

U.S. Navy Marine Mammal Compliance and Mitigation Program in the Atlantic: A review

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The U.S. Navy's Atlantic Fleet conducts training and testing activities within the Northwest Atlantic Ocean and Gulf of Mexico, including the use of active sonar and explosives. While training and testing activities have the potential to impact the environment, the Navy employs every means available, without jeopardizing the safety of sailors or impacting military readiness, to mitigate the potential environmental effects of these activities. Prior to training and testing activities, the Navy consults extensively with environmental regulators to determine appropriate mitigations to protect marine species, particularly marine mammals. Additionally, in order to evaluate the impacts of naval activities on marine mammals and other protected species, the Navy has implemented a monitoring program to collect data on baseline animal presence, as well as exposure and response to Navy training and testing activities. This presentation will provide an overview of Navy environmental compliance in the Atlantic, including monitoring efforts, the tools and processes that the Navy uses to assess the potential impacts of activities, how mitigation is used to reduce those impacts, and protective measures such as the restrictions employed in the North Atlantic right whale critical habitat areas. The Navy remains committed to marine stewardship and responsible management of the potential impacts of training and testing activities on protected species.

U.S. Navy Environmental Compliance and Marine Species Monitoring Program



Jacqueline Bort
Marine Resources - EV53

Why Does Navy Train?



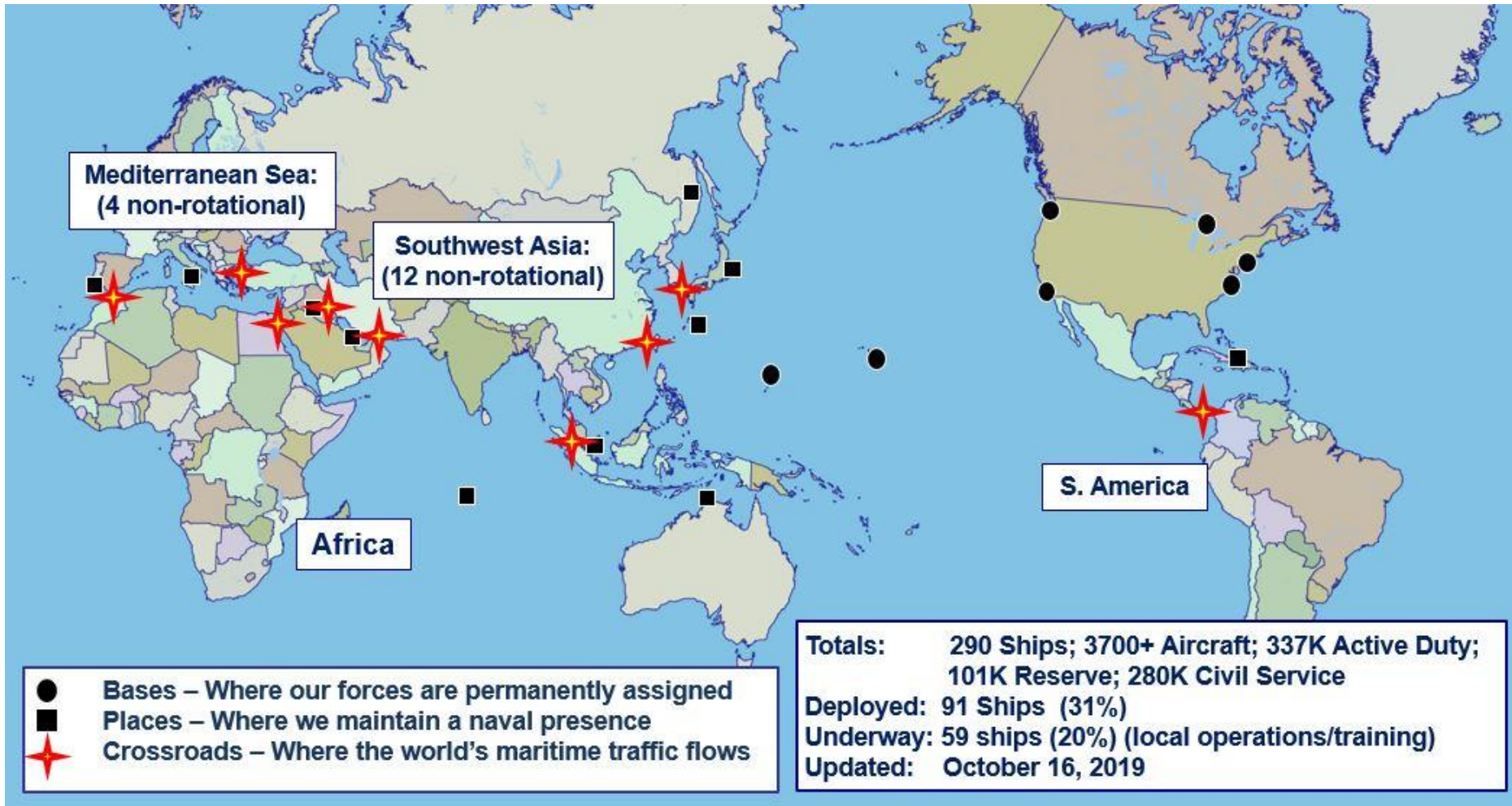
Mission: Maintain, train and equip combat-ready military forces capable of winning wars, deterring aggression, and maintaining freedom of the seas (Title 10 of U.S. Code)

