



UNDERSEA WARFARE TRAINING RANGE

DRAFT ENVIRONMENTAL IMPACT STATEMENT

*Presented To:
South Atlantic Fisheries Management Council
March 2, 2006*

Overview of EIS Process

- **Purpose and need**
- **Proposed action**
- **Alternatives**
- **Environmental analyses**
- **Mitigation and monitoring**
- **Public comment**

Anti-submarine Warfare is Critical

- **Submarines still pose a threat to seaborne forces**
- **More than 90% of joint military equipment (Army, Air Force, Marines) still flows by sea**
 - **This is not merely a Navy problem, it is an American security problem**
 - **Great deal of humanitarian aid (tsunami relief, hurricane relief, humanitarian evacuation) comes by sea**
- **To defend our nation, to maintain freedom of the seas, to pursue our national interests, we need a very capable anti-submarine warfare force**

The Operational Environment has Changed

- **The threat has changed**

- Submarines are quieter today than they were during the Cold War

- **Where we operate has changed**

- Closer to land, rather than in open ocean

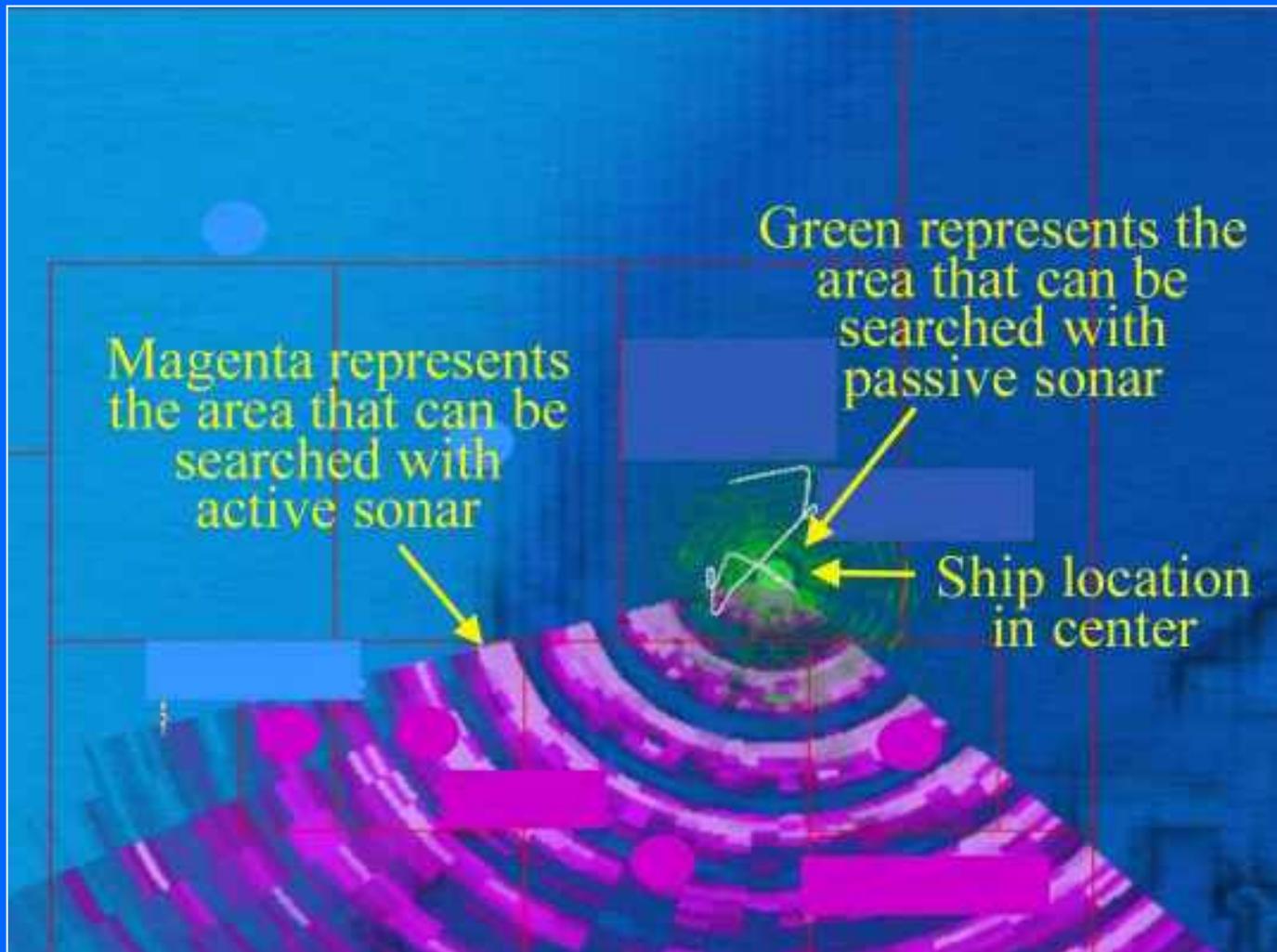
- Relatively shallow water, very complex ocean environment

