



Gulf of Mexico Range Complex

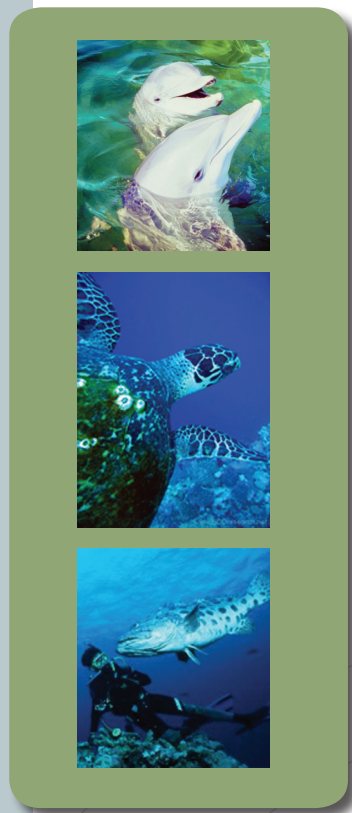
Marine Resources, Protection, and Research

The Navy shares the ocean environment with marine mammals, fish, turtles, birds, and other wildlife that rely on the marine habitat. Understanding the marine environment and taking precautions to minimize effects on marine resources are Navy priorities.

PUTTING THE LATEST SCIENCE AND TECHNOLOGY TO PRACTICAL USE

The National Environmental Policy Act (NEPA) process gives the Navy an opportunity to review and assess its activities, ensuring that the benefits of recent scientific and technological advances are applied toward minimizing environmental effects. As part of this process, scientists compile and analyze distribution, abundance, and movement patterns, as well as potential acoustic effects. Examples of available information include:

- Marine Resource Assessments: Comprehensive reviews of protected species sighting, stranding, and survey data, as well as peer-reviewed literature and National Marine Fisheries Service reports, including stock assessments and recovery plans.
- Density Estimates: Estimates of species abundance in a study area based on analysis of shipboard and/or aerial survey data.
- Scientific Literature and Study Results: Results of research focused on hearing and diving physiology, behavioral responses to human generated sound, and reducing the effects of sound.
- Sound Propagation and Effects Modeling: Tools to model how sound travels through water and potentially affects marine species.



THE NAVY'S ONGOING PROTECTIVE MEASURES

Environmental protection efforts have been a part of Navy activities for decades, enabling vital Navy training while protecting the marine environment. The Navy has developed a sophisticated set of procedures and tools to avoid harm to marine species and habitats. Every Navy ship and its crew follows these procedures and is thoroughly trained in their use. Examples include:

Avoiding important marine habitats

Sargassum mats (floating seaweed) and coral reefs are important habitats for marine species. Sailors are aware of coral and live hard bottom areas and monitor for Sargassum mats, and implement avoidance measures to ensure that neither is affected. Training is also planned to avoid conducting potentially impacting activities in and around established National Marine Sanctuaries. In addition, North Atlantic right whale critical habitat and migration routes are avoided to the extent possible.



Navy shipboard lookouts are highly qualified and experienced observers of the marine environment. These personnel undergo extensive training to become qualified, including specific education in marine species awareness.

SPECIFIC AT-SEA OPERATION BUFFER ZONES

The Navy establishes buffer zones within its standard operating procedures. Exercises will be conducted only when the specified buffer zone is visible and marine mammals and sea turtles are not detected within the target area and the buffer zone. The size of the buffer zone depends on the type of training operation being conducted. Examples of these buffer zones include the following:

- For bombing events using High Explosive (HE) bombs, the Navy establishes a 5,100 yard radius buffer zone from the intended target.
- For bombing events using non-explosive practice munition (NEPM) bombs, the Navy establishes a 1,000 yard radius buffer zone from the intended target.
- For surface-to-surface gunnery events using grenades, 76 mm, 40 mm, and 20 mm rounds, the Navy establishes a 200 yard radius buffer zone from the intended target.