- **Why Navy must conduct live, realistic training at sea:**

- Defeat enemy threats
- Protect and enable global trade & US economic interests
- Prepare Sailors for combat & maintain critical skills
- Proliferation of quiet, modern submarines and other technologies by adversaries worldwide
- Assess performance of new & emerging technologies



Today's Navy: Operate Forward



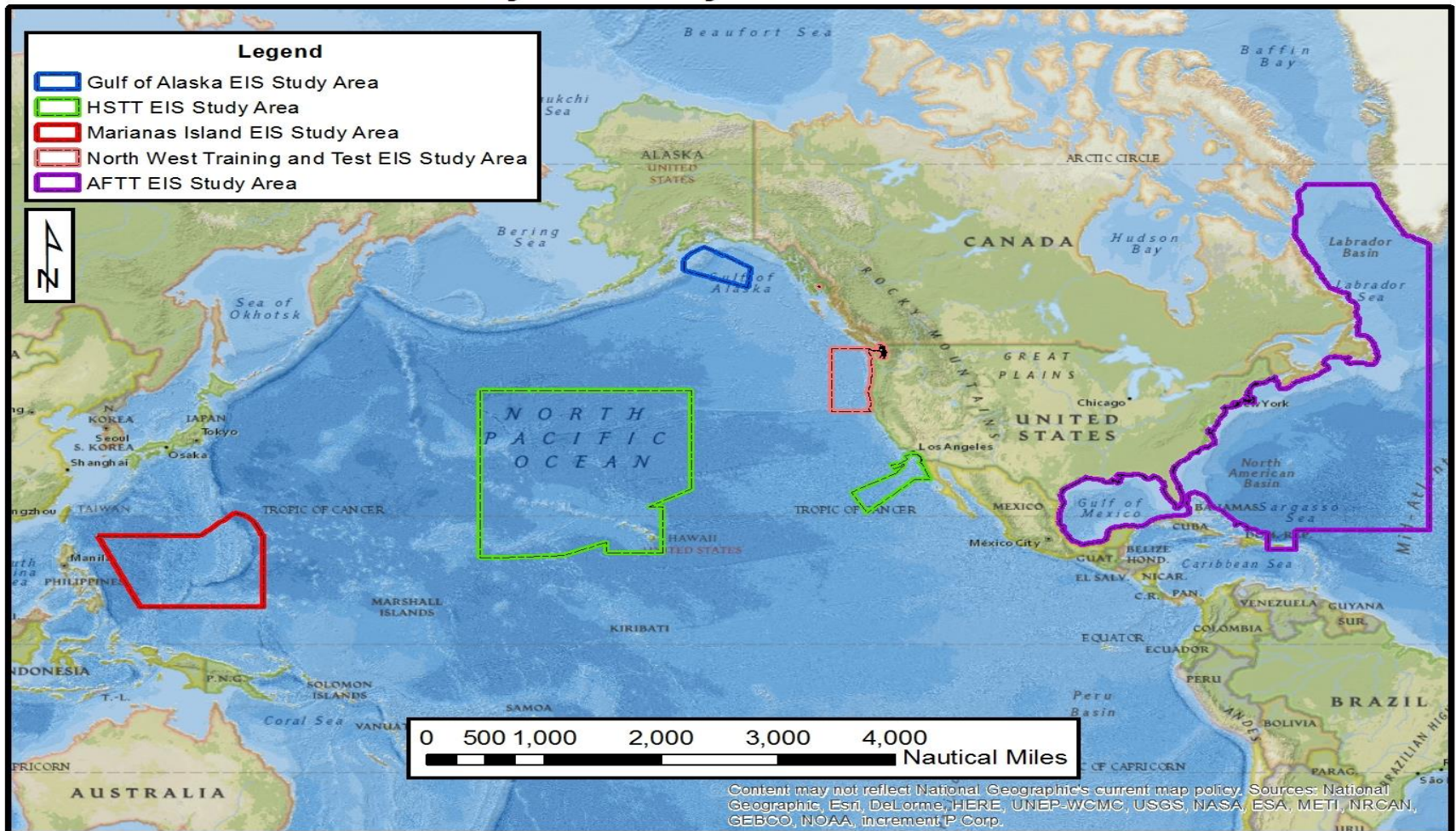
Environmental Permitting Process

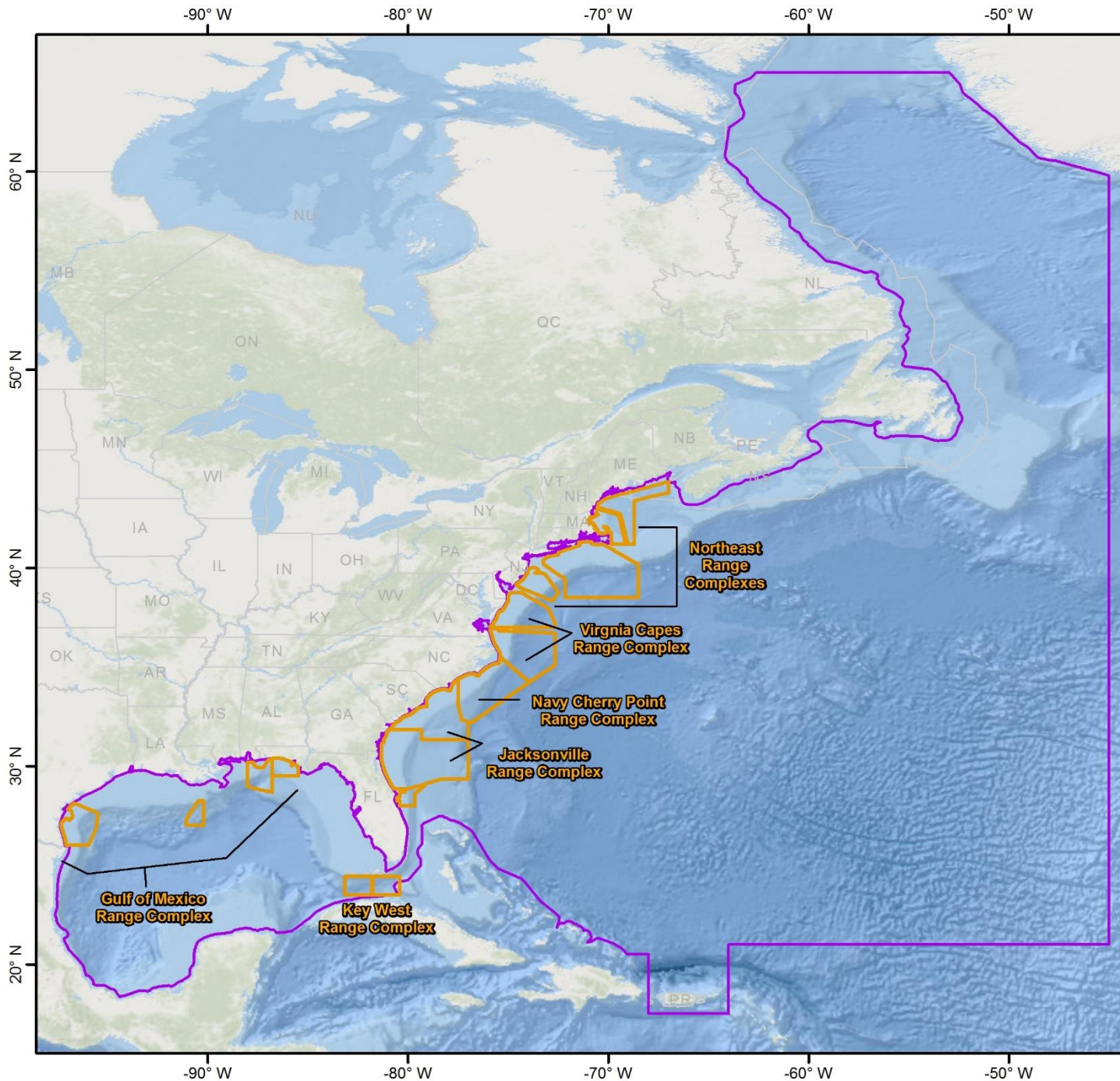
- **The U.S. Navy is required to comply with NEPA, MMPA, ESA, and other environmental laws/regulations**
- **First comprehensive analyses for training completed in 2009 (Phase I)**
 - The resulting MMPA and ESA permits for the take of affected species required mitigation, monitoring and reporting
 - Instituted an adaptive management process between Navy and NMFS
- **AFTT EIS & associated permits effective 2013-2018 (Phase II)**
 - Complementary Pacific requirement – Hawaii-SoCal Training and Testing (HSTT), Northwest (NWTT), Alaska (GOA), Mariana Islands (MITT)
- **AFTT EIS (Phase III) effective 2018-2023, planned extension to 2025**
 - Final Rule expected Nov. 2019