Active Sonar Training is Important

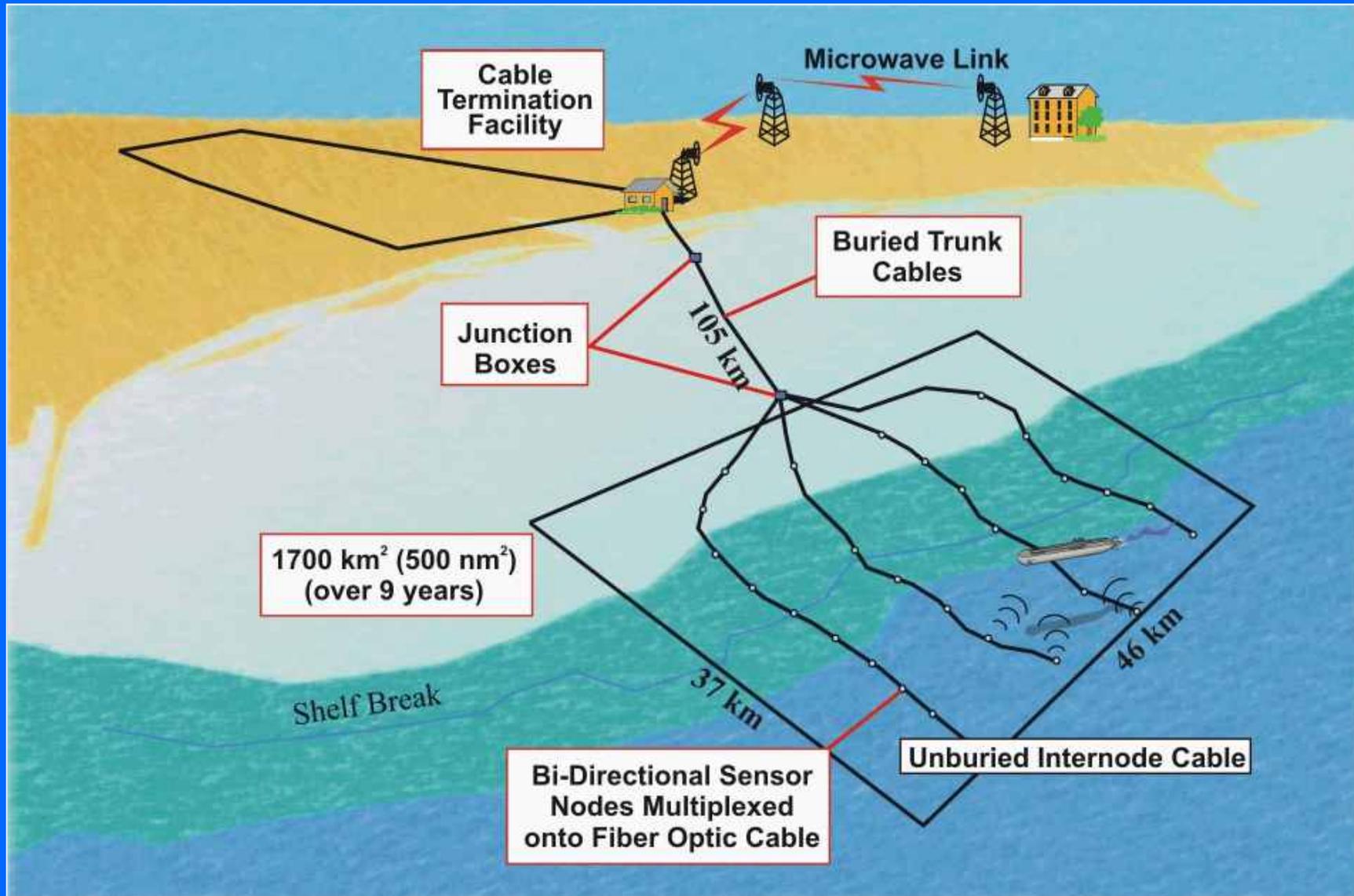
- **Passive sonar (listening) increasingly less effective as submarines become quieter**
 - Frequently can't detect a submarine passively until he's close enough to shoot
- **Active sonar (pinging) is more effective**
 - Not affected by submarine quieting improvements
 - While passive detection ranges are closing in, active detection ranges are moving out
- **Training with active sonar in real-world environments is critical**

