

In Defense of Coral Reefs

by Lorri Schwartz



Phillip Lobel and Lisa Kerr Lobel

Coral reefs are the world's most biologically diverse marine ecosystems. They consist of a vast assemblage of plants, animals, and microbes, many of which are still scientifically unknown. Reef ecosystems provide habitat and food for fish, substances for new medicines, revenue from tourism and recreation, and protection from coastal storms. However, studies over the past 10 years show that corals are deteriorating at an alarming rate. Human activities such as coastal development, destructive fishing practices, pollution, and sedimentation are causing coral reef degradation worldwide. As a result of these impacts, the National Marine Fisheries Service (NMFS) recently listed the elkhorn coral (*Acropora palmata*) and staghorn coral (*A. cervicornis*) as threatened species under the Endangered Species Act.

In response to growing concern, Executive Order (EO) 13089 (issued June 11, 1998) directed federal agencies to study, restore, and conserve coral reefs in the United States. It also established the U.S. Coral Reef Task Force to coordinate federal protection. The Task Force is co-chaired by the Secretaries of the Departments of Interior and Commerce, and is composed of representatives from participating federal agencies, states, territories, and Freely Associated States. The Department of Defense, a member of the Task Force, is represented by the Assistant Secretary of the Navy (Installations and Environment). The Task Force oversees implementation of the EO, guides coral reef initiatives, and works in cooperation with other agencies and stakeholders. It is also responsible for coordinating a comprehensive program to 1) map and monitor U.S. coral reefs, 2) develop and implement research

and mitigation efforts, and 3) assess the U.S. role in international protection.

In 2000, the Navy, with assistance from the other military services, submitted the DoD Coral Reef Protection Implementation Plan. The DoD plan contains a comprehensive overview of Army, Navy, Air Force, and Marine Corps policies and programs related to coral reef protection, describes military activities potentially affecting coral reef ecosystems, and lists funding sources for conservation. It includes a discussion of DoD research, outreach, and stewardship initiatives to protect and enhance coral reef ecosystems. The plan continues to be a useful source of environmental information and requirements for military personnel, and it is an excellent communications vehicle for disseminating information to other federal agencies and the public.

The DoD uses a variety of programs to identify and avoid impacts to coral reefs, but the most important of these is environmental planning. The Navy evaluates major operations and training exercises for potential environmental impacts under the National Environmental Policy Act and the Coastal Zone Management Act. Although EO 13089 applies only to U.S. coral reef ecosystems, actions conducted internationally are reviewed under EO 12114, Environmental Effects Abroad of Major Federal Actions. Environmental plans for training and combat exercises provide for the proper management of ship and vehicular operations to avoid damage to coastlines, reefs, and beaches. The DoD also uses information from baseline ecological surveys, and innovative maneuvering techniques to ensure that coral reefs are protected during testing and training operations. The Navy

is using a marine-based Geographic Information System (GIS) system that will contain coral reef monitoring data, reef locations, habitat conditions, and related marine fisheries information. Installations near coral reef ecosystems also include ecological information on reefs and conservation measures in their Integrated Natural Resources Management Plan.

Part of the DoD Coral Reef Protection Implementation Plan addresses marine pollution. In accordance with the Act to Prevent Pollution from Ships, DoD complies with strict shipboard pollution prevention standards. Shipboard equipment has significantly reduced the amount of pollutants and waste products used on military vessels. DoD continues to develop innovative technology such as “compressed melt units,” which compress all plastic waste for storage on board. This technology has allowed DoD to implement a “zero plastics discharge” policy. Now, all plastic waste is brought back to shore for disposal or recycling. Biodegradable materials such as cardboard are processed by on-board “pulpers” into a non-floating slurry that is non-toxic to marine organisms and authorized for discharge.

In addition to protecting the marine environment during normal operations, DoD assists in special circumstances, with cleaning up disasters at sea, such as catastrophic oil spills. These spills are devastating to marine wildlife and can be very detrimental to corals. The Navy possesses one of the world’s largest inventories of oil pollution response equipment, and it is available from a global network of installations. In fact, Navy fleet skimmers collected half of the oil recovered from the *Exxon Valdez* spill in Alaska. Additionally, upon a formal request by the government of Yap (one of the Federated States of Micronesia), the Navy successfully off-loaded nearly 2 million gallons of oil from a sunken World War II oil tanker, the *USS Mississinewa*, which began leaking oil near Ulithi Atoll (another island of the Federated States). The DoD also has well-established compliance programs on the installation

level to prevent oil spills and to provide a rapid response and clean-up.

The DoD plan also addresses the proliferation of non-native and invasive species which can damage both terrestrial and aquatic ecosystems. These intruders upset the natural balance of marine ecosystems, competing with or displacing corals and reef fish communities. The transfer of ballast water carried by large commercial ships is the greatest source of aquatic invasive species worldwide. To prevent such accidental introductions from military vessels, DoD has a “double exchange” policy. It requires that all tanks containing ballast water taken on within 3 nautical miles of shore or in polluted areas be purged twice with clean seawater while the ship is farther than 12 nautical miles from shore.

Activities conducted on land and near shore are an important part of coral reef protection for DoD. Such activities as agricultural operations and dredging, can affect the health of coral reef ecosystems if responsible conservation practices are not used. Runoff from landscaping and farmland generally contains pesticides, herbicides, and fertilizers that, over time, can degrade the health of nearby waters. To prevent the introduction of these harmful substances into the marine environment, military installations use best management practices to control this non-point source pollution. The DoD also minimizes sedimentation through erosion control measures and restorative projects when appropriate, all of which is detailed in our installation Integrated Natural Resources Management Plans.

In addition to producing the Coral Reef Protection Implementation Plan, DoD developed the Coral Reef Conservation Guide, a general outreach



NOAA Fisheries

The elkhorn coral was listed recently as a threatened species.

brochure to heighten awareness within the Department. The guide provides basic information on coral reef ecosystems and discusses why their protection is important. It also gives an overview of DoD activities that could affect coral reef ecosystems and outlines laws and policies regarding coral reef protection. A DoD training course is offered periodically for natural resource managers and other DoD personnel to promote these coral reef protective measures.

It is DoD’s mission to be good stewards of the lands and waters in which it operates. As evidence of this commitment, DoD continues to be an active member of the Coral Reef Task Force and work in cooperation with partners to research, restore, and protect coral reefs.

The DoD Coral Reef Protection Implementation Plan is available for download via the Defense Environmental Network Information Exchange (DENIX) at: www.denix.osd.mil.

Lorri A. Schwartz, with the Naval Facilities Engineering Command in Washington, D.C., can be reached at (202)685-9332.