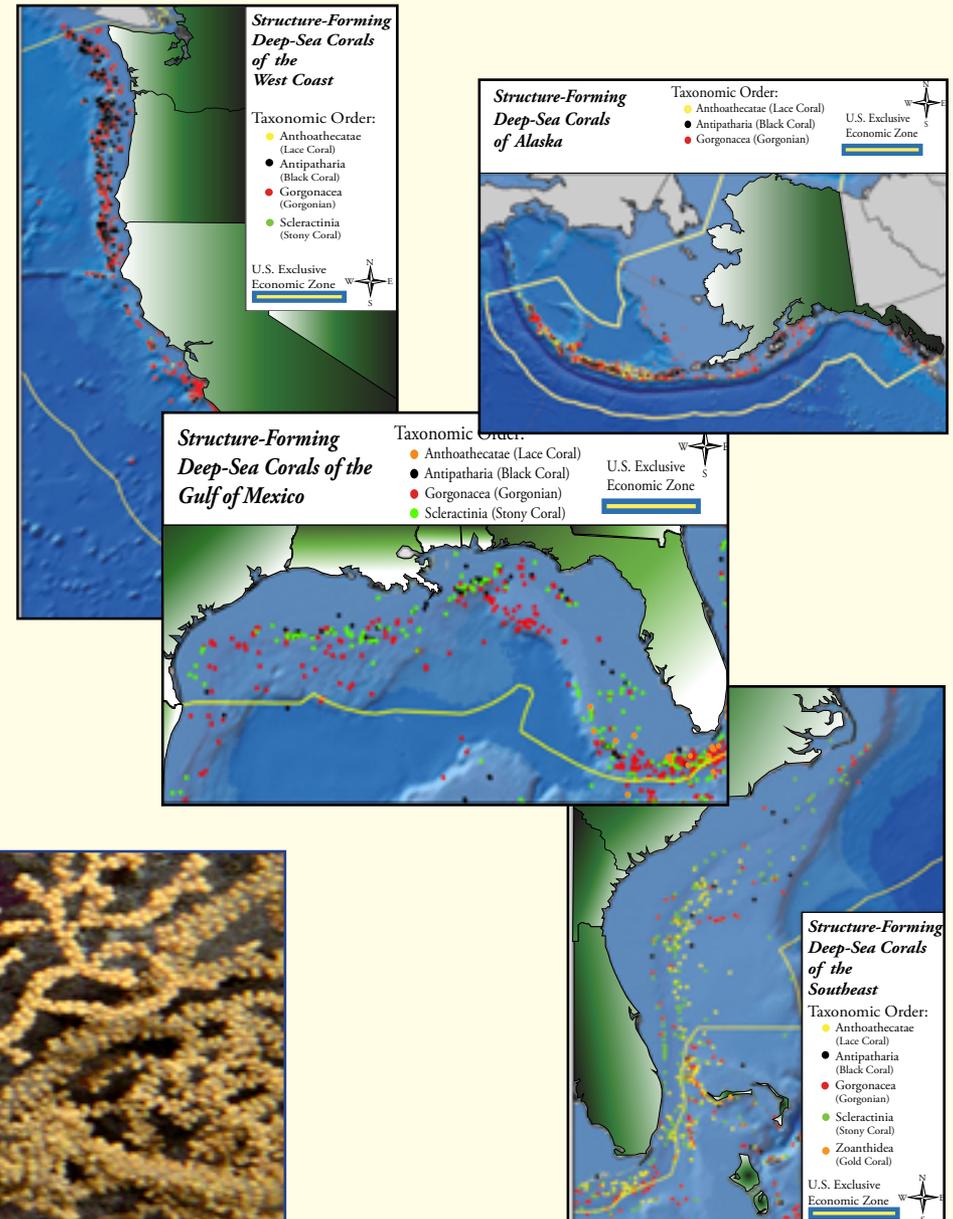


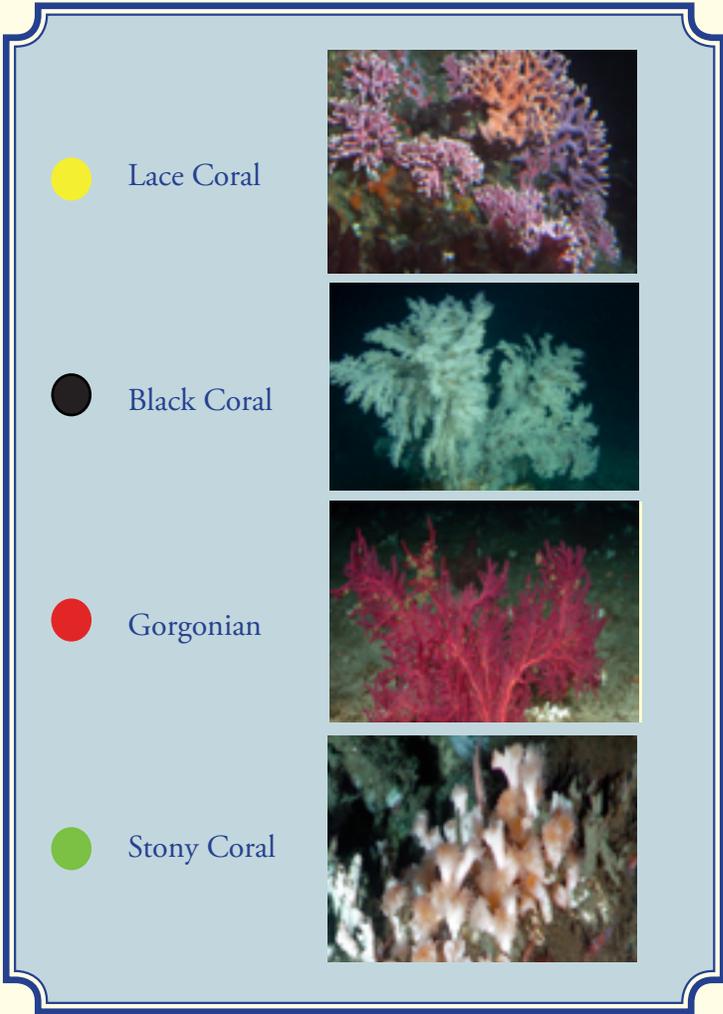