Why Do We Need Active Sonar?

- Because submarines are getting quieter...

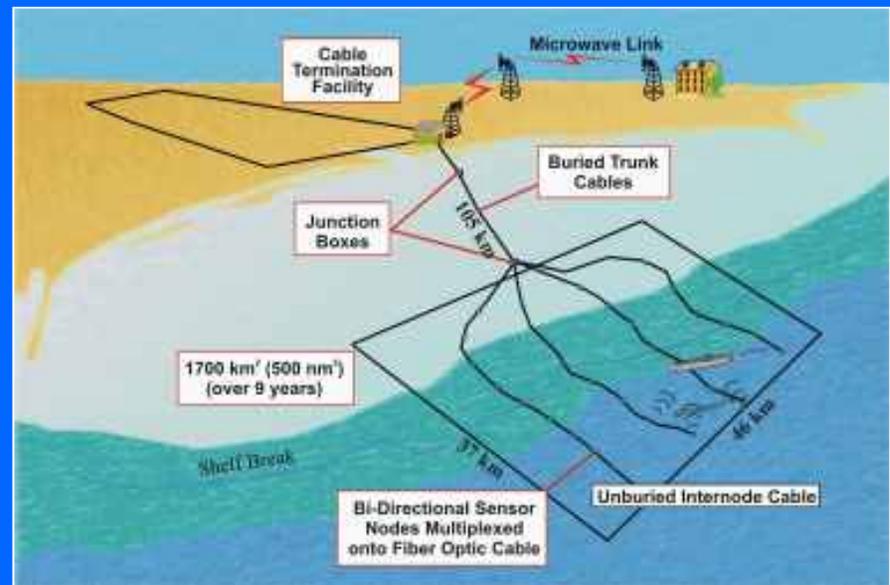


Proposed Action: Establish USWTR



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- 500 nm² instrumented off-shore range with cables and sensors
- Water depth from 120 to 900 feet
- Buried cable connecting range to onshore facilities
- Onshore cable termination facility to receive and transmit data
- Construction schedule: 3 increments over a 9-year period (3 years per phase)



Range Concept

Proposed Action: Training on USWTR

- **Anti-submarine warfare exercises with submarines, ships, and aircraft**
- **Training targets**
 - **Submarines**
 - **Submarine surrogates (mechanical targets)**
- **Use active and passive sonar**
- **Non-explosive torpedo launches**

Alternatives: Site Selection Process

Step 1:

Screen East Coast and Gulf of Mexico for initial areas using size and depth criteria



Step 2:

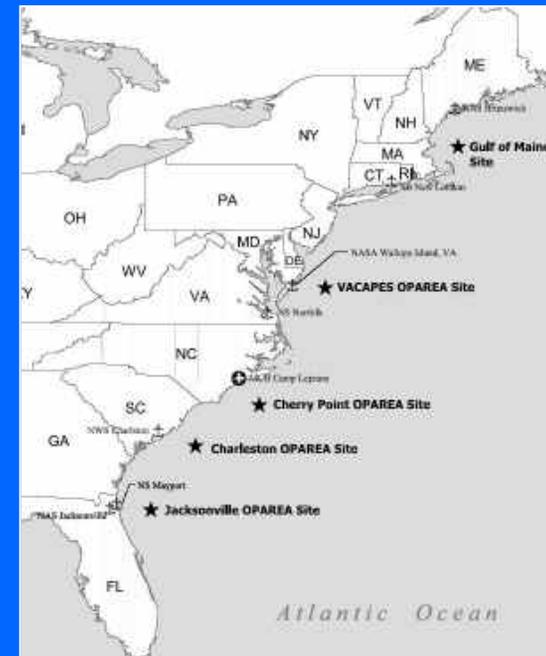
Identify candidate sites within initial areas (Gulf of Mexico eliminated based on distance)



