MARINE MAMMAL MONITORING PLAN
FOR THE SOUTH QUAY WALL
RECAPITALIZATION
AT NAVSTA MAYPORT, JACKSONVILLE, FLORIDA
NAVY REGION SOUTHEAST

Submitted to:

Office of Protected Resources,
National Marine Fisheries Service,
National Oceanographic and Atmospheric Administration

Prepared by:

Naval Facilities Engineering Command Southeast
and
Naval Facilities Engineering Command Atlantic

April 2019

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

ATTACHMENTS

LIST OF FIGURES

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

C-1	Charlie One (Wharf)
dB	decibel
EA	Environmental Assessment
ft.	foot / feet
IHA	Incidental Harassment Authorization
µPa	microPascal
m	meter
MMPA	Marine Mammal Protection Act
NAVSTA	Naval Station
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
POC	point of contact
Project	South Quay Wall Recapitalization Project
PTS	Permanent Threshold Shift
TTS	Temporary Threshold Shift
USFWS	U.S. Fish and Wildlife Service
ZOI	Zone of Influence

1.0 INTRODUCTION

1.1 Purpose of the Monitoring Plan

The purpose of this Monitoring Plan is to provide protocols for marine mammal monitoring during the proposed recapitalization of the South Quay Wall at Naval Station (NAVSTA) Mayport, Florida (Figure 1-1). Recapitalization includes demolishing and replacing the existing concrete pile cap, wharf deck, and utilities and installation of a new steel sheet pile bulkhead around the existing wharf. This plan was developed to support the National Marine Fisheries (NMFS) Incidental Harassment Authorization (IHA) Application (U.S. Department of the Navy 2018a).

Marine mammal monitoring will be conducted before, during, and after pile driving activities within the zones detailed in Section 2.3, and will represent an important minimization measure to reduce the likelihood of potential injury to marine mammals.

1.2 Scope and Timing

The scope of this Monitoring Plan includes pile driving activities that are necessary for the South Quay Wall recapitalization project (Project). Sea turtles and smalltooth sawfish (as practicable) will be included in monitoring efforts. However, for the purposes of this submittal to NMFS in support of compliance with the Marine Mammal Protection Act (MMPA), the scope of monitoring in this document is limited to marine mammals under NMFS' purview. Marine mammal monitoring would be integrated with other marine environmental monitoring if it is required as a result of the Navy's National Environmental Policy Act (NEPA) project review or as a condition of approval by other regulatory agencies.

This Monitoring Plan shall be implemented when pile driving is taking place during the period of the requested IHA (15 February 2020 to 14 February 2021) for the Project.

1.3 Management

The Monitoring Plan shall be managed by Naval Facilities Engineering Command (NAVFAC) Southeast. Marine mammal monitoring shall be carried out by private contractors supported by local technical staff from NAVFAC Southeast and NAVSTA Mayport. NAVFAC Southeast shall also be responsible for preparation of the Monitoring Report for the IHA.

Figure 1-1. South Quay Wall – Naval Station Mayport, Mayport, Florida

2.0 SOUTH QUAY WALL RECAPITALIZATION PROJECT

Refer to the Environmental Assessment (EA) (U.S. Department of the Navy 2018a) and current IHA Application (U.S. Department of the Navy 2018b) for a full description of the Project.

2.1 Project Area

The project area is along the Atlantic coast of northern Florida, and is confined to the NAVSTA Mayport turning basin out to the limit of the most distant of the acoustic thresholds for all protected species being addressed for the Project (Figure 2-1). The lesser acoustic threshold distances are displayed in Figure 2-2. Acoustic thresholds used in this monitoring report are based on criteria developed by NMFS (70 FR 1871; 74 FR 41684).

2.2 Activities to be Monitored

Activities which would be subject to marine mammal monitoring include the following:

- Vibratory pile driving of steel sheet piles necessary to construct a new steel sheet pile wall outside the existing bulkhead. Approximately 240 steel sheet piles will be installed with a vibratory driver.
- Contingency-only impact installation of steel sheet piles. Impact driving will only be used if vibratory driving is inadequate or an obstruction that prevents vibratory driving is encountered.

Marine mammal monitoring will be performed to ensure that in-water activities are stopped if animals occur within the zone of influence (ZOI) for potential injury or a standard 50 feet (ft.) buffer from pile driving activities (Figure 2-3). Monitoring methods are described in Section 3 of this document.