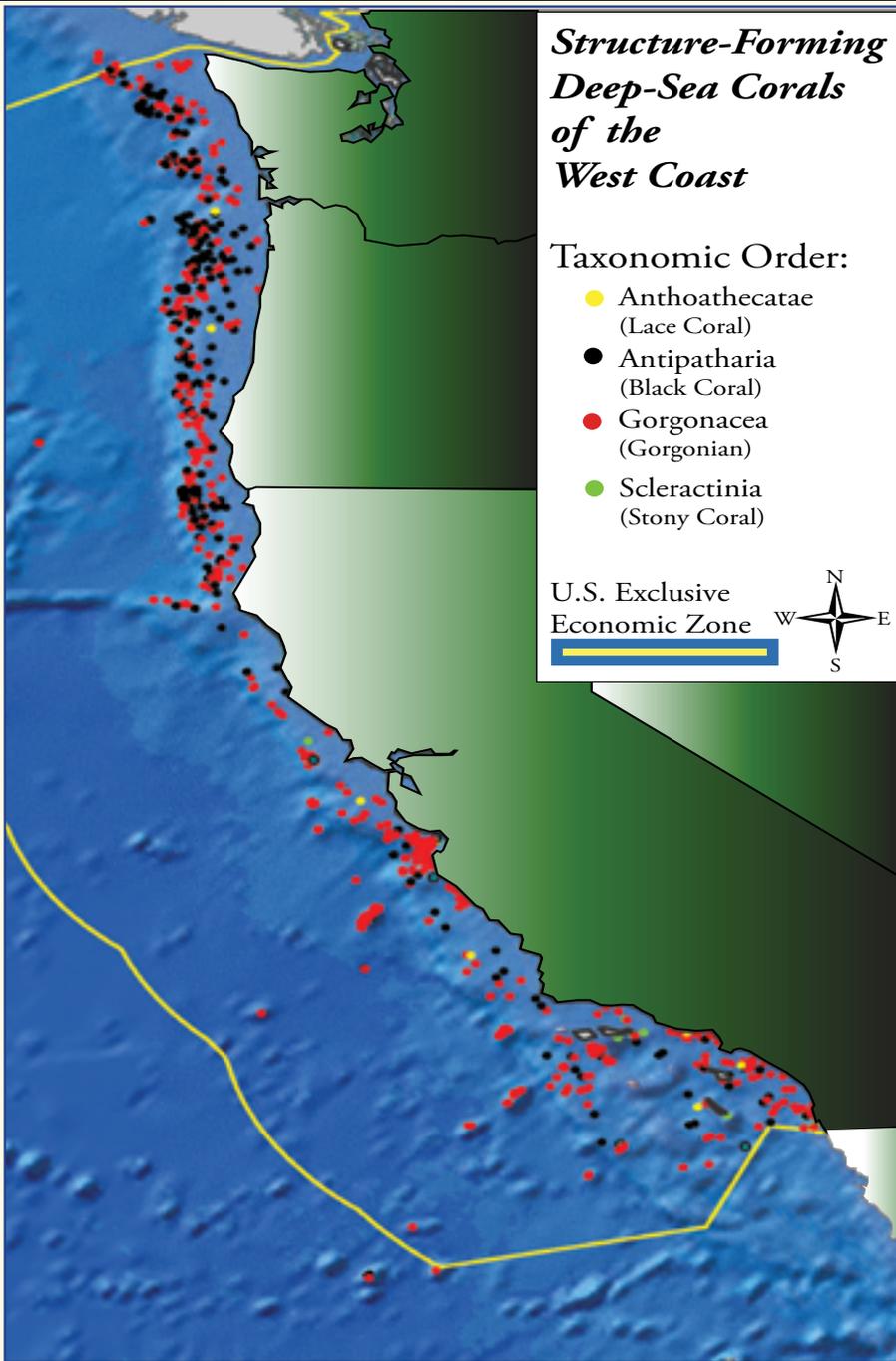
Appendix II: Deep-sea coral distribution maps by taxon and region