Step 3:

Screen candidate sites for three operational criteria:

- *Proximity to a federal airfield*
- *Suitable weather conditions*
- *Secure federal shore landing site*



Alternatives Evaluated

- Three potential sites (A, B, C) identified and fully evaluated in Draft OEIS/EIS
- Site A is the Navy's preferred alternative
 - Best replicates potential threat environments
 - Proximity to homeport/ bases



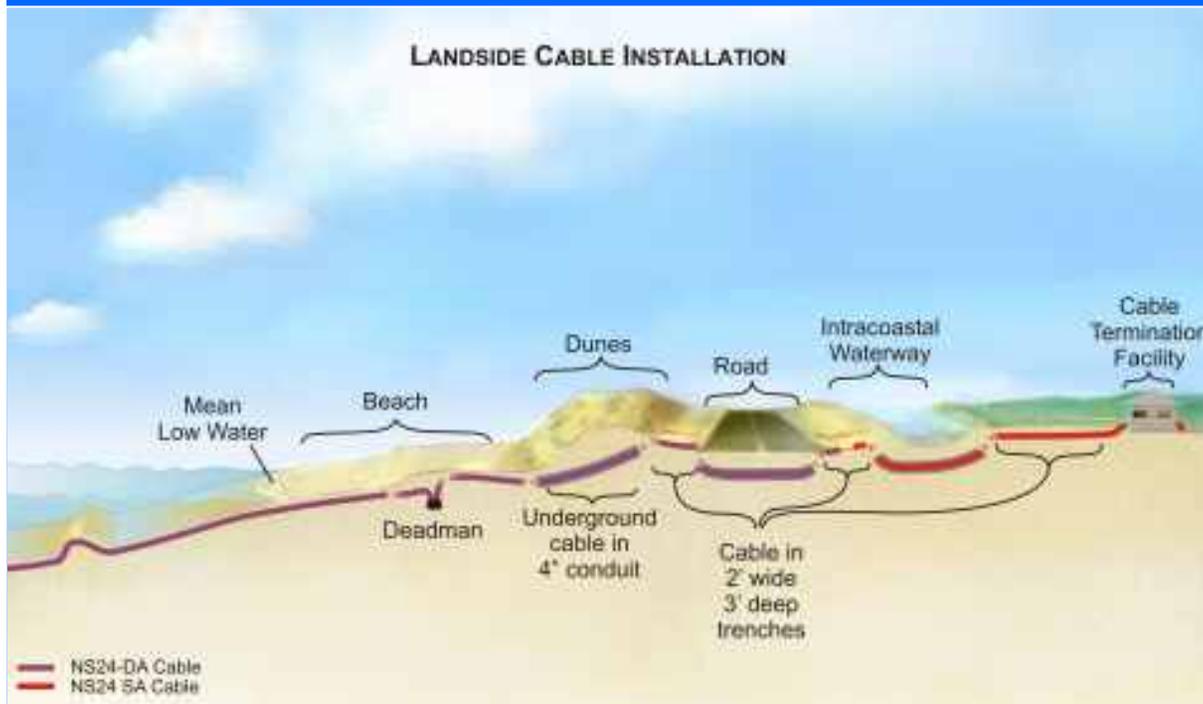
We Will Train in an Environmentally Responsible Manner

- **We will take common-sense protective measures**
 - **We will search for marine mammals before beginning training events**
 - **We will listen for marine mammals using passive sonar, when available, before going active**
 - **We won't operate active sonar any more than we have to for training purposes**