Establishing standoff distances for marine species

Naval vessels avoid approaching whales head-on, and maneuver to keep at least 500 yards away from observed whales.

Monitoring for marine species prior to training exercises

Prior to training with ordnance, Navy personnel visually monitor the ocean area for marine mammal and sea turtle activity. If the animals are present, the training activity may be altered or suspended to minimize the potential for effects.



Safety Zones: The Navy adheres to an avoidance distance of 460 meters (approximately 500 yards) if a whale is sighted.

Reducing vessel speeds to avoid interactions

While in transit, Naval vessel operators are alert at all times, use extreme caution, and proceed at a safe speed so that the vessel can take proper and effective action to avoid a collision with any marine animal.

Posting shipboard lookouts

Navy shipboard lookouts (also referred to as "watchstanders") are qualified observers of the marine environment. These personnel undergo extensive training, approved by the National Marine Fisheries Service, to become qualified, including specific education in marine species awareness. This training also addresses the watchstander's role in environmental protection, laws governing the protection of marine species, and the Navy's commitment to environmental stewardship.

SUPPORTING VITAL RESEARCH

The U.S. Navy takes its environmental responsibilities seriously and is a world leader in marine mammal research. In 2008, the Navy provided over \$26 million to universities, research institutions, federal laboratories, private companies, and independent researchers around the world to study marine mammals. Over the past five years, the Navy has provided over \$100 million for marine mammal research. The Navy sponsors approximately 70% of all U.S. research concerning the effects of human-generated sound on marine mammals and 50% of such research conducted worldwide. This ongoing research includes studies on hearing and hearing sensitivity, auditory effects, dive and behavioral response models, noise impacts, beaked whale global distribution, modeling of beaked whale hearing and response, tagging of free ranging marine animals at sea, and radar-based detection of marine mammals from ships. These studies are crucial to the overall knowledge base on marine species and the potential effects from anthropogenic (human-made) sound and Navy training activities. Major topics of Navy-supported research include:

Better understanding of marine species distribution and important habitat areas

The Navy actively supports several efforts to map marine species distribution and uses the latest techniques to develop predictive models of marine mammal habitat and density. The Ocean Biogeographic Information System, Spatial Ecological Analysis of Marine Megavertebate Animal Populations (OBIS-SEAMAP) project, led by researchers at Duke University, is developing a global database for marine mammal, seabird, and sea turtle distribution and abundance information. Two current projects funded through the Strategic Environmental Research & Development Program (SERDP) are using cutting-edge spatial modeling and statistical methods to develop predictive models of marine mammal distribution and abundance that will be extremely beneficial to the Navy for environmental planning and avoiding potential effects from training activities.

Developing methods to detect and monitor marine species prior to and during training

The Navy is currently researching and developing the Marine Mammal Monitoring on Navy Ranges program (M3R). The goal of this program is to develop a toolset for passive acoustic detection, localization, identifications, and tracking of marine mammals using existing Navy undersea range infrastructure.

Understanding the effects of sound on marine mammals, sea turtles, and fish

The Environmental Consequences of Underwater Sound (ECOUS) program brought together expert researchers to discuss the effects of human-produced underwater sound on marine life. The Navy is also actively engaged in the Federal Advisory Committee on the Effects of Anthropogenic Noise on Marine Mammals.

Developing tools to model and estimate potential effects of sound

The Effects of Sound on the Marine Environment (ESME) program focuses on producing a computer model of animal response to sound produced by human activities, including sonar, explosives, and acoustic communication.

Public involvement is a fundamental part of the Gulf of Mexico Range Complex EIS/OEIS development and the Navy wants and appreciates your comments. The Navy has established several venues and informational resource areas for the public to learn and provide input.

Comments on the Draft Gulf of Mexico Range Complex EIS/OEIS will be accepted via mail, fax, or the project Web site. All comments should be submitted no later than February 16, 2009 for consideration in the Final Gulf of Mexico Range Complex EIS/OEIS.

**THE NAVY
WANTS
YOUR
INPUT!**

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