, OSHA and environmental regulations/compliance and permit compliance. Experienced at interacting with State/Government agencies and programs and is well versed in ensuring jobsite compliance with operating procedures.

Work Experience

April 2017 – Current	**Cianbro Corp.**	Pittsfield/Kittery, Maine
Environmental Field Manager	Duties: Assistant Environmental Manager, Spill Prevention and Response, Marine Mammal Monitoring Coordinator, Biological Survey Coordinator, Hydroacoustic Monitoring Coordinator, Material Requisition, Document Control, Dai Reports, EV Submittals, Permit Compliance, Hazardous Waste Handler, HAZWOPER Trainer	Manager: Jim Richards Lauren Walsh

Certifications

- First Aid & CPR/AED
- HAZWOPER Trainer
- ME DOT Erosion and Sediment Control
- NOAA PSO Training
- PNSY Hazardous Waste Handler
- Boat Operator
- USACOE Construction Quality Management
- ECATTS
- Scuba Diver (Master)
- AAUS Scientific Diver
- OSHA 10
- Certified Environmental Specialist

Practiced Skills

Computer Skills: Microsoft Word, Microsoft PowerPoint, Microsoft Excel, SPSS, Bluebeam Revu, Adobe Acrobat, Citrix, Intelex, Google Earth

Practical Skills: Jobsite Compliance Specialist in Health, Safety and Environmental, CTD, Hydroacoustic Monitoring, Marine Species Field Identification, Botanical/Algal Field Identification, Benchmark Testing, Jobsite Inspections, Bulk Fuel Inspections, Hazardous Waste Handling and Reporting, Incident Reporting, Literacy in Contract Specifications and Drawings, Client Relations, Management of Internal Team Members.

Education

September 2012 – May 2017 (Graduate)	**Maine Maritime Academy** Marine Biology	Castine, Maine Bachelors of Science
September 2008 – May 2012 (Graduate)	**Waterville Senior High School**	Waterville Maine

Work Experience Cont.

May 2017 – October 2017	**York's Wild Animal Kingdom**	York, Maine
Zookeeper	Duties: Enclosure Cleaning, Diets, Enrichment, Education	Manager: Gail Mercer
May 2015 – September 2016	**Brookfield White Pine Hydro LL**	The Forks, Maine
Office Attendant	Duties: Document Control, Managing Campground, Cleaning Property	Manager: Allison Frechette
January 2014 – December 2014	**Maine Maritime Academy**	Castine, Maine
Resident Assistant	Duties: Posting Important Notices, Responding to Emergencies	Manager: Crissi Dalfonzo
May 2014 – September 2014	**Northern Outdoors**	West Forks, Maine
Waitress	Duties: Cleaning, Waiting Tables, Bussing Tables, Hostess	Manager: Nellie Booth
May 2013 – September 2013	**University of Southern Maine**	Portland, Maine
Curator	Duties: Curating Genes	Manager: Clare Congdon
April 2012 – October 2012	**Magic Falls Rafting Co.**	West Forks, Maine
Whitewater Rafting Guide	Duties: Guiding, Cooking, Cleaning, Customer Help	Manager: Donna Neddeau
May 2008 – February 2009	**Beverly's Card and Gift**	Waterville, Maine
Cashier	Duties: Cleaning, Customer Help, Cashier	Manager: Brenda Gilbert

Leadership Roles

- **Work:**
  - Cianbro Management Development Program
  - Environmental Manager
  - Lead Marine Mammal Coordinator
  - Cianbro Front Line Supervisor Development

- **College:**
  - Residential Assistant

- **High School:**
  - Young Environmental Leaders Program (YELP)
  - Advanced (YELP)
  - Waterville Varsity Swim Team (Captain)
  - Waterville Ocean Bowl (Captain)

Camden L. Salcedo

EDUCATION

University of New England *Graduated May 2021* **Biddeford, ME**
Marine Affairs with minor in Aquaculture & Aquarium Science
Earned the certification of Aquatic Animal Life Support Operator Level 1

Marine Science Magnet High School *Graduated June 2017* **Groton, CT**

Earned the Certificate of Personal Watercraft Operation (Connecticut CPWO)

WORK EXPERIENCE

- **Boston Children's Hospital – Kara Maloney, 1 Blackfan Circle, Boston, MA, 02115**
  Aquaculture Specialist | Per Diem, 16 hour workweek (October 2023–Present)
- Managing *Danio rerio* populations for use in medical research with attention to life stage, dietary requirement, experimental application.
  - Perform various husbandry tasks, including spawning, in-vitro fertilization, and other procedures that involve the handing of fish.
- Performs daily oversight and operation of sophisticated recirculating aquaculture systems, life support system washers, feeding robots, and integrated electronic water quality monitoring systems, all observing standard operating procedures and safety guidelines.
  - Perform and record daily animal welfare and water quality observations, communicating adverse findings to the ARP manager and Specialist II.
- Maintain stable populations of live rotifer and artemia cultures for feeding larval fish.

Founded DroneInIt

- Created DroneInIt, a business that provides aerial imagery to customers or enterprises in the form of stock footage or customer-specified photography.
- Commissioned services may include property and utility surveys, or photo and LiDAR-enhanced mapping projects.
  This company fosters sustainable operations within the UAS community that are in compliance with National Airspace System policy, utilizing educational essays and videos that promote personal responsibility practices to current or prospective remote pilots.

New England Aquarium Services – Rick Oellers, 22 Pearl Street, Biddeford, ME, 04005
Aquarium Service Technician | 40+ hour workweek (January, 2021—June 2022)

- Conducted the design, installation, maintenance, occasional deconstruction, and husbandry of freshwater and saltwater aquariums.
  - Proficient in PVC plumbing, as well as the installation and continued maintenance of Reverse Osmosis systems.

- Oversaw the rearing and raising of freshwater and marine fish in closed systems. Propagated SPS, LPS, soft-bodied corals, anemones, and both macro and micro invertebrates such as amphipods, rotifers, and artemia.
- Installed and programmed several different light brands for varied applications, balancing color temperatures, intensities, photoperiods, and energy efficiency to ensure proper fish and coral health with minimum carbon footprint.
- Installed and effectively utilized Apex & Neptune's automated aquarium water quality computers and spill prevention monitoring units.

Work Study, University of New England – 11 Hills Beach Road, Biddeford, ME, 04005

Professor's Research Assistant—Brian Duff | 20 hour workweek
(January-May, September-December, both 2018 & 2019)

- Assisted in administering the professor's "Work Out the Vote" initiative; conducted research on the subject, created promotional materials, and performed outreach to potential partners.
- Assisted in the creation and administration of events hosted by the political science department
- Researched and reported on the voting habits of individuals connected to Vanguard and BlackRock index funds to gauge the influence of shareholders connected to these larger financial systems.

Clownfish Breeding Lab Assistant—Jeri Fox | 20 hour workweek
(September-December 2018, January-May 2019, December-January 2020-2021)

- Oversaw the rearing and raising of juvenile clownfish, cardinalfish, and coral species. Fed fish, prepared saltwater mixtures, and observed the physical and behavioral health of livestock.
- Conducted twice daily testing of water quality, with measurements recorded in IACUC approved databases. Maintained general cleanliness of operations center to preserve presentability of the working space.

DigiSpace Consultant—Jennifer Feraco | 20 hour workweek (January-May 2018)

- Assisted fellow students with any issues they may have pertaining to the digital aspects of their assignments or personal projects.
    - This included—but was not limited to: Troubleshooting and technique instruction related to Microsoft Office services, Wordpress website generation, and Audio-Video production.

Camden L. Salcedo

Harkness Memorial State Park – State Employment, 275 Great Neck Road, Waterford, CT, 06385

Seasonal Resource Assistant—Garden Division | 40 hour workweek *(April-July 2019)*

- Assisted in managing the gardens and grounds surrounding the historic mansion. This included, but was not limited to:
    - Removal of litter from the state park, planting of ornamental flora, removal of invasive species, performance of indoor and outdoor custodial duties
    - Enforcement of policies pertaining to beach use in relation to environmental conservation, particularly that pertaining to the habitat nesting Piping Plovers.

