
# *A Marine Biogeographic Assessment of the Northwestern Hawaiian Islands*

## BACKGROUND

*A Marine Biogeographic Assessment of the Northwestern Hawaiian Islands* was prepared by the Center for Coastal Monitoring and Assessment's Biogeography Branch and the Office of National Marine Sanctuaries to support the long-term protection of the marine resources within the Papahanaumokuakea Marine National Monument (PMNM). President George W. Bush established the PMNM in 2006, making it one of the largest marine protected areas in the world.

The report is the first of its kind, providing a comprehensive description and analysis of the distribution of the living marine resources within the monument.

The assessment represents the contributions of over 50 scientists, as well as analysis from new and existing data sets. This effort contributes to the conservation of the PMNM's marine resources by providing a suite of spatially and temporally articulated products (e.g., distribution maps) to inform management decisions. The biogeographic assessment is broad in scope and covers the following areas:

- Oceanography
- Geology & Benthic Habitats
- Benthic Communities
- Fishes
- Marine Protected Species
- Seabirds
- Nonindigenous & Invasive Species
- Connectivity & Integrated Ecosystem Studies
- Management Concerns & Responsibilities

## KEY FINDINGS

Significant findings highlighted in the report include:

- There are approximately 80 types of coral in the monument, nearly half of which are found only in Hawaii.
- Fifteen whale species have been observed within the monument's boundaries, more than researchers previously thought.
- Half of the fish biomass in the NWHI is made up of large predators such as sharks, jacks and grouper, helping to create a healthy, stable reef.
- Some seabirds feed within in a few miles of the islands while others, such as the Laysan albatross, venture as far as Alaska and California.

## THE BIOGEOGRAPHIC PROCESS

Biogeography provides a framework to integrate species distributions and life history data with information on habitats of a region to characterize and assess living marine resources within a marine protected area. The biogeographic data are integrated in a Geographical Information System to enable visualization of species' spatial and temporal patterns and to predict changes in abundance that may result from a variety of natural and anthropogenic perturbations or management strategies.The complexity of products from biogeographic analysis range from simple species distribution maps of a particular habitat, to more complex products that combine single data layers to create maps of biodiversity or habitat complexity.

## MORE INFORMATION

To request a hard copy or CD version, complete with GIS files, e-mail: NWHIAssessment@noaa.gov.

**Download Report:** http://ccma.nos.noaa.gov/ecosystems/sanctuaries/nwhi.html.

**Biogeography Branch:** http://ccma.nos.noaa.gov/about/biogeography/welcome.html

**Office of National Marine Sanctuaries:** http://sanctuaries.noaa.gov/

**Papahanaumokuakea Marine National Monument:** http://www.hawaiireef.noaa.gov/about/welcome.html

NOAA
BIOGEOGRAPHY BRANCH
CENTER FOR COASTAL MONITORING AND ASSESSMENT