Phase II/III At Sea Study Areas



Navy EIS Study Areas Phase III



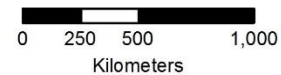


Legend

-  OPAREA Boundary
-  AFTT Study Area Phase III



1:30,000,000



Coordinate System:
GCS WGS 1984

Data Source:
ESRI Base Map;
NAVY COP Database

Map Created:
5 September 2017

- **Maintains mitigation, monitoring, and reporting requirements**
- **Improvements over previous analyses:**
 - Incorporated new and relevant science (including updated acoustic criteria)
 - Improved marine mammal and sea turtle density information
 - Improved NAEMO model and revised modeling criteria
- **Adaptive management process**
 - Provides opportunity for Navy and NMFS to confer at least annually to:
 - Review annual reports
 - Discuss future monitoring objectives
 - Review emerging science
 - Address any issues regarding the permits

Mitigation Overview

- **History:** Navy has implemented mitigation measures since late 1990's
- **Balance/Assessment:** Mitigation must be effective (i.e., avoid/reduce potential impacts) **AND** allow Navy to meet mission requirements. Navy evaluates potential mitigation with a 2-step analytical approach
 - 1) Scientific: Determine if potential mitigation will effectively avoid/reduce potential takes and/or potential impacts in key areas of biological importance
 - 2) Operational: Assess how/to what degree potential mitigation would be compatible with planning, scheduling, and conducting training and testing activities with regard to safety, practicality (e.g., cost), and mission requirements (e.g., must maintain training realism)
- **Finalizing Mitigation:** Navy completes a comprehensive internal assessment/approval process, considers/addresses public comments, and coordinates/consults with regulators (e.g., NMFS)