This appendix includes maps showing known locations of structure-forming deep-sea corals in selected U.S. regions. These maps represent the coral records in the Deep Sea Coral Research and Technology Program's national geodatabase. The maps are for illustrative purposes and are not meant to be used for management purposes. Due to the resolution of these maps, a single point may include more than one record.

The data do not represent density of coral cover but rather known locations of corals that have been compiled by the program to date and reported by taxonomic orders. Compilation of existing data is ongoing, and information on some orders may be incomplete. Reported coral locations are limited to where fishing or research has occurred. Thus, areas where no corals are shown on a map may reflect either an absence of corals or an absence of sampling. The data sources can be found on page 33 and include NOAA Fisheries bottom trawl survey and fisheries observer program databases, fishery management council databases, research cruise results, museum collections, and literature citations.

The boundaries for the U.S. Exclusive Economic Zone (EEZ) shown on the maps are for illustrative purposes only and are not intended to reflect areas claimed by the United States.





Known locations of major structure-forming species of lace corals, black corals, gorgonian corals, and colonial stony corals off the West Coast.

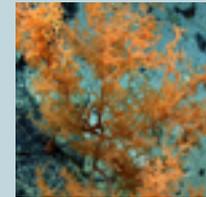
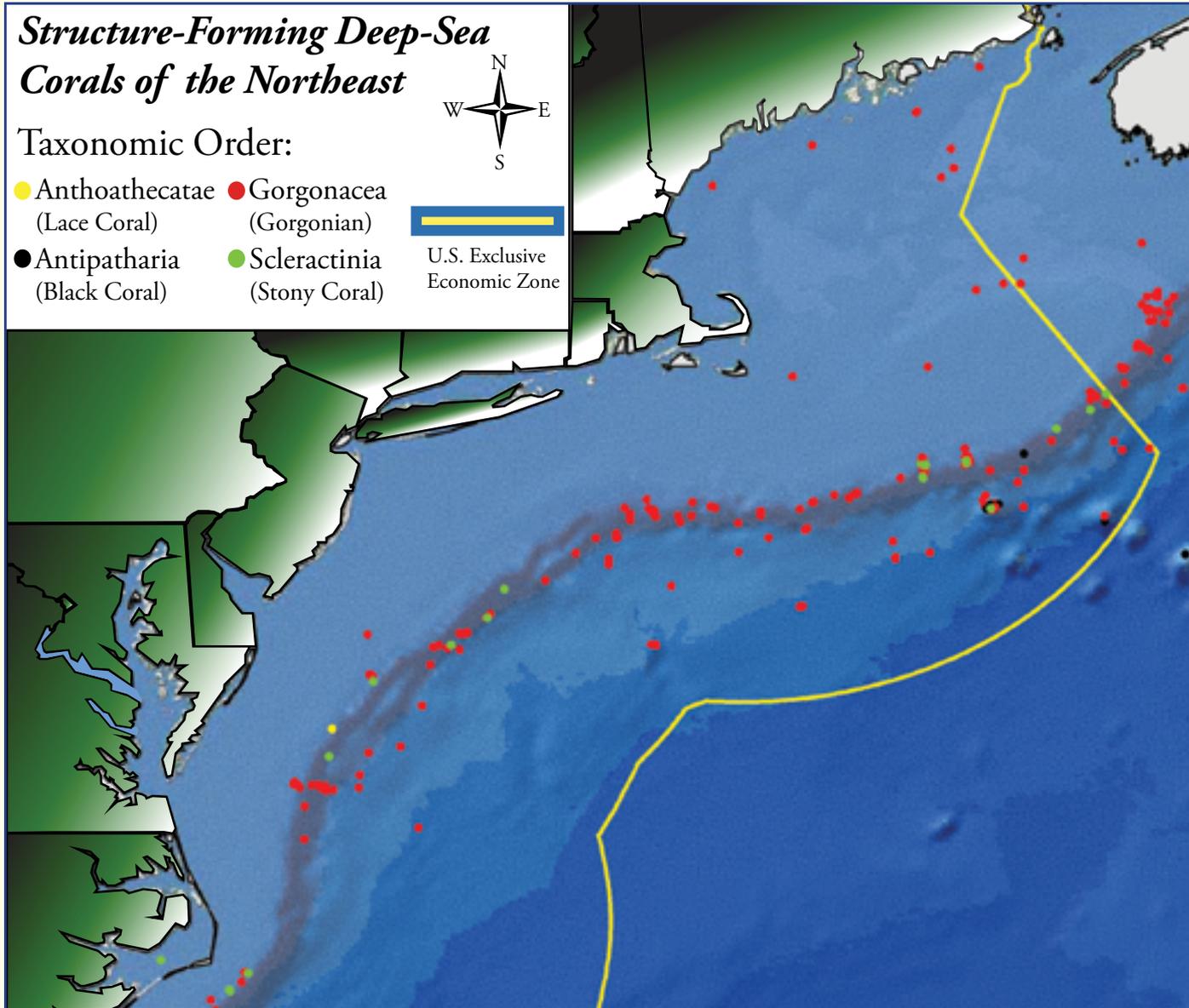
Structure-Forming Deep-Sea Corals of the Northeast