Potential Environmental Issues

- **Physical environment**
- **Ecological resources**
- **Acoustical environment**
- **Socioeconomic environment**
- **Cultural resources at sea**
- **Landside environment**
- **Coastal zone management**
- **Cumulative effects**

Landside and Nearshore Impact Analyses



- **Clean Water Act Section 404 to be determined**

- Site design for cable termination facility expected to avoid or minimize wetland impacts

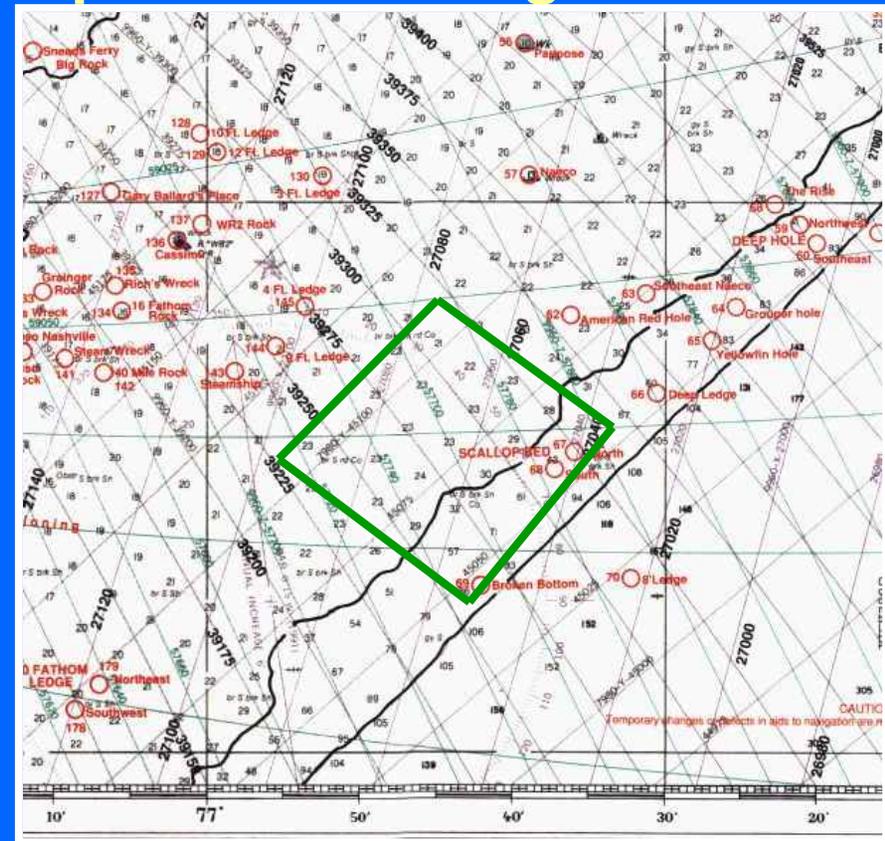
- **Coastal Zone Management Act (CZMA)**

- Coastal Consistency Determinations for NC, VA, FL included with DOEIS/EIS

- **Rivers and Harbors Act Section 10 for cable installation**

Evaluating Effects to Commercial and Recreational Fisheries

- Essential Fish Habitat consultation
- Several known fishing hotspots within range areas
- NOTMARS would be issued 72 hours prior to exercise torpedo firing (all non-explosive)
- Nodes will be trawl resistant and cables buried in areas of significant groundfishing activity



Acoustic Effects Overview

- **Acoustic effects analysis was extensive**
- **No impact on:**
 - **Plankton and invertebrates**
 - **Seabirds**
 - **Sea turtles**
 - **Pinnipeds (e.g. seals) and manatees**
- **Analysis focused on whales and dolphins**
- **Minimal impact on fish**

Acoustic Effects on Fish and Fish Habitat as Presented in DEIS

- In general, manmade sounds may temporarily interfere with orientation and communication in fish and some fish may respond behaviorally
 - Most studies have focused on low frequency and broadband sounds such as ship noise or airguns
 - No evidence that exposure to intermittent, loud, mid-frequency sounds leads to any long-term behavioral disruptions
- Lower range of mid-frequency sonar (1 - 3 kHz) is within the hearing range of many fish that are hearing specialists
 - Majority of sonar sources on the range are > 3 kHz
- Mid-frequency acoustic devices are used in gill net fisheries to deter marine mammals were studied for their effects on fish
 - The researchers concluded the fish either did not hear the sounds or were not disturbed by the sound
 - Herring catch rates in alarmed and unalarmed nets was not significantly different