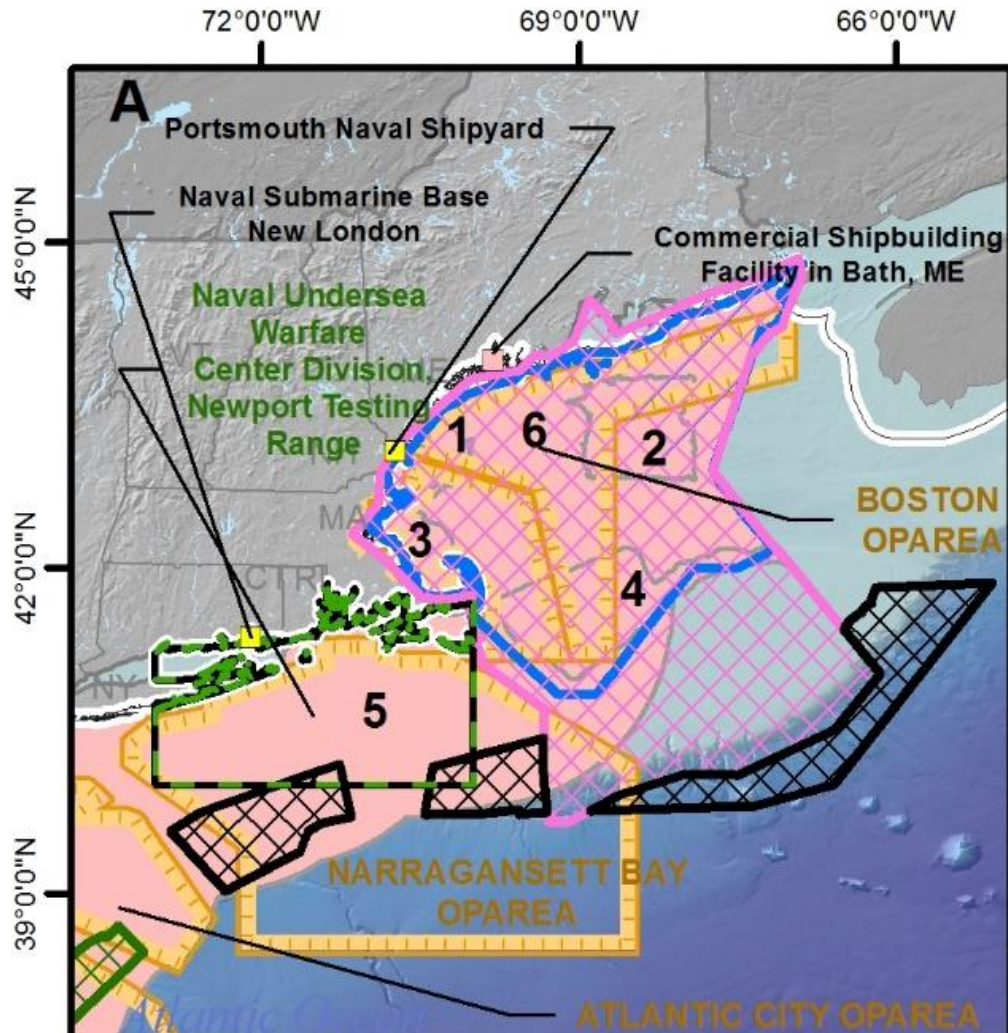
Marine Mammal Mitigation

- **Procedural Mitigation:** Implemented whenever/wherever Navy trains/tests with applicable acoustic, explosive, and physical disturbance and strike stressors. Involves trained Lookouts observing mitigation zones, and Navy implementing a power down or halting an activity if a marine mammal is observed. Mitigation zone examples:
 - 1) Active Sonar: 1000 yd. & 500 yd. power downs (if source can be powered down), 200 yd. shut down
 - 2) Explosive Sonobuoys: 600 yd.
 - 3) Vessel Movements: 500 yd. (whales), 200 yd. (other marine mammals); Broadcast NARW Dynamic Management Area information (e.g., location and dates) to Navy assets to further reduce vessel strike potential and assist visual observations of mitigation zones
- **Mitigation Areas:** Mitigation implemented within key areas of biological importance designed to avoid/reduce potential impacts on marine mammal species, stocks, or populations based on data regarding their seasonality, density, and behavior