Taxonomic Order:

- Anthoathecatae (Lace Coral)
- Antipatharia (Black Coral)
- Gorgonacea (Gorgonian)
- Scleractinia (Stony Coral)



U.S. Exclusive Economic Zone



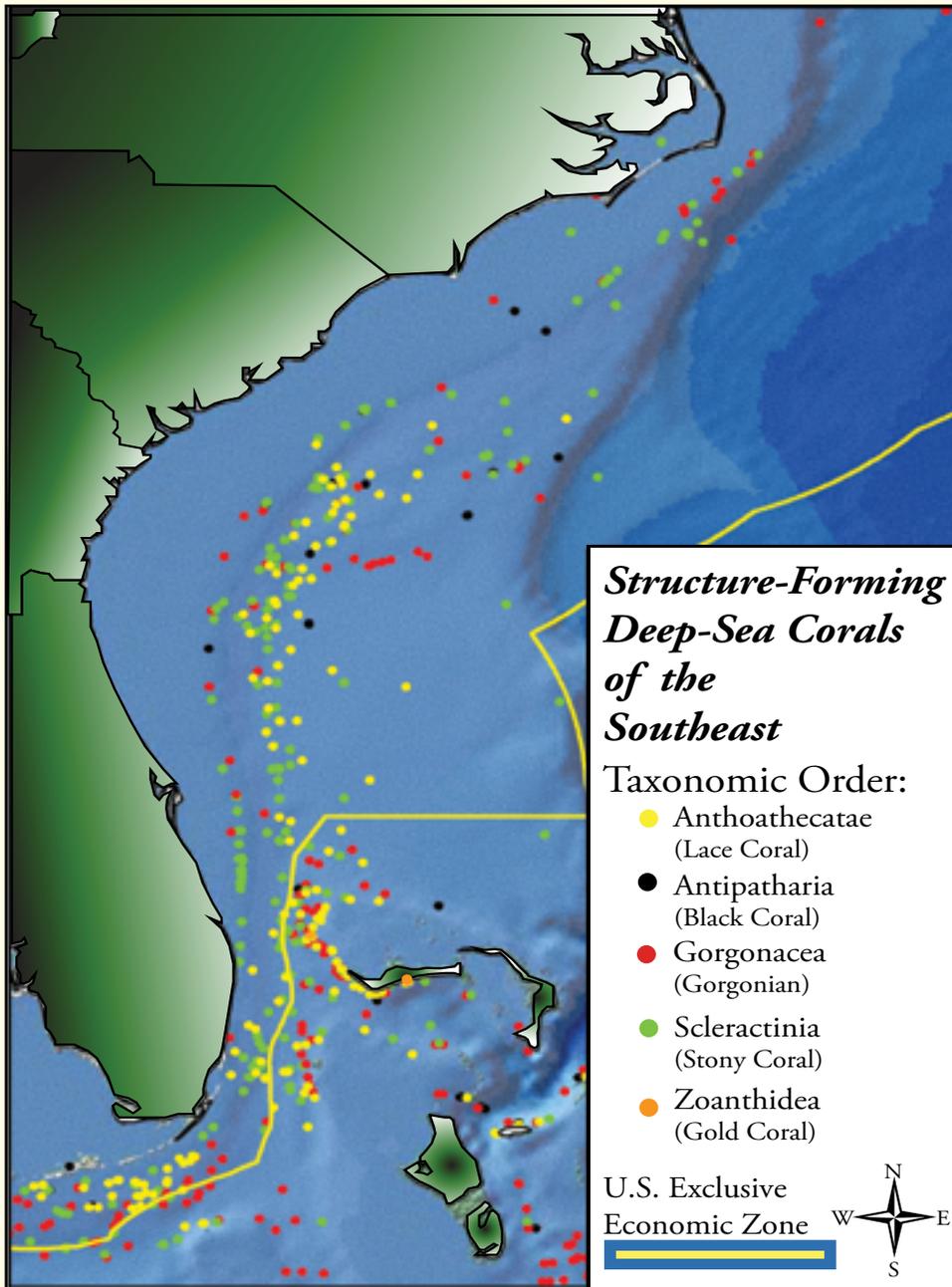
Black Coral ●



Gorgonian ●



Stony Coral ●



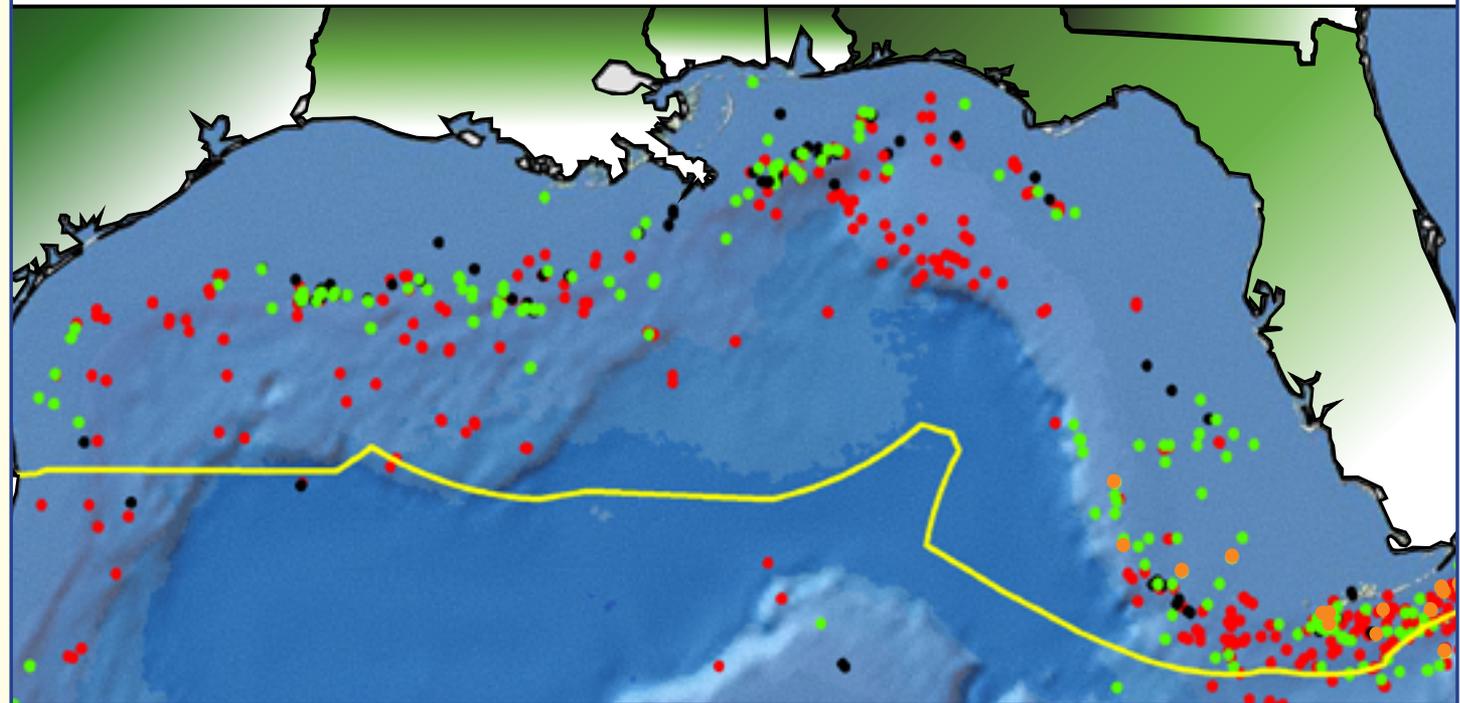
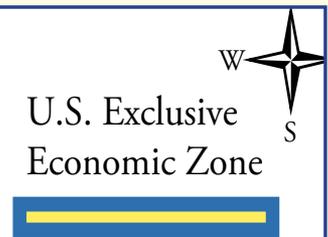
	Lace Coral	●
	Black Coral	●
	Gorgonian	●
	Stony Coral	●
	Gold Coral	●

Known locations of major structure-forming species of lace corals, black corals, gorgonian corals, gold corals, and colonial stony corals off the Southeast.

Structure-Forming Deep-Sea Corals of the Gulf of Mexico

Taxonomic Order:

- Anthoathecatae (Lace Coral)
- Antipatharia (Black Coral)
- Gorgonacea (Gorgonian)
- Scleractinia (Stony Coral)



Known locations of major structure-forming species of lace corals, black corals, gorgonian corals, and colonial stony corals in the Gulf of Mexico.