SKILLS AND ACCREDITATIONS

FAA Part 107 Drone Operator – https://droneinit.com
Aquatic Animal Life Support Level One Operator/IACUC Trained
Possessor of Connecticut's Certificate of Personal Watercraft Operation (CPWO)

Proficient in Microsoft Office Applications, Adobe Media Applications, and General Website Design & Maintenance

PROTECTED SPECIES OBSERVER CERTIFICATION

THIS DOCUMENT CERTIFIES THAT

Stephen M. Wyman

Has successfully completed the Protected Species Observer (PSO) training course for seismic surveys in the Gulf of Mexico and US Atlantic G&G Surveys with an overall examination score of 80% or greater which complies with BOEM/BSEE basic training criteria under BOEM NTL.

Awarded this 4th day of June, 2021

Sarah Fortuna

Sarah Fortuna
Instructor

Accuracy, Integrity, Service

540 Hawthorn Street
North Dartmouth, MA
www.aisobservers.com

Attachment C – Sound Propagation Figures

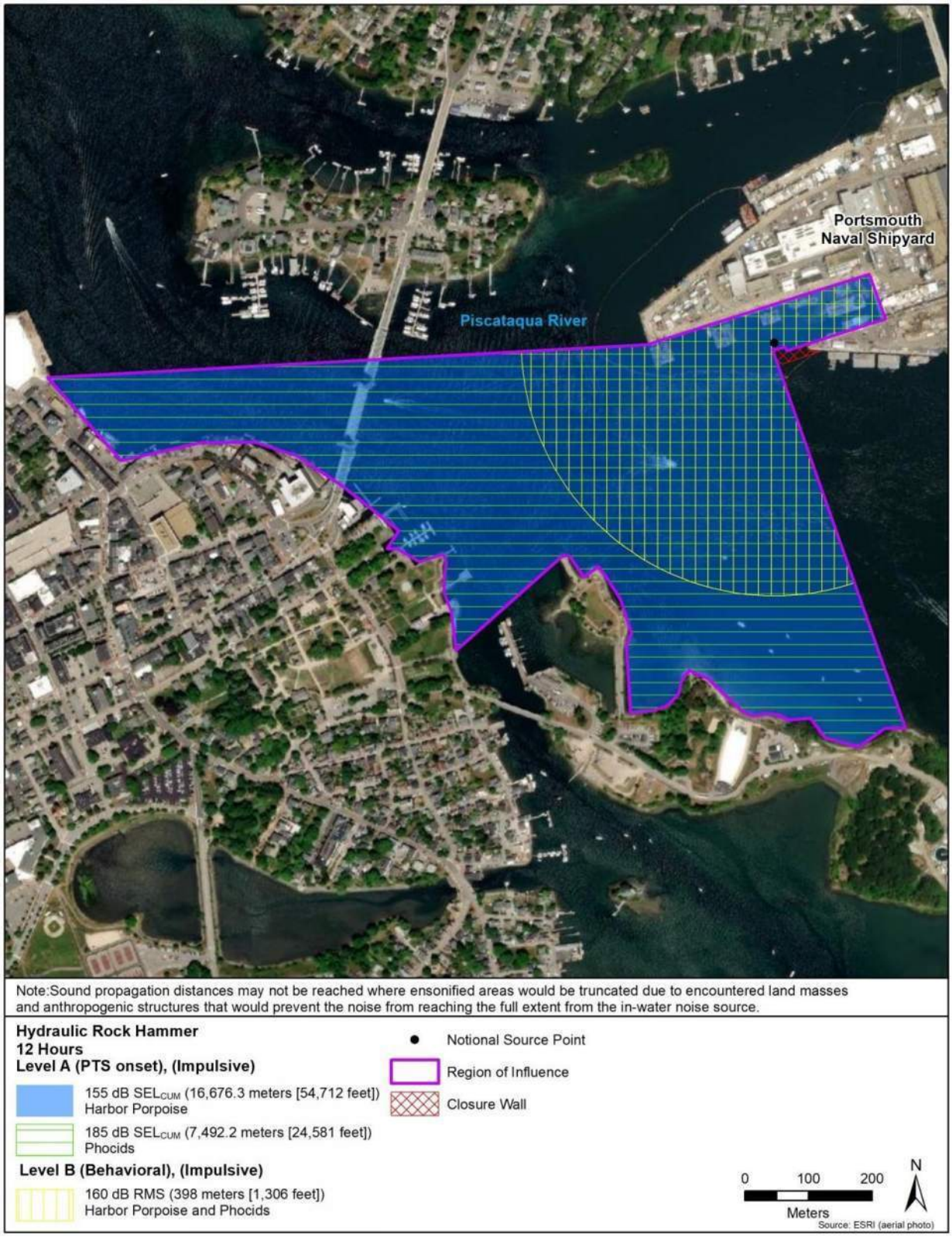


Figure 6-1 Level A Injury (PTS Onset) and Level B (Behavioral) Harassment Zones due to Rock Hammering 12 Hours/Day

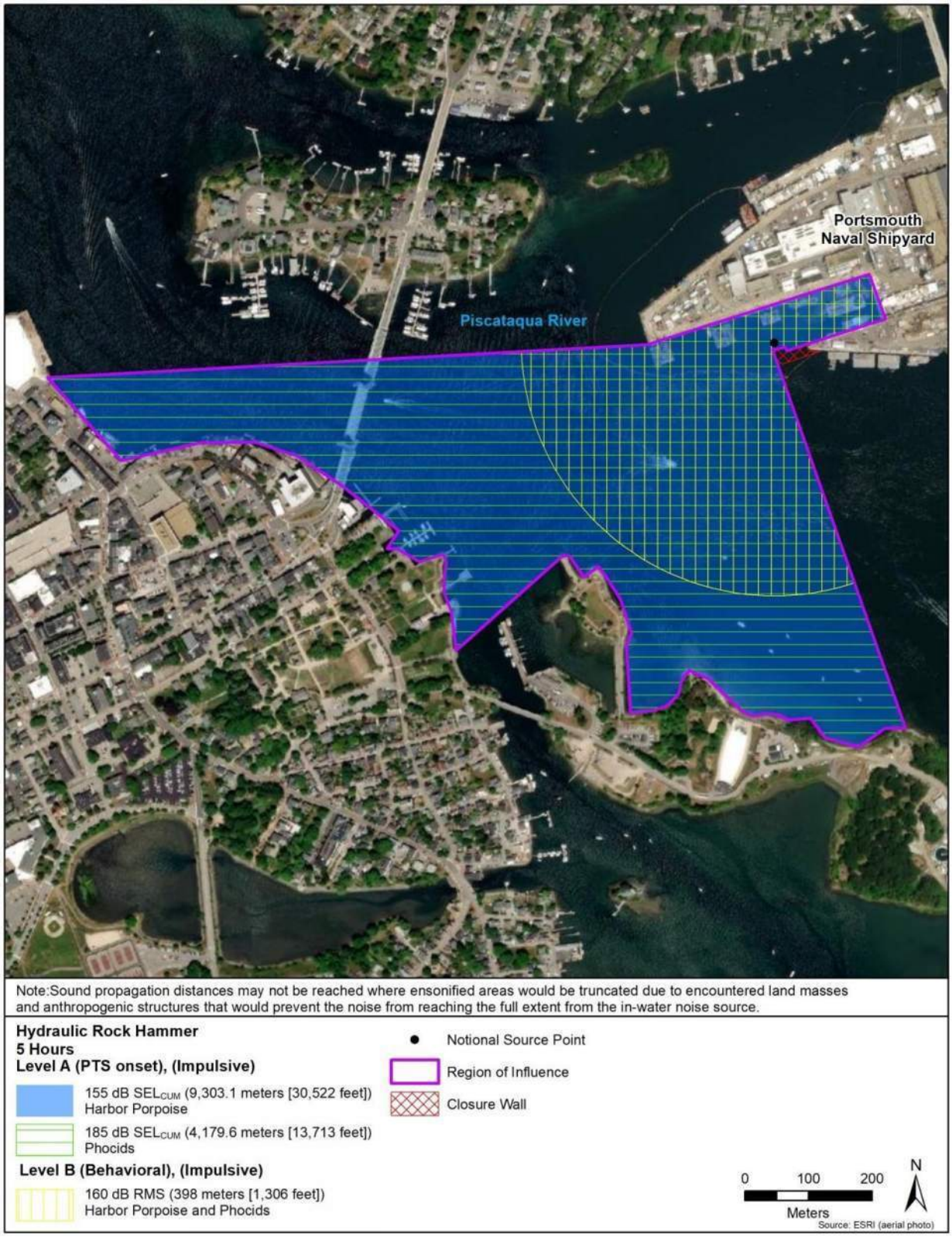


Figure 6-2 Level A Injury (PTS Onset) and Level B (Behavioral) Harassment Zones due to Rock Hammering 5 Hours/Day