2.3 Construction Conditions

A complete description of construction conditions, best management practices, and additional measures to minimize marine mammal exposure during construction is included in Chapter 11 of the Incidental Harassment Authorization (IHA) Application (U.S. Department of the Navy 2018b).

Soft Start

The objective of a soft-start is to provide a warning and / or give 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. A soft start procedure shall be used at the beginning of each day's in-water pile driving or if pile driving has ceased for more than 30 minutes, for impact driving only.

The contractor shall provide an initial set of strikes from the impact hammer at reduced energy, followed by a 30-second waiting period, then two subsequent sets. (The reduced energy of an individual hammer cannot be quantified because they vary by individual drivers. Also, the number of strikes will vary at reduced energy because raising the hammer at less than full power and then releasing it results in the hammer "bouncing" as it strikes the pile resulting in multiple "strikes").

Figure 2-1. Injury and Behavioral Zones of Influence for Marine Mammals– Vibratory Driving of Steel Sheet Piles

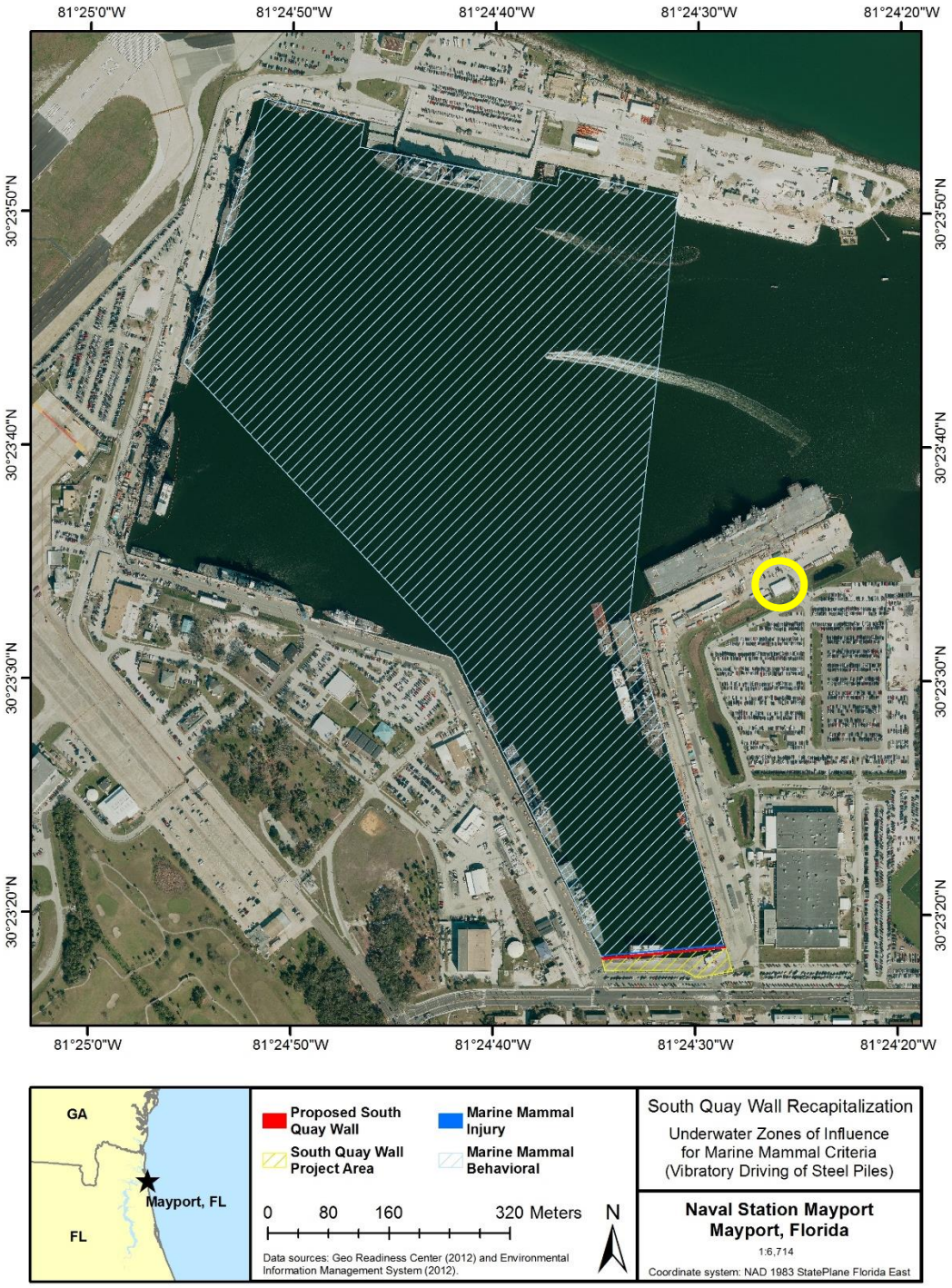


Figure 2-2. Injury and Behavioral Zones of Influence for Marine Mammals – Impact Driving of Steel Sheet Piles (Contingency Only)