Mitigation Areas for NARW

- **Northeast NARW Mitigation Area**
 - Minimize sonar use; no in-water explosives
 - Additional mitigation for non-explosive activities (e.g., 10-kt speed restrictions during transits/normal firing during non-explosive torpedo activities)
- **Southeast NARW Mitigation Area (Nov 15-April 15)**
 - No sonar except minimized use of helicopter dipping, navigation training, and object detection exercises; no in-water detonations or missiles, rockets, gunnery, or bombs (explosive or non-explosive)
 - Obtain Early Warning System data and implement vessel speed reductions after observing a NARW or at night/poor visibility, and within 5 NM of a sighting within the past 12 hours
- **Jacksonville Operating Area (Nov 15-April 15)**
 - Use Early Warning System data for vessel transits & event planning (e.g., timing/location)
- **Southeast NARW Critical Habitat Mitigation Area (Nov 15-April 15)**
 - Report to NMFS the hours/counts of sonar/in-water explosives used annually
- **Planning Awareness Mitigation Areas**
 - Additional reporting, annual sonar hour caps, or avoiding major training exercises (depending on the area)

Mitigation Areas: Northeast

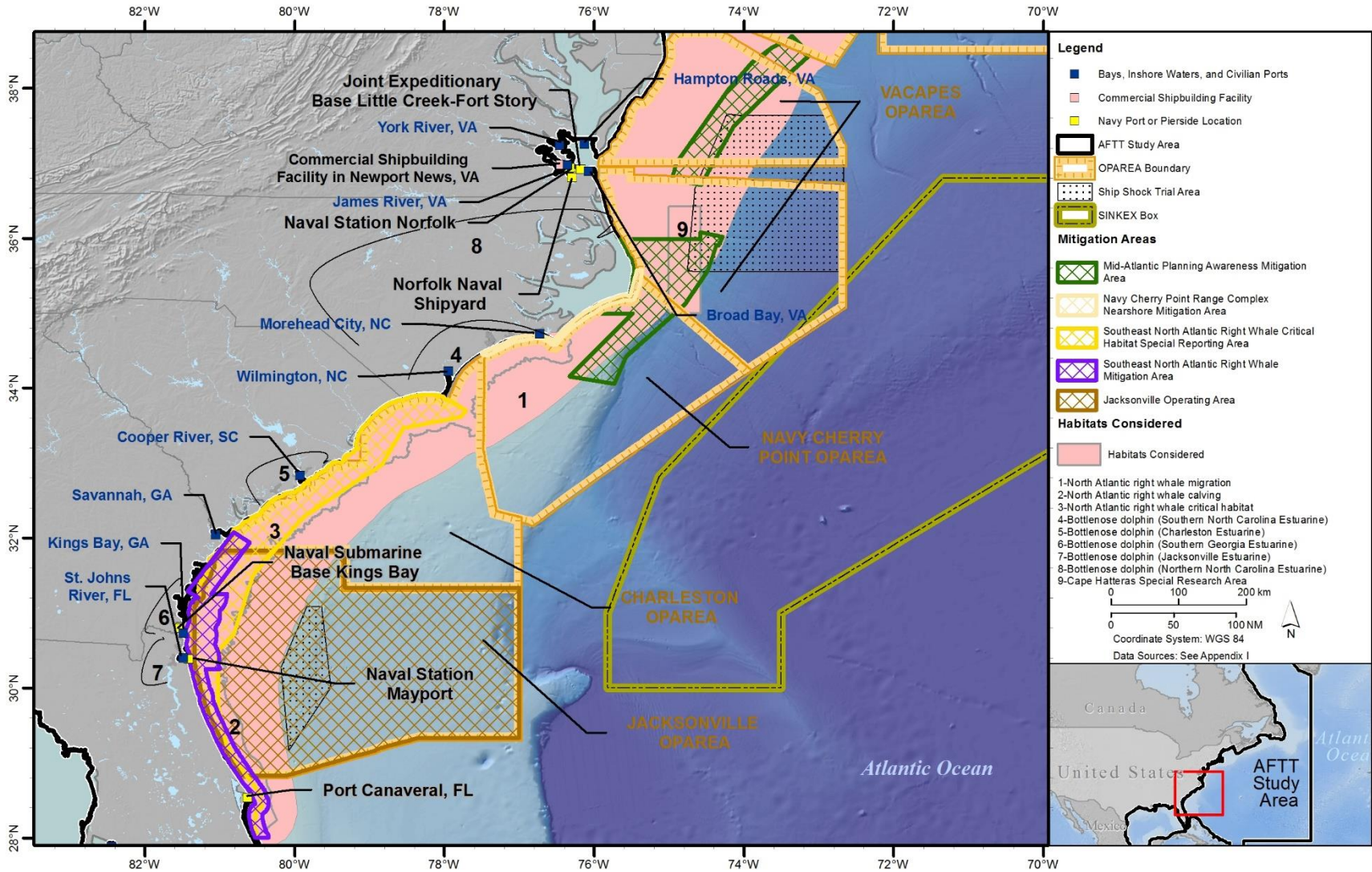


- 1-North Atlantic right whale feeding
- 2-North Atlantic right whale mating