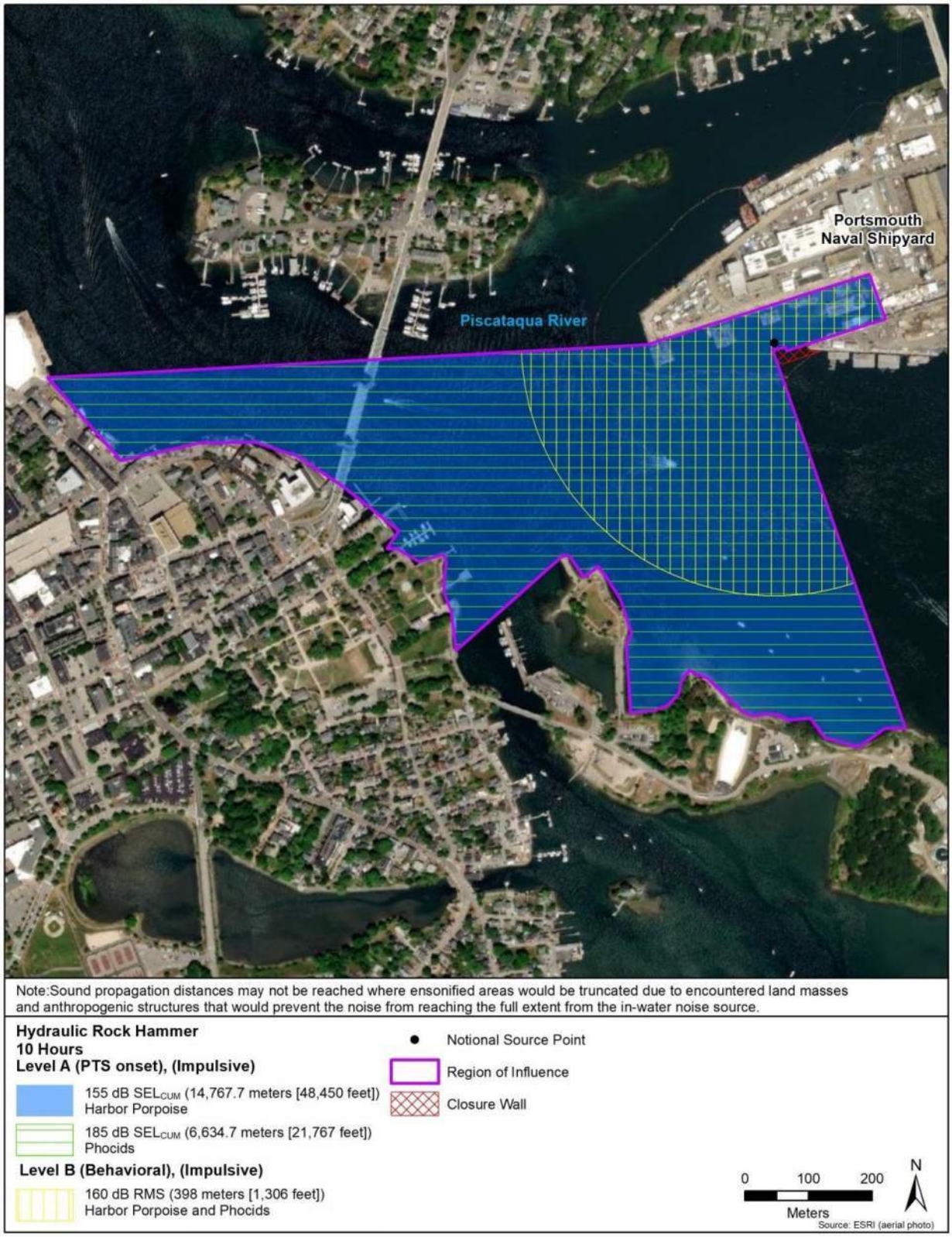


Figure 6-4 Level A Injury (PTS Onset) and Level B (Behavioral) Harassment Zones due to Rock Hammering 10 Hours/Day

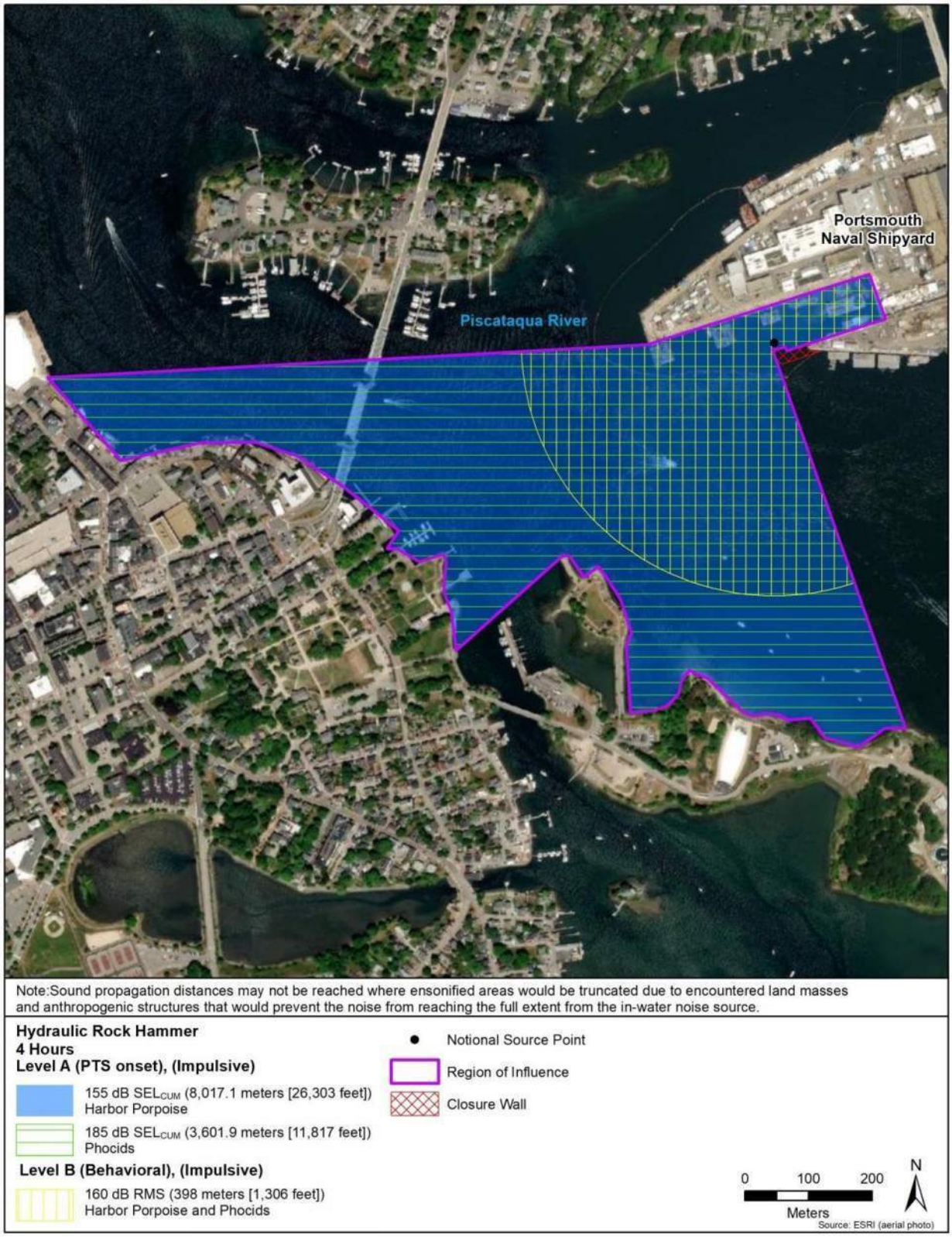


Figure 6-5 Level A Injury (PTS Onset) and Level B (Behavioral) Harassment Zones due to Rock Hammering 4 Hours/Day