Lace Coral



Black Coral



Gorgonian



Stony Coral



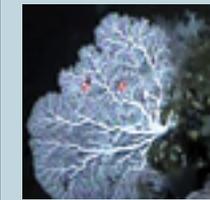
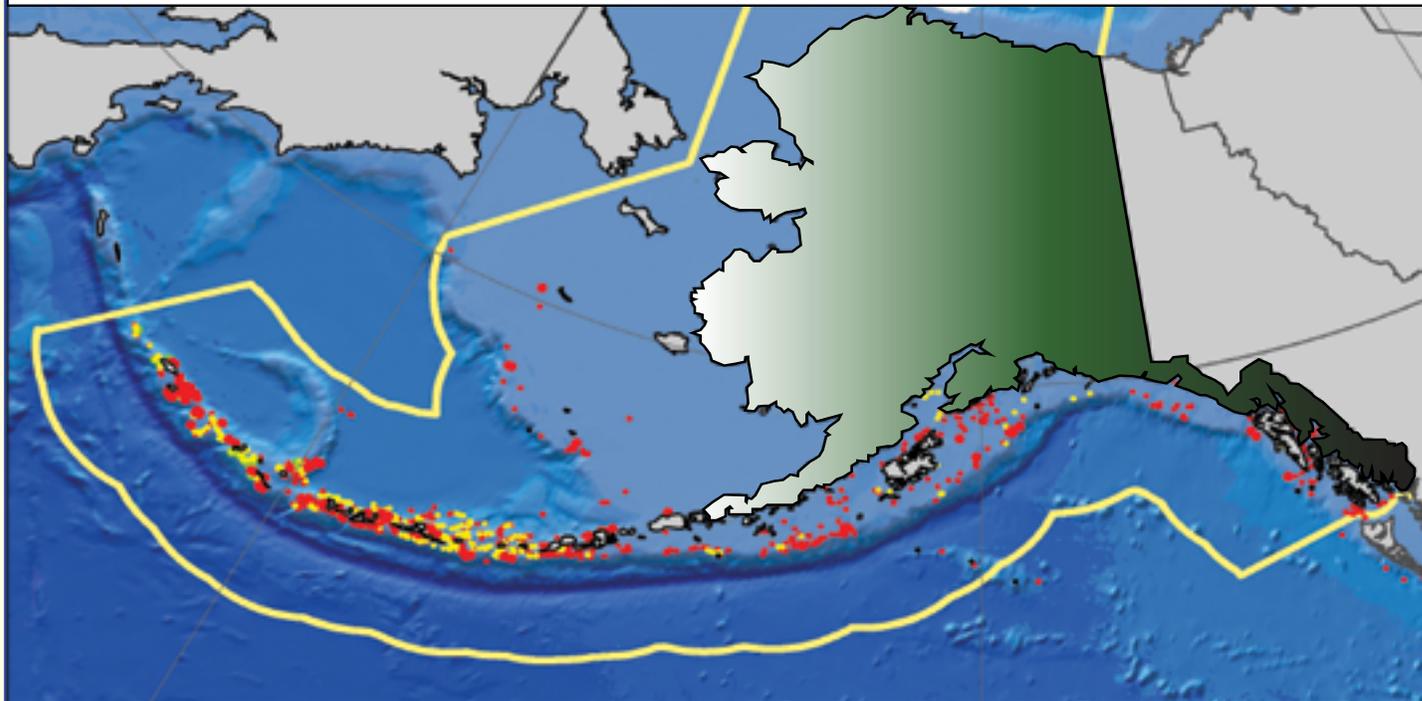
Structure-Forming Deep-Sea Corals of Alaska

Taxonomic Order:

- Anthoathecatae (Lace Coral)
- Antipatharia (Black Coral)
- Gorgonacea (Gorgonian)



U.S. Exclusive
Economic Zone



Lace Coral ●



Black Coral ●



Gorgonian ●

Known locations of major structure-forming species of lace corals, black corals, and gorgonian corals off Alaska.



