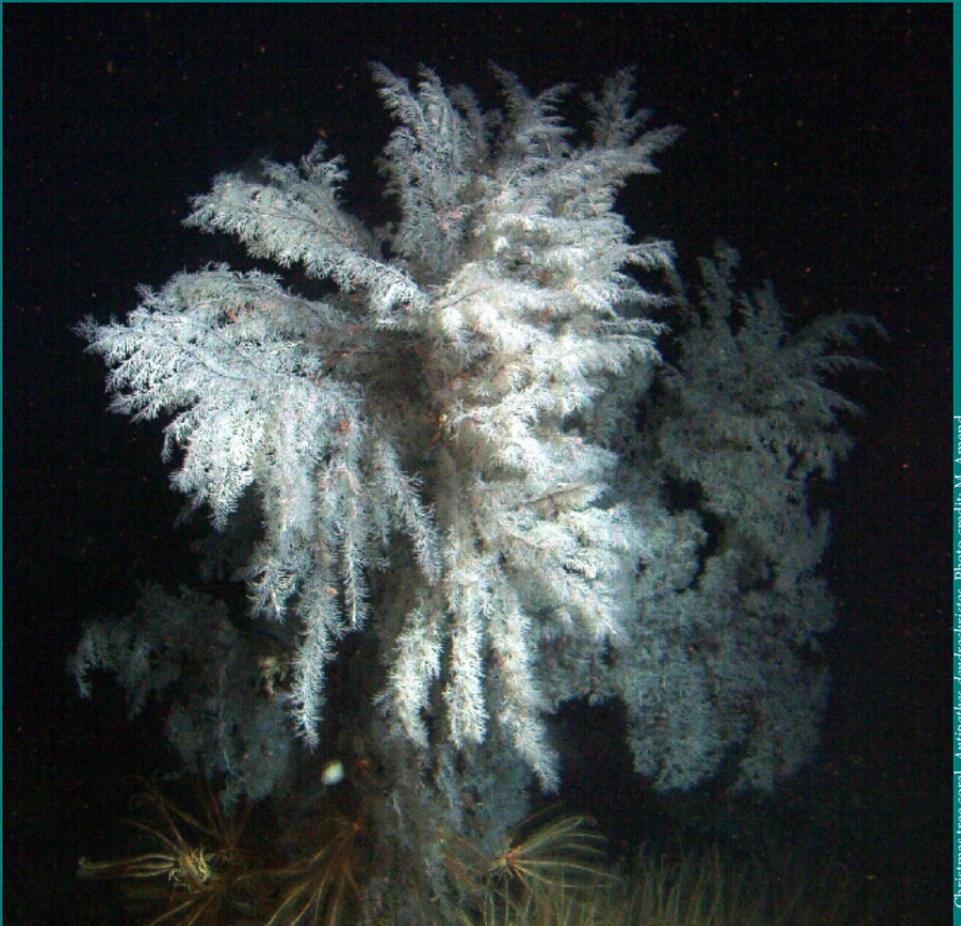


NOAA

Understanding and Conserving Deep-sea Coral and Sponge Ecosystems



NOAA supports sound science and effective management to conserve and sustain deep-sea coral and sponge ecosystems.



Christmas tree coral, *Antipathus dendroiridios*. Photo credit: M. Amend.

The National Oceanic and Atmospheric Administration (NOAA) coordinates deep-sea coral and sponge activities under the auspices of NOAA's Coral Reef Conservation Program and mobilizes expertise from the National Marine Fisheries Service (NMFS), Office of Oceanic and Atmospheric Research (OAR), National Ocean Service (NOS), and National Environmental Satellite, Data and Information Service (NESDIS).

Recent research has revealed remarkably complex and fragile coral communities in the deeper waters of the ocean. Deep-sea corals, also known as deep water or cold-water corals, can live for hundreds or thousands of years. Forming thickets or reef-like structures, they provide habitat for rich and diverse fish and invertebrate communities. Some communities may even be considered as hotspots of biological diversity. These important deep-sea coral and sponge habitats have been discovered on continental margins and slopes, canyons, and seamounts around the world and in many areas in the U.S. exclusive economic zone.

Deep-sea coral and sponge assemblages are vulnerable to damage from bottom-tending fishing gears, especially bottom-trawling, and may also be affected by energy exploration and development, deployment of cables and pipelines, and other human activities that disturb the sea floor. Recovery from damage may take decades to centuries, as most deep-sea coral and sponges grow slowly.

Research on Deep-Sea Coral and Sponge Ecosystems

In recent years, NOAA has increased activities to locate, study, and protect deep-sea corals and sponges. The following are key information needs to better understand and improve management of these ecosystems:

- Locate and characterize deep-sea coral and sponge habitats.
- Understand the biology and ecology of deep-sea coral and sponges.
- Model the distribution of deep-sea coral and sponge habitats.
- Understand the biology and ecological function of deep-sea coral and sponge ecosystems.
- Understand the extent and degree of impact caused by fishing and other human activities.
- Understand the impacts of climate change and past oceanic conditions.

Management of Deep-Sea Coral and Sponge Ecosystems

NOAA manages deep-sea coral and sponges under two primary statutes:

- **Magnuson-Stevens Fishery Conservation and Management Act (MSA; U.S.C. 1801 *et seq.*)**
- **National Marine Sanctuaries Act (NMSA; 16 U.S.C. 1431 *et seq.*)**

The MSA allows NOAA to manage fishing-related threats to deep-sea coral and sponges in Federal waters through fishery management plans developed in conjunction with the regional Fishery Management Councils. The MSA was amended in 2006, requiring NOAA to establish the “**Deep-Sea Coral Research and Technology Program**” and providing new discretionary authority to protect areas where deep-sea corals and sponges are found from damage from fishing gear. The NMSA authorizes NOAA to identify and protect nationally significant habitats and resources throughout U.S. waters. Deep-sea corals and sponges are known to occur in 9 national marine sanctuaries.



Deep-sea coral habitat at the Flower Garden Banks National Marine Sanctuary. Photo credit: FGNMS/NURC-UNCW.

Recent Deep-Sea Coral and Sponge Activities

- In 2006, NOAA protected over 500,000 square miles of essential fish habitat in the Pacific Ocean. Included in these protections are areas of deep-sea corals, many of which are also designated as Habitat Areas of Particular Concern.
- In 2007, NOAA published *The State of Deep Coral Ecosystems of the United States* (www.nmfs.noaa.gov/habitat/dce.html).
- NOAA is expanding partnerships nationally and internationally to understand and protect deep-sea coral and sponge ecosystems.
 - ◆ In April 2007, the Joint Subcommittee on Ocean Science and Technology established an Interagency Board on Deep-Sea Coral and Other Vulnerable Marine Ecosystems co-chaired by NOAA and the Department of the Interior.
 - ◆ NOAA and the State Department are actively engaged in efforts to implement the 2006 United Nations General Assembly sustainable fisheries resolution (A/Res/61/105) to protect vulnerable marine ecosystems, which includes deep-sea corals, on the high seas from destructive fishing practices.
- NOAA has begun implementing a new, Congressionally-mandated “Deep-Sea Coral Research and Technology Program.” In early 2008, NOAA released the first report to Congress on the *Implementation of the Deep-Sea Coral Research and Technology Program*, (www.nmfs.noaa.gov/habitat/rtc.pdf).
- NOAA is developing the *Deep-Sea Coral and Sponge Research and Management Strategic Plan*.

For more information about NOAA's deep-sea coral and sponge activities, please visit: www.coralreef.noaa.gov