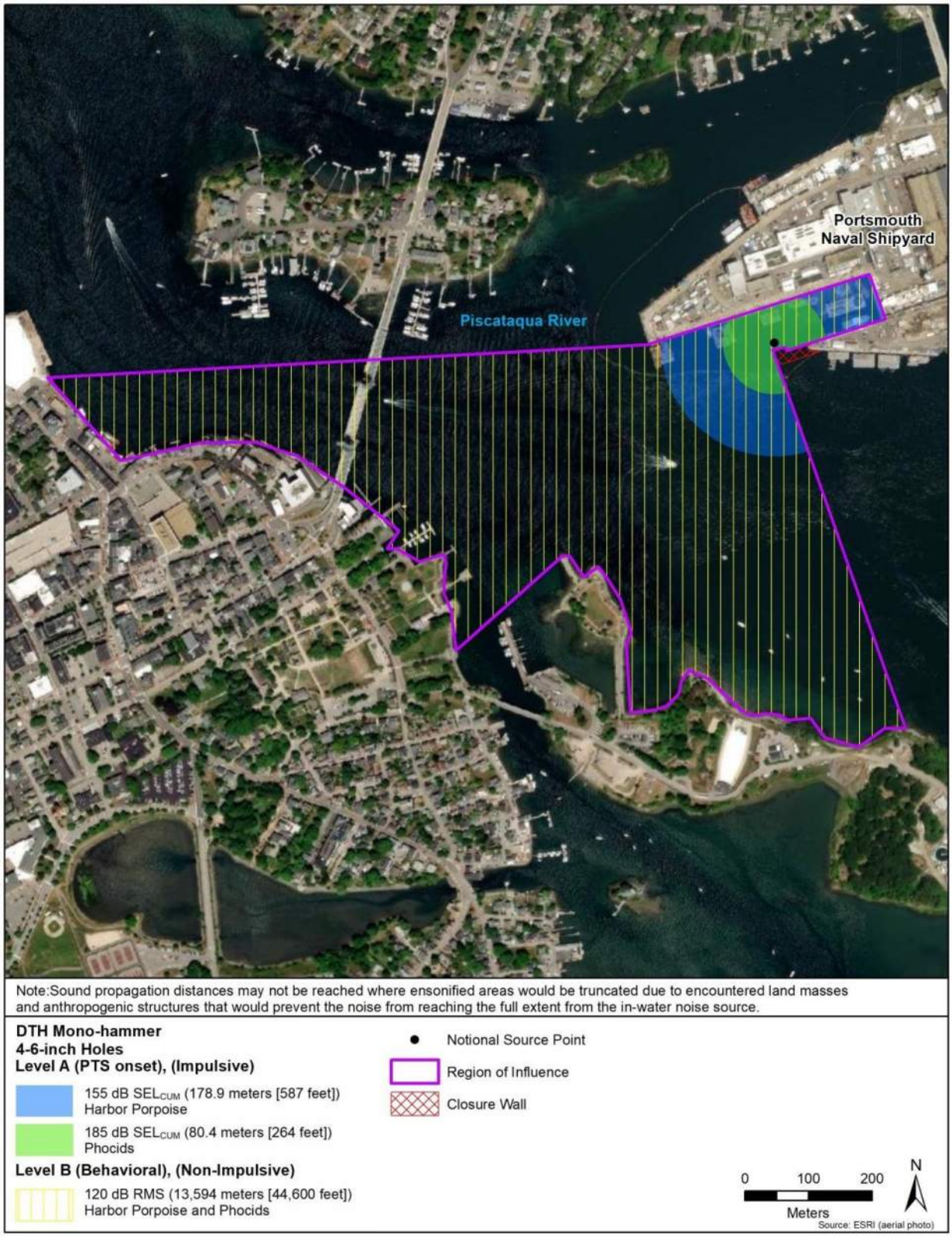


Figure 6-6 Level A Injury (PTS Onset) and Level B (Behavioral) Harassment Zones due to Underwater Noise from DTH Mono-hammer for 4-6 inch Relief Holes

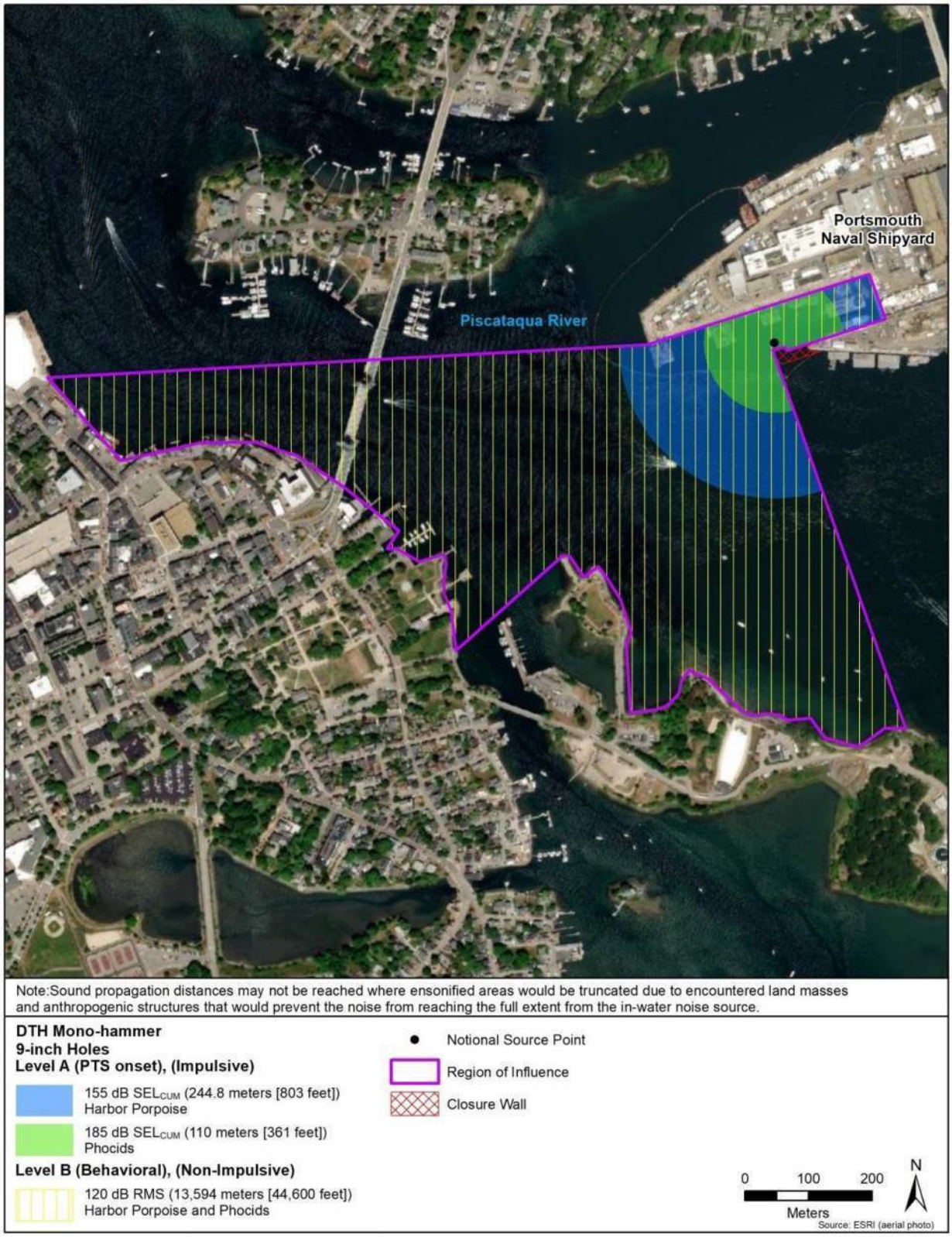


Figure 6-7 Level A Injury (PTS Onset) and Level B (Behavioral) Harassment Zones due to Underwater Noise from DTH Mono-hammer for 9-inch RockAnchors

