

Deep Sea Coral Exploration (R0304)

Deep Sea Coral Distribution and Habitat in the Aleutian Archipelago

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The Problem: The deep ocean is an exciting place for the thrill seeker, adventurer, and scientist to explore. Many species of corals are strikingly beautiful, form large groves, but are sensitive to human-induced and natural change. Sea corals and sponges are likely to provide important habitat and refuge for a variety of fish and invertebrates, including commercially important rockfish, cod, and crabs.

Fishery records indicate that deep water corals and sponges are inadvertently killed and damaged by major fisheries throughout much of the Aleutian Island archipelago. Simply closing the areas known to have corals and sponges to fishing may not be the solution because the fisheries will be forced to move to other areas. In these other areas the amount of fish caught will be lower and the damage to corals found there may be just as great a problem. To solve this problem biologists are assessing the importance of corals and sponges as habitat for commercially important fish and invertebrates as well as the extent of fishing gear impacts on coral and sponge habitats.



The Research: Using deep sea mapping technology and submersibles, this project will provide the first detailed mapping of coral and sponge habitats for the Aleutian Islands, where species diversity is unusually high, and where damage to corals and sponges is a challenging problem in the area's fisheries that use bottom contact fishing gear like trawls and longlines. The goal of this research is to provide information on corals and sponges in the Aleutians that is needed for making critical fishery management decisions to protect coral and sponge habitats, and to maintain sustainable fisheries in the North Pacific and Bering Sea.

Surveys of coral and sponge distribution in the central Aleutian Islands were conducted in 2003 using the *Delta* submersible and the support vessel *Velero IV*. In 2004, NOAA's Undersea Research Program funded dives using the Woods Hole Oceanographic Institute's submersible Jason II. Submersible dives were conducted as deep as 1.8 miles. Corals and sponges were widely distributed at these study sites. Over 260 corals, 45 sponges, 165 miscellaneous invertebrates, and 82 rocks were collected during these dives.

Preliminary results indicate that representatives from all seven coral families known to occur in the North Pacific were collected and that several of the collected sponges represent species new to science. These findings will be used to construct a model to predict where coral habitat is located in the Aleutian Islands. The model will provide fisheries managers with a powerful tool to conserve coral habitat.

A Surprise! Project biologists mapping of the seafloor near the Aleutian chain, using sonar, in 2003 discovered the regions first undersea volcano! The volcano, named Amchitka Reef by Aleut elders, was covered with coral, invertebrates, and fish.

The North Pacific Research Board seeks to build a clear understanding of the North Pacific, Bering Sea, and Arctic Ocean ecosystems to enable effective fisheries management and the sustainable use of marine resources. www.nprb.org

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