Pile Installation

The acoustic analysis for vibratory pile driving used the assumption that a maximum 15 individual sheet piles would be driven each day. Each pile is anticipated to require no more than 60 seconds to drive by vibratory methods. Impact pile driving would only be used as a contingency in cases when vibratory driving is insufficient (a similar project that has been completed at adjacent Wharf C-1 required impact pile driving on only seven piles).

2.4 Monitoring and Shutdown Zones

Table 2-1 lists the monitoring and shutdown zones, and measures associated with the occurrence of a marine mammal in each zone. For all in-water construction and demolition activities, a minimum protective shutdown zone of 15 m (50 ft.) is proposed. Sound-generating activities based on the maximum modeled distance to the Level A (injury) threshold follow:

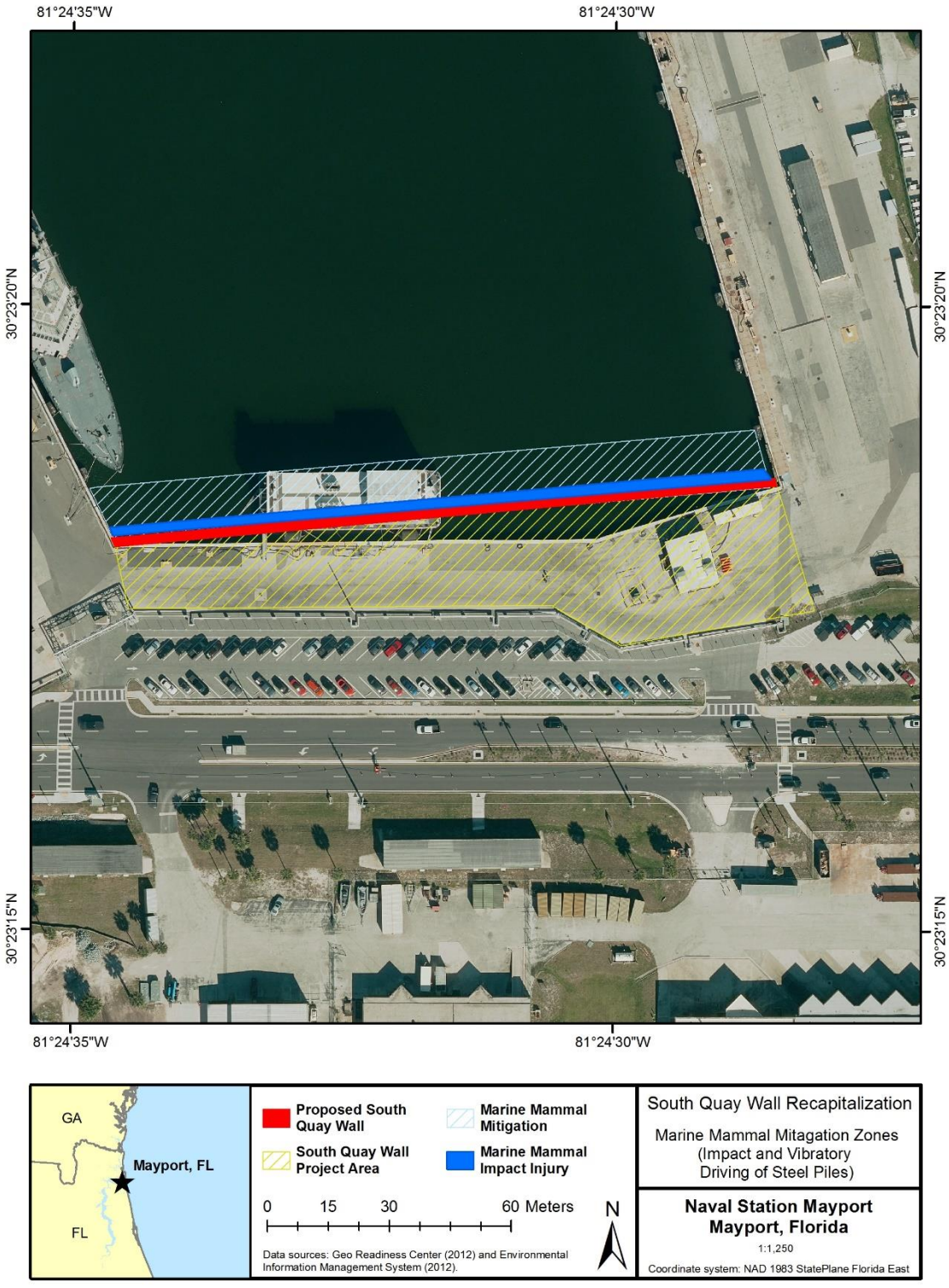
- During all pile driving, the shutdown distance shall be 15 m.