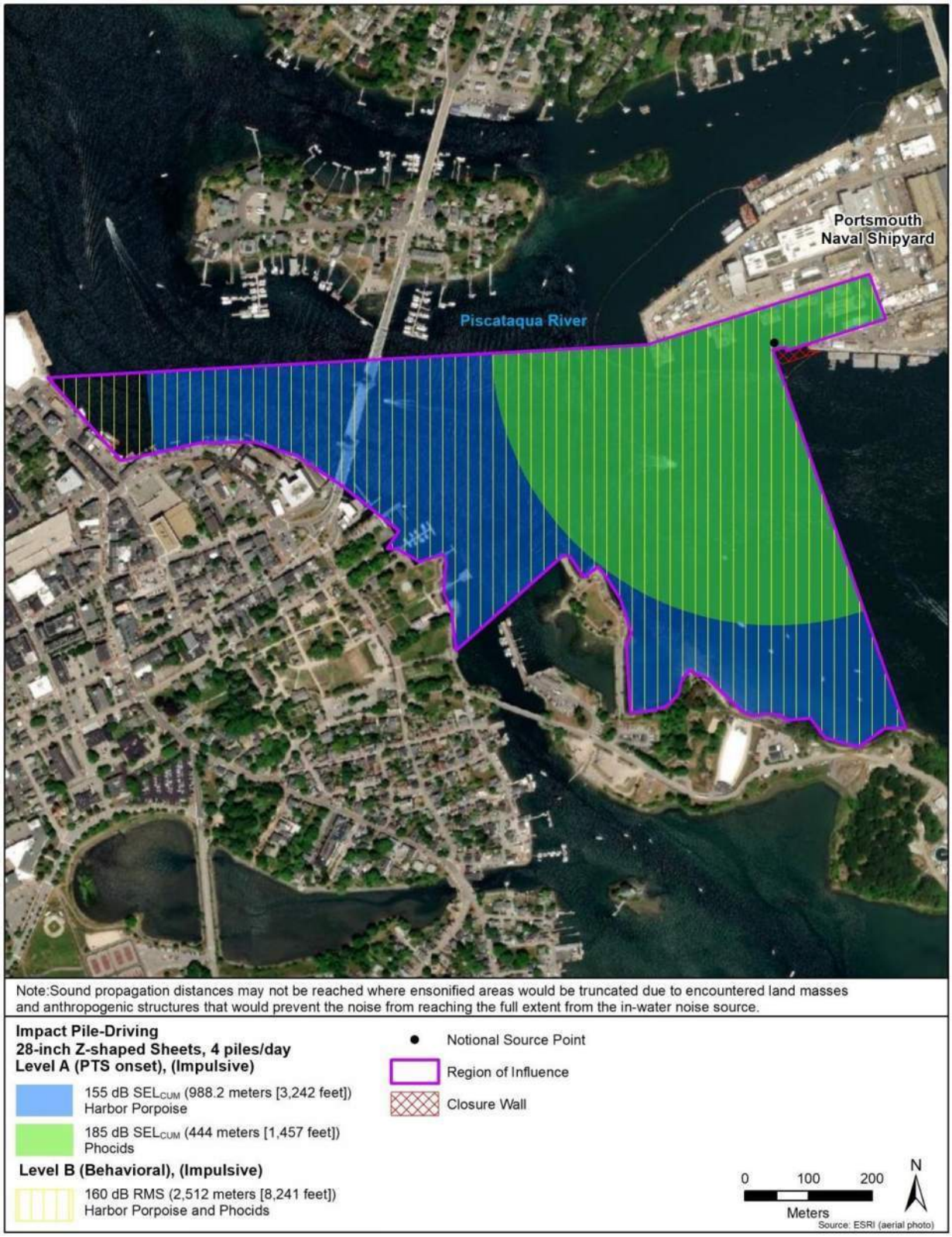


Figure 6-8 Level A Injury (PTS Onset) and Level B (Behavioral) Harassment Zones due to Underwater Noise from Impact Pile Driving 28-inch Sheet Piles, 4 Piles/Day

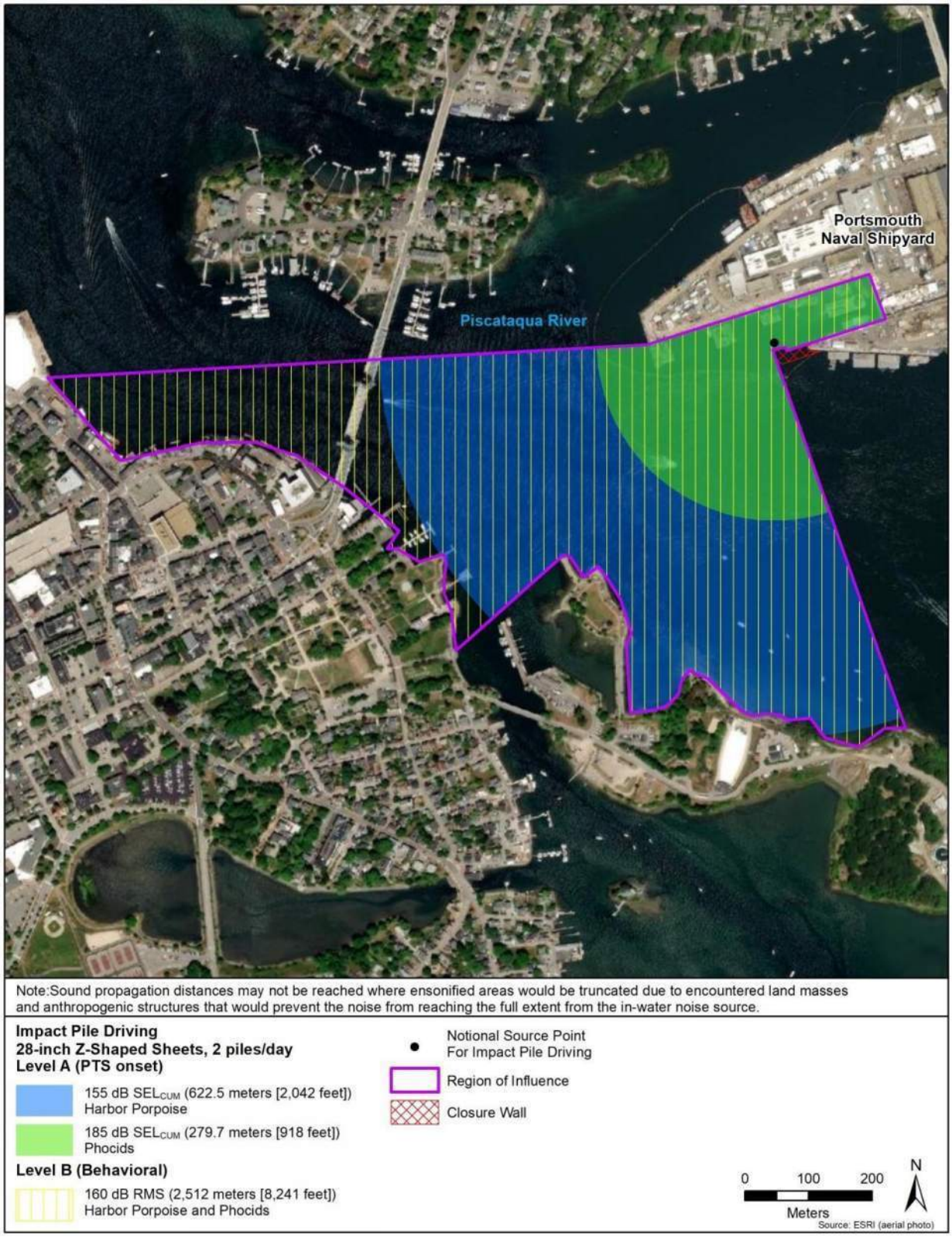


Figure 6-9 Level A Injury (PTS Onset) and Level B (Behavioral) Harassment Zones due to Underwater Noise from Impact Pile Driving 28-inch Sheet Piles, 2 Piles/Day