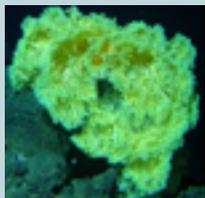
Lace Coral



Black Coral



Gorgonian



Stony Coral



Gold Coral

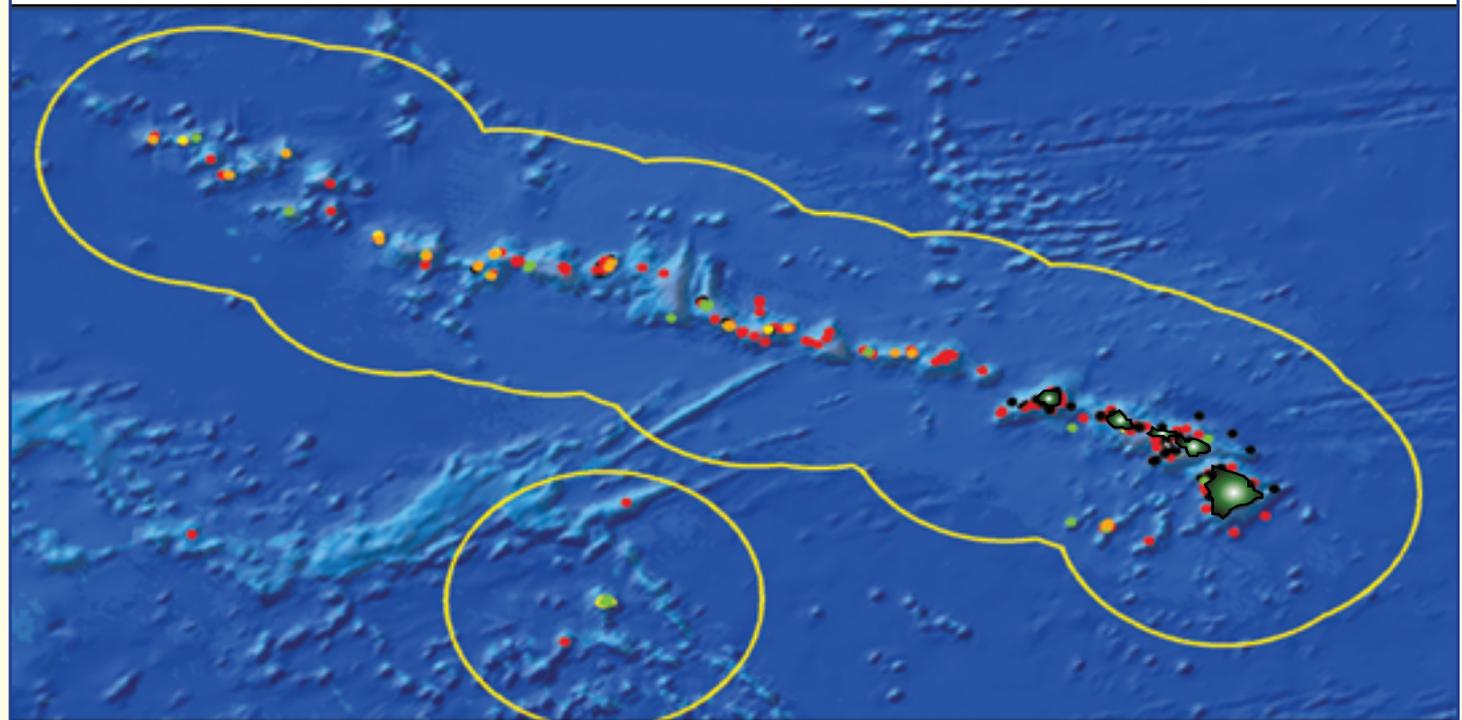


Structure-Forming Deep-Sea Corals of Hawaii

Taxonomic Order:

- Anthoathecatae (Lace Coral)
- Antipatharia (Black Coral)
- Gorgonacea (Gorgonian)
- Scleractinia (Stony Coral)
- Zoanthidea (Gold Coral)

U.S. Exclusive
Economic Zone



Known locations of major structure-forming species of lace corals, black corals, gorgonian corals, colonial stony corals, and gold corals in waters around the Hawaiian Archipelago.

Data Sources of Deep-Sea Coral Distribution Maps:

Southeast:

National Museum of Natural History
US Geological Survey, Cold-Water Coral Geographic Database (Scanlon et al., 2010)
Reed et al., 2005, 2006
Messing et al., 1990
Marine Conservation Institute
Yale Peabody Museum

Northeast:

US Geological Survey, Cold-Water Coral Geographic Database (Scanlon et al., 2010)
National Museum of Natural History
NOAA Northeast Fisheries Science Center
Hecker et al., 1980
Watling et al., 2003
Theroux and Wigley, 1998
National Undersea Research Center, University of Connecticut
Yale Peabody Museum

Hawaii:

Hawaii Undersea Research Laboratory; University of Hawaii
California Academy of Sciences
Marine Conservation Institute
Monterey Bay Aquarium Research Institute
National Museum of Natural History

Alaska:

NOAA Alaska Fisheries Science Center
Marine Conservation Institute
Monterey Bay Aquarium Research Institute
California Academy of Sciences
National Museum of Natural History
NOAA Office of Ocean Exploration

West Coast:

NOAA Alaska Fisheries Science Center
NOAA Northwest Fisheries Science Center
NOAA Southwest Fishery Science Center
National Museum of Natural History
Monterey Bay Aquarium Research Institute
NOAA Olympic Coast National Marine Sanctuary
NOAA Cordell Bank National Marine Sanctuary
Fautin, 2011. Hexacorallians of the World
Environmental Protection Agency's EMAP Database
Seamounts Online (Stocks, 2003)

Gulf of Mexico:

NOAA National Center for Coastal and Ocean Sciences, Deep Corals of the Gulf of Mexico: A Geospatial Database of Structure-forming Benthic Cnidarians. (Etnoyer et al., in review)
National Museum of Natural History
Bureau of Ocean Energy Management
NOAA Flower Garden Banks National Marine Sanctuary
Yale Peabody Museum
US Geological Survey, Cold-Water Coral Geographic Database (Scanlon et al., 2010)
Harbor Branch Oceanographic Institute
Marine Conservation Institute
Texas Cooperative Wildlife Collection, Texas A&M University

References for Appendix II:

California Academy of Sciences Invertebrate Zoology Collection Database; accessed in July 2011 at <http://research.calacademy.org/izg/collections>

Etnoyer, P. J., Cairns S. D., Reed J., & Hyland J. (In review). Deep Corals in the Gulf of Mexico: A Geospatial Database. NOAA Technical Memorandum NOS NCCOS XX. NOAA/NOS Center for Coastal Environmental Health and Biomolecular Research, Charleston, SC. 21 pp.

Hecker, B., Blechschmidt, G., & Gibson, P. (1980). Epifaunal zonation and community structure in three mid- and north Atlantic canyons—final report for the canyon assessment study in the mid- and north Atlantic areas of the U.S. outer continental shelf: U.S. Department of the Interior, Bureau of Land Management Monograph, 139 p.

Fautin, D. G. (2011). Hexacorallians of the World. <http://geoportal.kgs.ku.edu/hexacoral/anemone2/index.cfm>

Messing, C. G., Neuman, A. C., & Lang, J. C. (1990). Biozonation of deep-water lithoherms and associated hardgrounds in the northeastern Straits of Florida: *Palaios*, v. 5, p. 15-33.

National Museum of Natural History Collection, Search IZ Collections: accessed in November 2011 at <http://invertebrates.si.edu/index.htm>.

Reed, J. K., Pomponi, S. A., Weaver, D., Paull, C. K., & Wright, A. E. (2005). Deep-water sinkholes and bioherms of South Florida and the Pourtales Terrace—Habitat and Fauna. *Bulletin of Marine Science* 77: 267-296.

Reed, J. K., Weaver, D. C., & Pomponi, S. A. (2006). Habitat and fauna of deep-water *Lophelia pertusa* coral reefs off the southeastern U.S.—Blake Plateau, Straits of Florida, and Gulf of Mexico. *Bulletin of Marine Science* 78: 343-375.

Scanlon, K. M., Waller, R. G., Sirotek, A. R., Knisel, J. M., O'Malley, J. J., & Stian, A. (2010). USGS cold-water coral geographic database—Gulf of Mexico and western North Atlantic Ocean, version 1.0: U.S. Geological Survey Open-File Report 2008–1351, CD-ROM. (Also available at <http://pubs.usgs.gov/of/2008/1351/>).

Stocks, K. (2003). SeamountsOnline: an online information system for seamount biology. Version 3.1. <http://seamounts.sdsc.edu>

Theroux, R. B., & Wigley, R. L. (1998). Quantitative composition and distribution of the macrobenthic invertebrate fauna of the continental shelf ecosystems of the northeastern United States. NOAA Technical Report NMFS-140. 240 pp.

U.S. Environmental Protection Agency, Environmental Monitoring and Assessment Program (EMAP), <http://www.epa.gov/emap/>. Accessed through OBIS July 2011.

Watling, L., Auster, P. J., Babb, I., Skinder, C., & Hecker, B. (2003). A Geographic Database of Deepwater Alcyonaceans of the Northeastern U.S. Continental Shelf and Slope: Groton, National Undersea Research Center, University of Connecticut, Version 1.0 CD-ROM.

Yale University Peabody Museum Collection, Yale Invertebrate Zoology—Online Catalog: accessed July 2007 at <http://peabody.research.yale.edu/COLLECTIONS/iz/>

**Biennial Report to Congress on the
Deep Sea Coral Research and Technology Program**

**U.S. Secretary of Commerce
John Bryson**

**Under Secretary of Commerce for Oceans and
Atmosphere and Administrator,
National Oceanic and Atmospheric Administration - NOAA
Jane Lubchenco, Ph.D.**

**Acting Assistant Administrator for Fisheries
Samuel D. Rauch III**

**www.NMFS.NOAA.gov
National Marine Fisheries Service
1315 East-West Highway
SSMC 3, F/HC, Room 14228
Silver Spring, MD 20910**

U.S. Government – 2012