- 3-North Atlantic right whale feeding
- 4-North Atlantic right whale feeding
- 5-North Atlantic right whale migration
- 6-North Atlantic right whale critical habitat

Mitigation Areas

-  Gulf of Maine Planning Awareness Mitigation Area
-  Northeast North Atlantic Right Whale Mitigation Area
-  Northeast Planning Awareness Mitigation Area
-  Mid-Atlantic Planning Awareness Mitigation Area

Mitigation Areas: Mid-Atlantic & Southeast



Comprehensive Environmental Tool Kit



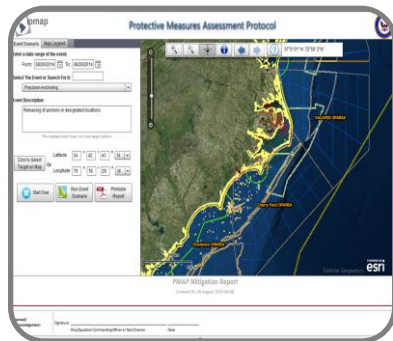
INTRODUCTION TO THE U.S. NAVY AFLOAT ENVIRONMENTAL COMPLIANCE TRAINING SERIES

- All Hands receive environmental training when they report onboard and annually thereafter
- Overview of relevant laws (e.g., MMPA, ESA, NEPA)
- Importance of environmental compliance and consequences of non-compliance
- Personal roles and responsibilities



MARINE SPECIES AWARENESS TRAINING (MSAT)

- COs, XO's, Lookouts, Bridge Watchstanders, and Aircrews must complete MSAT when they report onboard and at least once annually thereafter
- Principles of mitigation (e.g., PMAP, Lookout requirements)
- Marine species sighting cues, visual observation techniques, sighting response procedures
- Legally required by Navy permits



PROTECTIVE MEASURES ASSESSMENT PROTOCOL (PMAP)