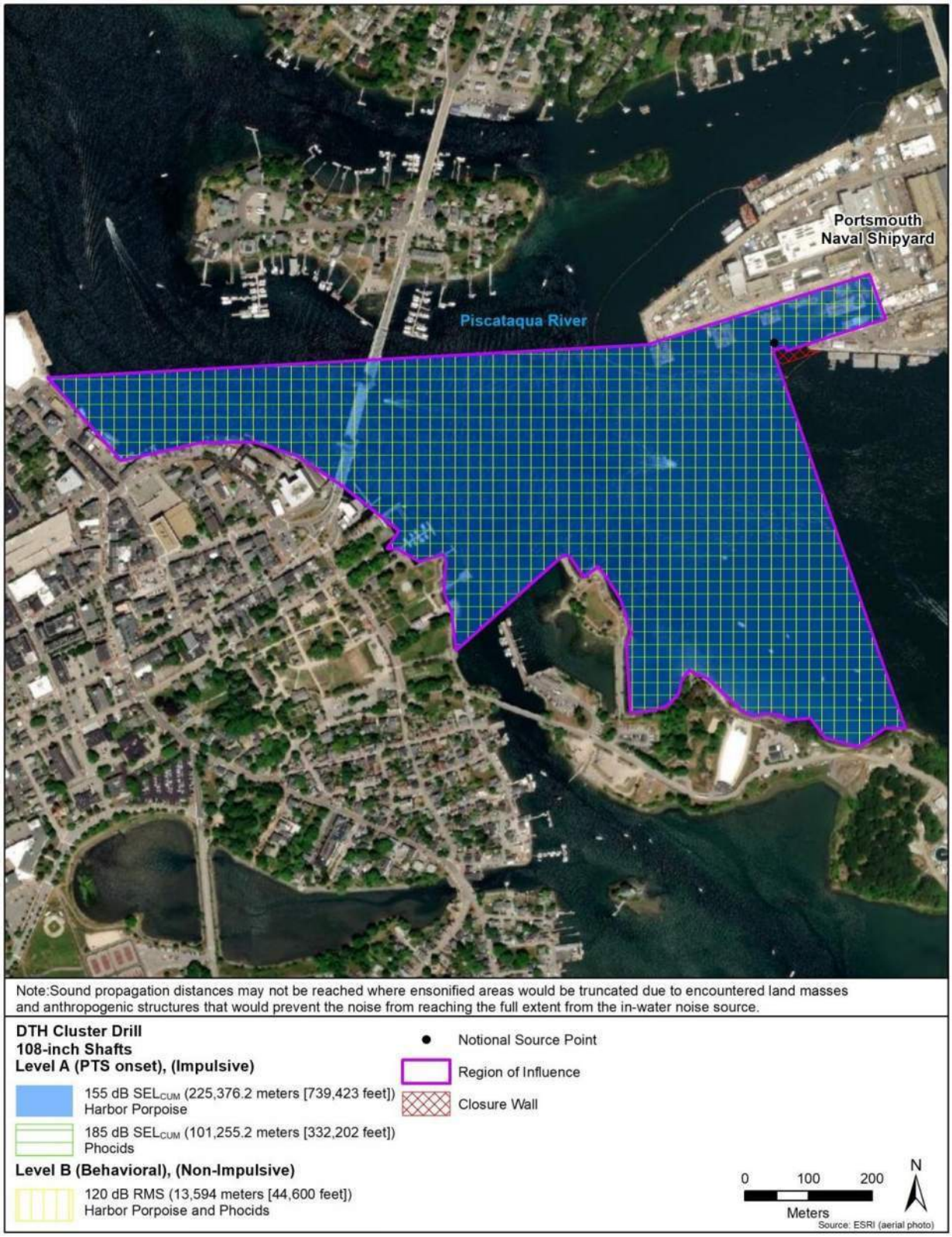


Figure 6-10 Level A Injury (PTS Onset) and Level B (Behavioral) Harassment Zones due to Underwater Noise from 108-inch Cluster Drill

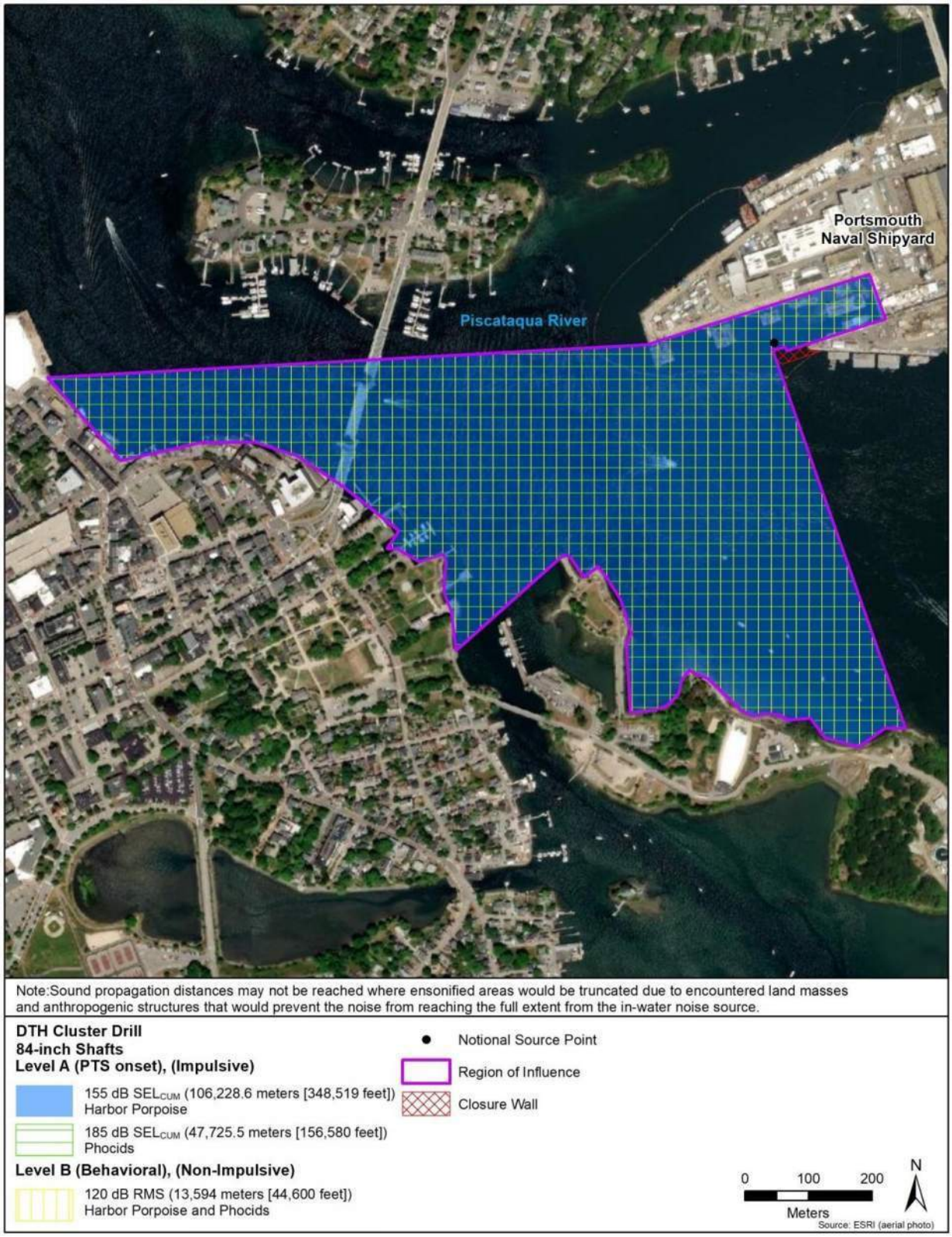


Figure 6-11 Level A Injury (PTS Onset) and Level B (Behavioral) Harassment Zones due to Underwater Noise from 84-inch Cluster Drill