Table 2-1. Monitoring and Shutdown Zones

Type of Activity	Distance from Pile Being Driven and Active In-water Equipment (any direction in water)	Measure
All in-water work[1]	50 ft. (15 m)	Shut down all in-water work if a marine mammal or sea turtle is observed in the zone

[1] In-water work is defined as any activity where personnel or equipment are working in the water column. Vessel movement does not constitute in-water work.

Figure 2-3. Monitoring / Shutdown Zone



3.0 MARINE MAMMAL MONITORING

3.1 Observers and Procedures

The Navy shall conduct a pre-construction briefing with the contractor. During the briefing, all contractor personnel working in the Project area shall watch the Navy's Marine Species Awareness Training presentation.

Marine mammal observers ("observers") designated by the contractor shall be placed at the best vantage points practicable to monitor for marine mammals and implement shutdown/delay procedures when applicable by calling for the shutdown to the hammer operator. The observers shall have no other construction related tasks while conducting monitoring. Potential locations for two marine mammal observers include the construction barge and elevated building on NS Mayport with a view of the turning basin.

Observer qualifications for construction actions are as follows:

1. At least one observer must have prior experience working as an observer.
2. Other observers may substitute education (undergraduate degree in biological science or related field) or training for experience.
3. When a team of three or more observers are required, one observer shall be designated as lead observer or monitoring coordinator. The lead observer must have prior experience working as an observer.

Other standard qualifications are:

1. Ability to conduct field observations and collect data according to assigned protocols.
2. Experience or training in the field identification of marine mammals, including the identification of behaviors.
3. Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations.
4. Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates and times when in-water construction activities were suspended to avoid potential incidental injury from construction sound of marine mammals observed within a defined shutdown zone; and marine mammal behavior.
5. Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

The contractor shall adhere to all requirements of the following:

- U.S. Fish and Wildlife Services (USFWS) 2011 Standard Manatee Conditions for In-Water Work (Attachment 1)
- National Marine Fisheries Service 2006 Sea Turtle and Smalltooth Sawfish Construction Conditions (Attachment 2)
- National Marine Fisheries Services 2012 Southeast Region Marine Mammal and Sea Turtle Viewing Guidelines (Attachment 3)
- Requirements of IHA upon issuance by NMFS.

3.2 Methods

Two observers shall monitor the shutdown zone before, during, and after pile driving and removal.

The observers shall be placed at the best vantage points practicable (e.g. from a small boat, tall building [denoted by the yellow circle in Figures 2-1 and 2-2], construction barges, on shore, or any other suitable location) to monitor for marine mammals and implement shutdown/delay procedures when applicable by calling for the shutdown to the equipment operator(s). Elevated positions are preferable; it shall be the contractor's responsibility to ensure that appropriate safety measures are implemented to protect observers on elevated observation points. If a boat is used for monitoring, the boat shall maintain minimum distances from species (should they occur) as described in National Marine Fisheries Services' 2012 Southeast Region Marine Mammal and Sea Turtle Viewing Guidelines (Attachment 3).

- During all observation periods, observers shall use binoculars and the naked eye to search continuously for marine mammals;
- If the shutdown zone is obscured by fog or poor lighting conditions, pile driving shall not be initiated, and shall cease if already in progress, until the entire shutdown zone is visible.
- The shutdown zone shall be monitored for the presence of marine mammals before, during, and after any pile driving or removal activity.

Pre-Activity Monitoring:

The shutdown zone shall be monitored for 30 minutes prior to in-water construction/demolition activities. If a marine mammal is present within or approaching the edge of the shutdown zone, the activity shall be delayed until the animal(s) leave the shutdown zone. Activity shall resume only after the observer has determined, through re-sighting or by waiting 15 minutes with no further sightings that the animal(s) has moved outside the shutdown zone. The observer shall notify the monitoring coordinator/construction foreman / point of contact (POC) when construction activities can commence.