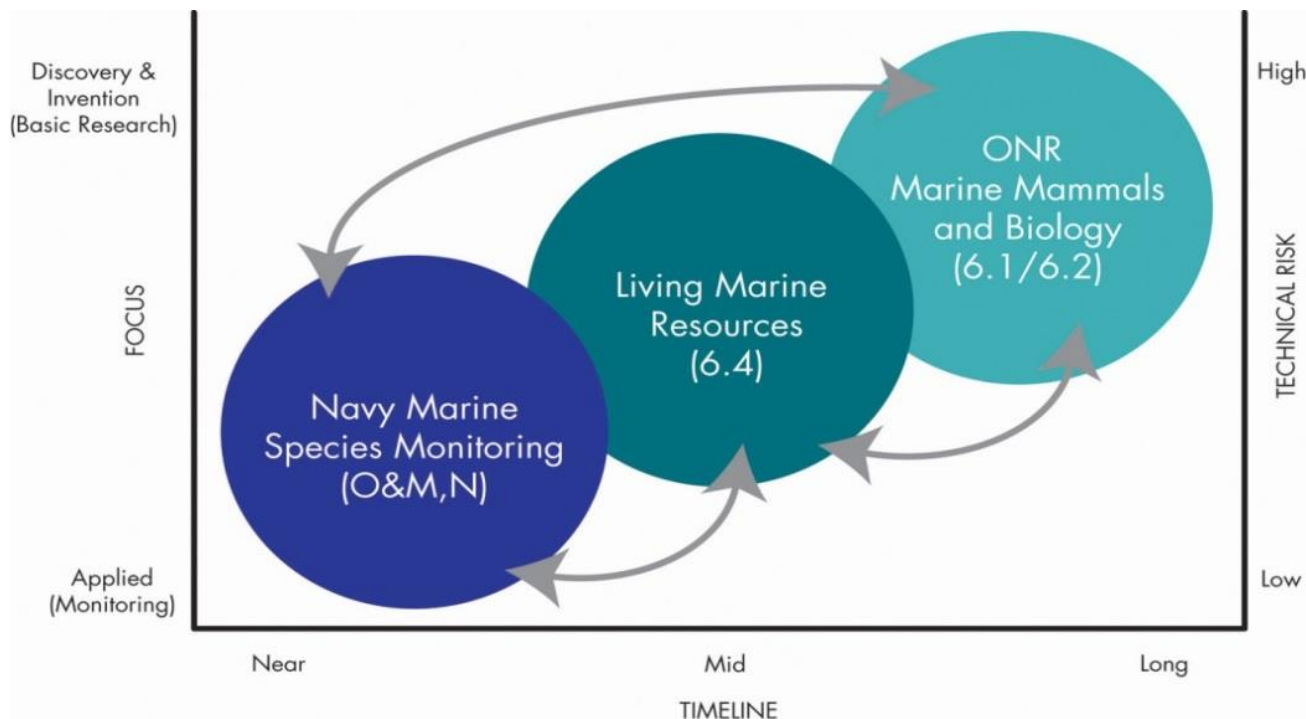
- PMAP is a Software Compliance Tool
- Provides mandatory mitigation measures
- PMAP Website is Electronic Toolbox:
 - Marine mammal information
 - Reporting & training requirements
 - General references

Navy Marine Resource Investments

From Research to Application



- Navy has invested ~\$300 million over past 10 years on research and monitoring efforts to better understand effects of sound on marine species
- Current annual funding is ~ \$25 million, 65% for research and 35% for monitoring
- There is coordination across all three programs



Marine Mammal Monitoring



- **Monitoring required under our MMPA/ESA permits to maintain compliance**
 - Permits may be revoked if mitigation and monitoring is not properly performed
 - Training and testing could be halted resulting in direct impacts to Fleet readiness
- **Approximately \$7M/year Navy-wide**
- **Navy uses a Strategic Planning Process to guide the investment of resources to most efficiently address monitoring objectives**



Marine Species Monitoring Program Goals



Focused studies to gather data on:

- What animals are present in areas where Navy trains and tests?
- For animals present, what types of stressors are they exposed to?
- What are responses/effects from these stressors?
- What, if any, are the consequences of the exposures to the stressors?

Monitoring Project Highlights

- **North Atlantic Right Whale Monitoring**
 - Tagging in SE, Mid-Atlantic DMON gliders, aerial surveys
- **Atlantic Behavioral Response Study**
- **Seal Tagging and Tracking in Southeast VA**
- **Behavioral Response of Humpback Whales to Vessel Traffic**
- **Mid-Atlantic Humpback Whale Catalog & Monitoring**
- **Mid-Atlantic Continental Shelf Break Cetacean Study**
- **Baseline Monitoring for Marine Mammals in the East Coast Range Complexes (passive acoustics, visual)**



Key Take-Aways



- **The Navy must comply with applicable environmental laws**
- **Without scientifically defensible compliance analyses, including mitigations, the Navy will lose training and testing space**
- **Lost training space will impact Navy's ability to achieve required readiness**
- **Science must be current and relevant**
- **Navy has made a significant investment in the science**
- **While there have been significant advancements made, our research needs to continue**
- **When knowledge is limited, conservative approach taken for impact analysis**
- **New science development, especially behavioral response and potential consequences, is needed**

Web Resources



- **U.S. Navy Marine Species Monitoring:**

<http://www.navymarinespeciesmonitoring.us/>

- **AFTT Permit and Supporting Documents:**

<https://www.public.navy.mil/usff/environmental/Pages/aftt.aspx>

- **Living Marine Resources:**

<http://www.lmr.navy.mil/>