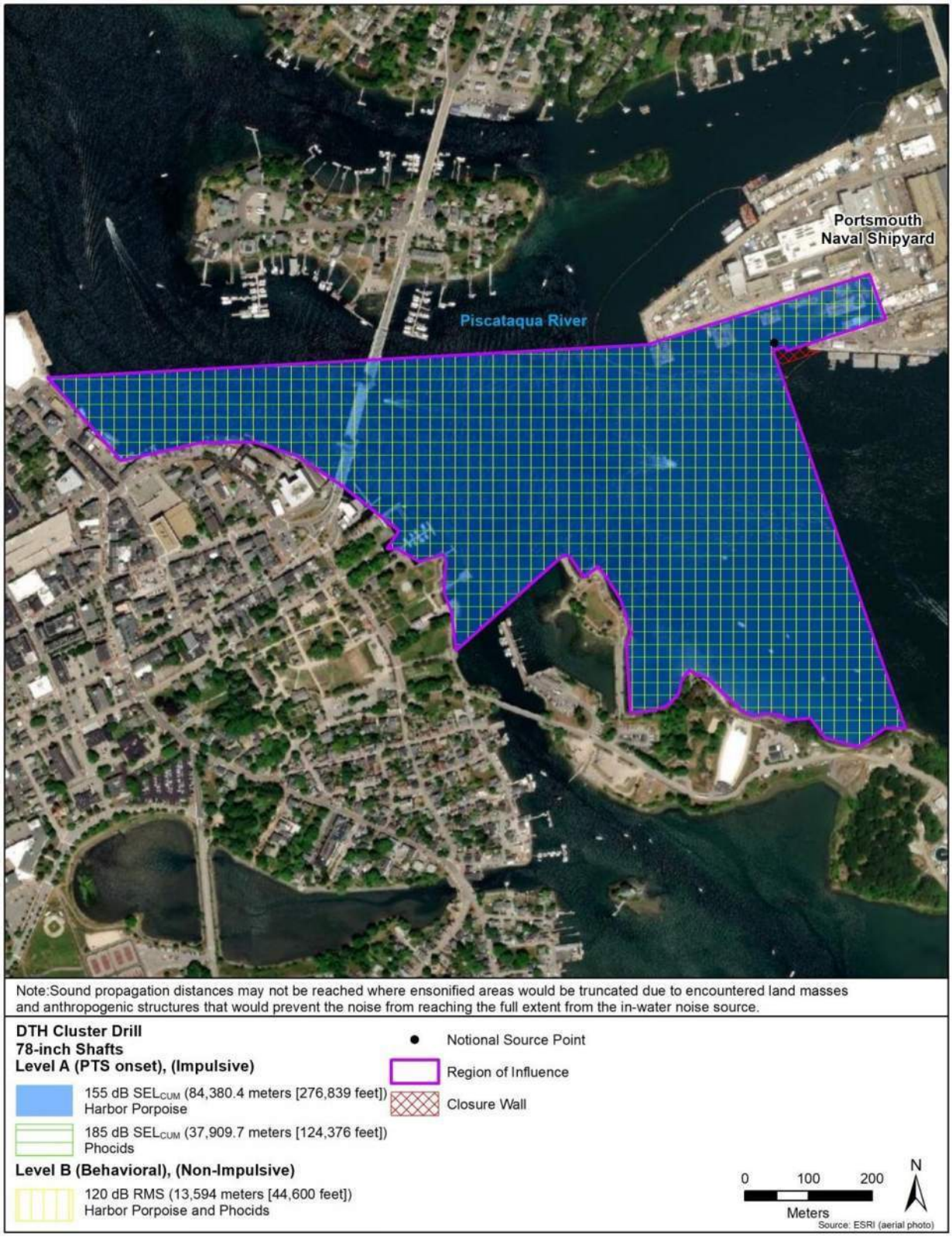


Figure 6-12 Level A Injury (PTS Onset) and Level B (Behavioral) Harassment Zones due to Underwater Noise from 78-inch Cluster Drill

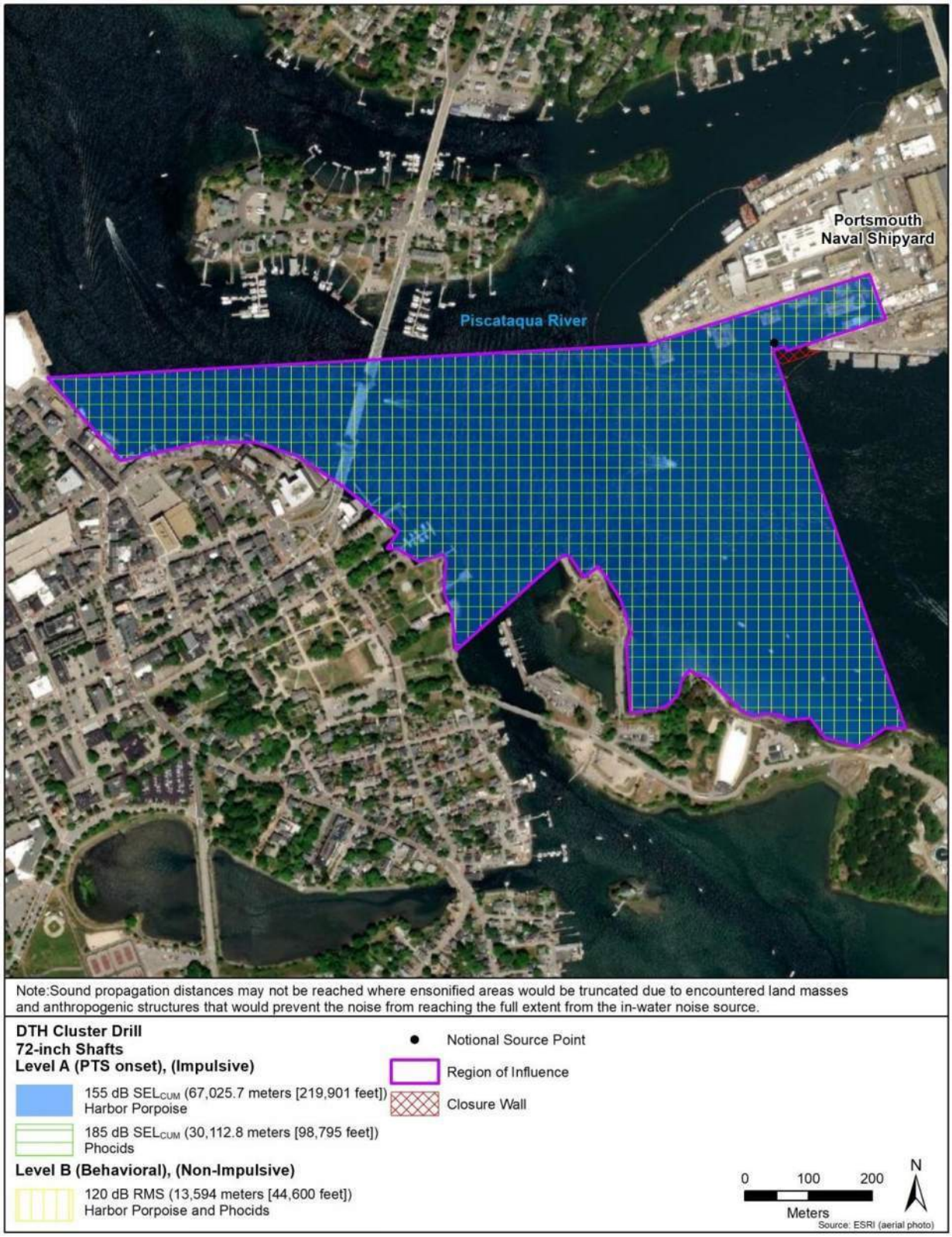


Figure 6-13 Level A Injury (PTS Onset) and Level B (Behavioral) Harassment Zones due to Underwater Noise from 72-inch Cluster Drill