During Activity Monitoring:

The shutdown zone shall include all areas where the underwater sound pressure levels are anticipated to equal or exceed the Level A (injury) criteria for marine mammals (PTS for MF cetaceans is 1.4m [5 ft]). However, the shutdown zone shall always be a minimum of 15 meters (m) (50 ft.) to prevent injury from physical interaction of marine mammals with construction equipment (Figure 2-3).

If a marine mammal, sea turtle, or smalltooth sawfish enters a shutdown zone during any in-water work, activity shall be halted and delayed until either the animal has voluntarily left and been visually confirmed beyond the shutdown zone or 15 minutes have passed without re-detection of the animal.

Post-Activity Monitoring:

Monitoring of the shutdown zone shall continue for 30 minutes following the completion of the activity.

3.3 Data Collection

The following information shall be collected on sighting forms used by observers:

- Date and time that pile driving or removal begins or ends
- Construction activities occurring during each observation period
- Weather parameters identified in the acoustic monitoring (e.g., wind, temperature, percent cloud cover, and visibility)
- Tide state and water currents

If a protected species enters the relevant ZOIs and/or a manatee, sea turtle, or smalltooth sawfish enters the shutdown zone, the following information shall be recorded once shutdown procedures have been implemented:

- Species, numbers, and if possible sex and age class of marine mammals
- Behavior patterns observed, including bearing and direction of travel
- Location of the observer and distance from the animal(s) to the observer

If possible, photographs of the animal(s) shall be taken and forwarded to the NAVFAC Southeast Environmental point of contact.

Data collection forms shall be furnished to the Environmental point of contact within a mutually agreeable timeframe.

3.4 Equipment

The observer(s) shall be equipped with the following:

- binoculars (7 x 50 power or greater) to ensure sufficient visual acuity while investigating sightings
- portable radios or cellular phone(s) to rapidly communicate with the appropriate construction personnel to initiate shutdown of pile driving activity if required
- a digital camera for photographing any marine species sighted
- data collection forms
- Compass/GPS

3.5 Observer Monitoring Locations

In order to effectively monitor the shutdown zones, marine mammal observers shall be positioned at the best practicable vantage point(s), taking into consideration the behavior of marine mammal species likely to enter the area, security, safety, and space limitations at the waterfront, in order to properly monitor these zones. Observers may be stationed in a tall building on NS Mayport, the construction barge, small vessels, or on the wharf at a location that will provide adequate visual coverage for the marine mammal shutdown zone.

3.6 Interagency Notification

If the Navy encounters an injured, sick, or dead marine mammal, NMFS shall be notified immediately. Such sightings shall be called into the NMFS Stranding Coordinator for the Southeast:

Erin Fougeres, Ph.D.
Marine Mammal Stranding Program Administrator
NOAA Fisheries
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701
e-mail: erin.fougeres@noaa.gov
office: 727-824-5323
fax: 727-824-5309

The Navy shall provide NMFS with the species or description of the animal(s), the condition of the animal (including carcass condition if the animal is dead), location, the date and time of first discovery, observed behaviors (if alive), and photo or video (if available).

Care shall be taken in handling dead specimens to preserve biological materials in the best possible state for later analysis of cause of death, if that occurs. In preservation of biological materials from a dead animal, the finder (i.e. marine mammal observer) has the responsibility to ensure that evidence associated with the specimen is not unnecessarily disturbed.

4.0 REPORTING

A draft report of any incidents of marine mammals entering the shutdown zone shall be submitted to NMFS / USFWS within ninety days of the completion of marine mammal monitoring, or sixty days prior to the issuance of any subsequent IHA for projects at NS Mayport, whichever comes first. A final report shall be prepared and submitted within thirty days following resolution of comments on the draft report from NMFS.

5.0 REFERENCES

Hannigan, P. (2011). Pile Driving Equipment. 2011 PDCA Professor Pile Institute. Produced by GRL Engineers, Inc. Retrieved from http://www.piledrivers.org/pdpi-pat-hannigan.htm. Accessed on 04 November 2012

U.S. Department of the Navy (2018a). Environmental Assessment South Quay Wall Recapitalization at Naval Station Mayport, Florida.

U.S. Department of the Navy. (2018b). Request for an Incidental Harassment Authorization Under the Marine Mammal Protection Act for the South Quay Wall Recapitalization Project, Navy Region Southeast. March 2018.