Fish and Fishing Comments to Date

- Clarify range access and community coordination
- Expand evaluation of acoustic effects on fish
- Provide more detail on potential construction effects on live/ hardbottom habitat
- Reassess compatibility of instrumentation with groundfishing, especially scallop dredging/trawling
- Research recent literature on potential acoustic effects (comment related to giant squid and snow crabs)
- The Navy will continue to collect available data to expand the EIS analysis based on the public comments

Laws and Regulations

- **Magnuson-Stevens Fishery Conservation and Management Act (1996 amendments - Essential Fish Habitat)**
- **Marine Mammal Protection Act (MMPA) requires authorization for actions that might “harass” marine mammals**
- **Endangered Species Act (ESA) requires federal agencies to consult for actions that may affect threatened and endangered species**

Evaluating Acoustic Effects to Marine Mammals

- **Acoustic effect modeling considered multiple inputs:**
 - Acoustic source levels
 - Oceanographic characteristics
 - Species densities
 - Impact thresholds/criteria
- **Impact thresholds/criteria**
 - Determine the potential effects of mid-frequency sound on marine mammals
 - Research what levels of sound may result in those effects
 - Evaluate whether the effects of sound are considered harassment under MMPA

Compliance with Other Laws

- **Navy works with NMFS to ensure compliance:**
 - **ESA consultation required**
 - **MMPA authorization required**
 - **Rulemaking by NMFS is a public process**
 - **Rule/Authorization covers 5 year**
 - **NMFS issues letter of authorization (LOA) annually**

Marine Species Mitigation

- **Mitigation Measures**

- Lookout training for observing marine species
- Mitigation for range operations



- Lookouts on all ships, planes, and subs
- Passive acoustic detection by subs
- Sonar transmission levels reduced when marine mammals detected within 350 yds
- Protective measures during vessel transits for migrating North Atlantic right whales
- Landside construction
 - Protection of sea turtle nests (Site A, C) and protected plants (Site A)



Long-Term Marine Species Monitoring and Conservation

- **Long-term monitoring program and conservation measures**



- **Baseline population studies for 2 years prior to range operations**
- **Continued evaluation of population trends over time and reporting to National Marine Fisheries Service**
- **Research support to improve the understanding of effects of sound on marine species**

Schedule

- **Draft OEIS/EIS Available** **October 2005**
- **Public Meetings** **November 2005**
- **End of Comment Period** **30 January 2006**
- **Final OEIS/EIS Available** **Summer/Fall 2006**
- **Record of Decision** **Fall 2006**



Acoustic Model Results: Behavioral Effects

- **Annual MMPA Level B Harassment Estimates**
 - Site A – 969 total exposures (15 for 2 ESA species)
 - Site B – 1203 total exposures (49 for 5 ESA species)
 - Site C – 520 total exposures (0 for ESA species)
- **All raw acoustic exposure estimates are without consideration for mitigation**
 - Harassment ‘zone’ generally within 350 yards of surface ships
 - Lookouts very effective for visual surveys this close to ship

Acoustic Model Results: Beaked Whales

- **Specific mechanisms leading to beaked whale strandings that may be associated with mid-frequency sonar are not understood**
 - Navy participated in a complete investigation of a beaked whale stranding in the Bahamas (year 2000)
- **Therefore, beaked whales predicted to receive sound exposure that may cause behavioral effects (Level B) are considered as potential injury, or Level A harassment**
- **Level A harassment annual estimates for all sites:**
 - Site A - 29 beaked whales
 - Site B - 3 beaked whales
 - Site C - 40 beaked whales

Undersea Warfare Training is Critical

- **The ocean is a very complex environment**
 - Takes a highly trained operator
- **Computer simulated (synthetic) training is an important part of our training program, but simulated training alone is not sufficient**
- **We need to train in representative conditions**
 - Both to confirm our training adequacy and to validate our synthetic training models