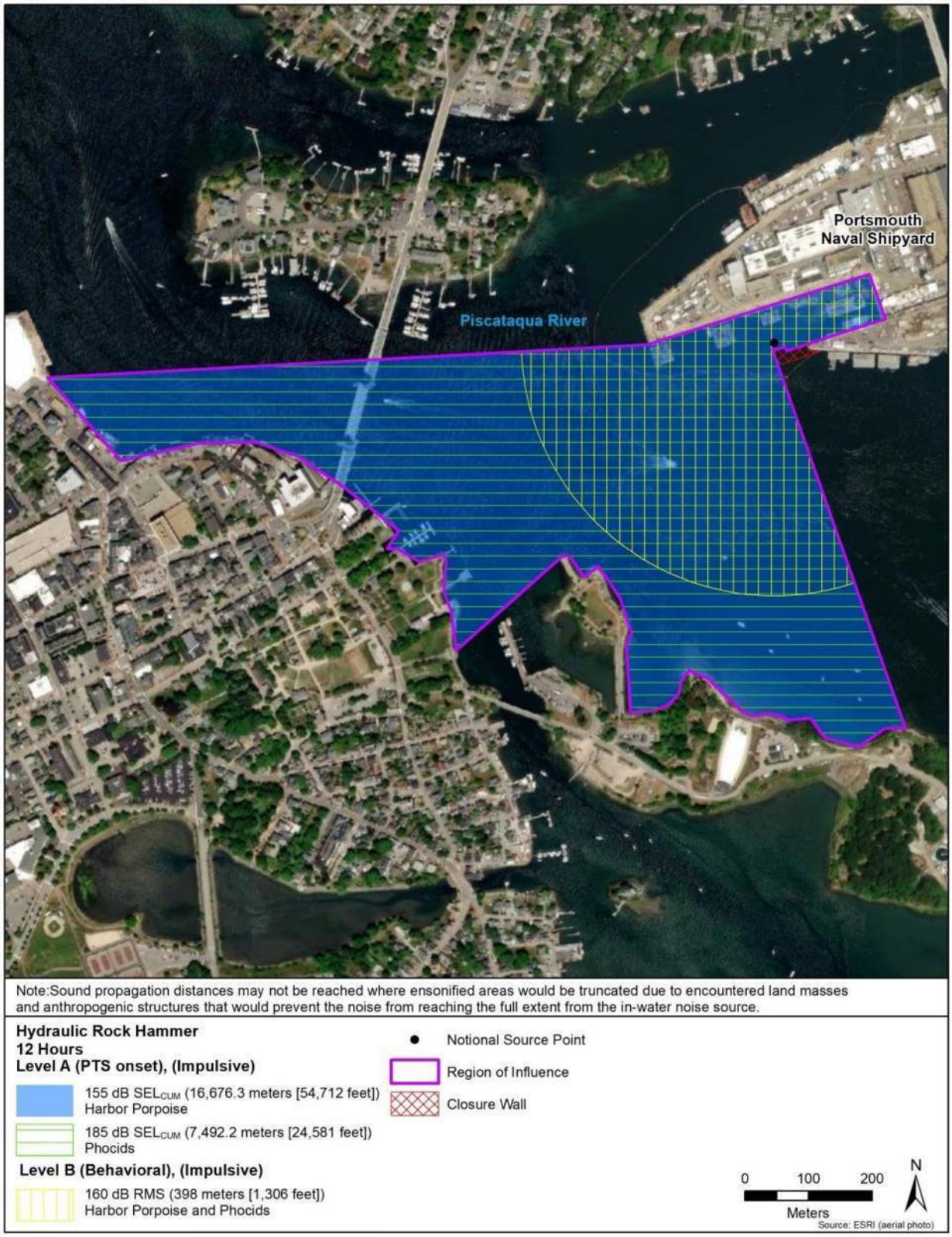


Figure 6-1 Level A Injury (PTS Onset) and Level B (Behavioral) Harassment Zones due to Rock Hammering 12 Hours/Day

Attachment D – In-Water Noise Generating Work – Daily Report

In-Water Noise - Daily Report

Crew: _____ **Date:** _____

Activity Name: _____

Drill/Hammer: Rotary Vibro Impact Mono Cluster Hoe Ram Other:

Pile Type/Size: 102" 78" 9" 4-6" N/A
28" 24" 42" Other:

Mitigation Measures: Bubble Curtain Soft Start

Drilling Times:

Start	Stop
Start	Stop
Start	Stop
Start	Stop
Start	Stop
Start	Stop
Start	Stop
Start	Stop
Start	Stop
Start	Stop

Notes:

Shutdowns:

Start	Stop
Start	Stop
Start	Stop

Notes:

Comments:

Attachment E – Night Vision Device Specifications

BASE

Our Top Pick Christmas Deals!

ATN OTS LT 320 6-12X

The OTS LT 320 6-12X is a thermal monocular made by ATN and is part of the OTS LT series.

★★★★★

$1,899

TYPE	RESOLUTION	BRAND	SERIES	COMPARE
MONOCULAR	320 X 240	ATN	OTS LT	ADD TO COMPARE

Description

The OTS LT 320 6-12X uses a quality 35mm lens to capture thermal radiation. The field of view (FOV) on this thermal monocular reads 4.5 x 3 degrees. It's equipped with a 2x digital zoom to capture additional details. The eye relief distance is 25mm.

Inside the housing of the OTS LT 320 6-12X you'll find the (uncooled, 12µm) 320 by 240px thermal imaging sensor with a refresh rate of 60Hz.

The dimensions of this thermal monocular are 195 x 75 x 66mm (length/width/height) and weighs in at 560g. It can withstand dust, shocks and water (splashes). Operating temperatures range between -28°C and 48°C.

Specifications

General | Size & weight | Battery | Appliances | Durability

Lens	35 mm
Eye relief distance	25 mm
Optical zoom	6 x
Digital zoom	2 x
FOV (h/v)	4.5 ° / 3 °
Thermal type	Uncooled
Sensor resolution (h/v)	320 pixels / 240 pixels
Pixel pitch	12 µm

The OTS LT 320 6-12X is suitable for surveillance missions, hunting, law enforcement and search and rescue operations.

Features

- Ergonomic Design
- ATN Obsidian LT core
- Long Lasting Internal Battery
- USB Type-C connection

Available at	Price	
	$1,899	Shop Now

Display resolution (h/v)	1280 pixels / 960 pixels
Refresh rate	60 Hz
Image polarity	White hot, black hot
Output screen color	Full color
Package contents	Soft carrying case, USB-C Cable, Lens tissue

DRI Ranges

DRI stands for Detection, Recognition and Identification and is based on the widely used Johnson's criteria.

- **Detection** *Detect if an object is present*
- **Recognition** *See what type of object it is (i.e. person, vehicle, airplane)*
- **Identification** *For example see if someone is a friend or foe*

		Detection	Recognition	Identification
	Rabbit	525 meters	131 meters	65 meters
	Person	1847 meters	461 meters	230 meters
	Vehicle	4472 meters	1118 meters	559 meters

Please note that these values are calculated, always consult the manufacturer for official range numbers.

More in OTS LT series

- ATN OTS LT 160 3-6X
- ATN OTS LT 160 4-8X
- ATN OTS LT 320 2-4X
- ATN OTS LT 320 3-6X
- ATN OTS LT 320 4-8X