

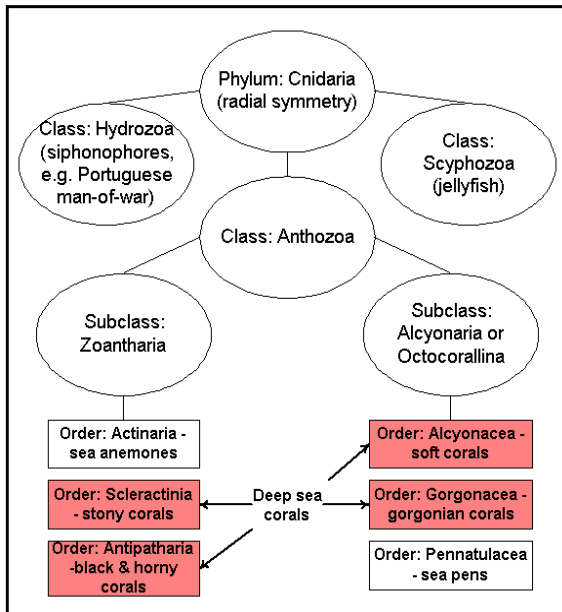
# Deep-Sea Corals

## What Are Deep-Sea Corals?

Deep-sea corals are members of the Class of animals called Anthozoa, which among other creatures, includes sea anemones, stony corals, soft corals and sea pens. Deep-sea corals inhabit the colder deep waters of our continental shelves and offshore canyons in waters ranging from 50-1000 m depths. Where current and substrate conditions are suitable, these corals form thickets or groves of high complexity. Similar to the ancient redwood and sequoia trees, these animals are slow growing and can reach hundreds of years in age. Similar to tropical rainforests, they also provide habitat for many other animals. Deep-sea corals may provide historical clues to climate change and may also be the source of new drugs from the sea.



Primnoa coral from Georges Bank canyon. © R. Cooper.



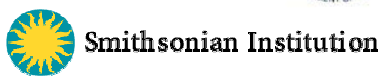
Partial phylogeny of deep-sea corals

## What Deep-Sea Corals Are Not

When one thinks of corals what typically comes to mind is an image of large, reef structures bathed in clear, tropical waters, supporting a high diversity of colorful fish and invertebrate species. These corals contain a symbiotic algae called (zooxanthellae) that relies upon the sunlight for photosynthesis that can supply 100% of the corals energy needs. Deep-sea corals do not contain these symbionts, and therefore do not rely upon sunlight and can live at much greater depths, where they actively feed upon material suspended in the water. Deep-sea corals may build reefs that are over a thousand years old, or they may occur as solitary organisms.

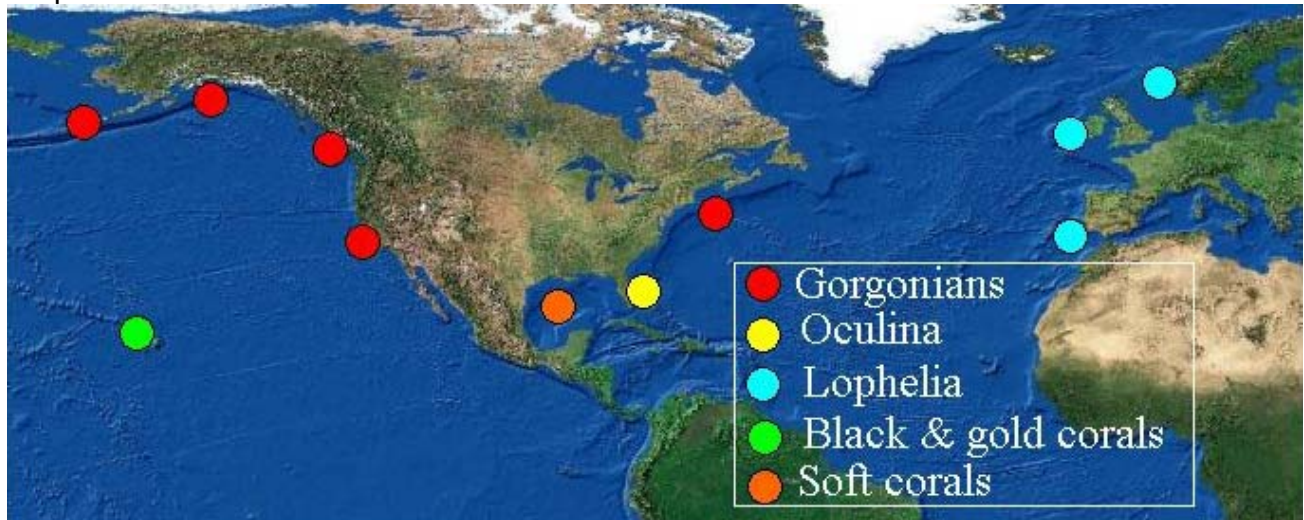


Oculina reef off the coast of Florida. © F. Coleman



## Where Do Deep-Sea Corals Occur?

Deep-sea corals exist around the world. The map below illustrates where the different types of deep-sea corals have been documented.



## Deep-Sea Corals Ecological Role

Like ancient forests these species provide habitat for a diversity of other organisms. Unlike the terrestrial forests, however, little is known about their distribution, ecological role, and conservation status. In fact, recent evidence suggests that fishing has had substantial impacts on these communities in both the North Atlantic and Pacific Oceans. This combined with their slow growth rate and potential critical role as habitat for a number of commercially and ecologically important species could produce long lasting effects on deep-sea communities. We must understand the distribution, fundamental life history, reproduction and ecological role of these organisms in order to manage and conserve these forests of the deep.



Paramuricea coral with brittle star. ©L. Watling

## Deep-Sea Coral Research Needs

A recent meeting in Tampa, Florida convened 50 scientists and policymakers from the U.S., Canada, Ireland, the United Kingdom and Norway to begin to identify the priority research areas for deep sea corals. From the meeting, five research themes/needs emerged: 1) mapping the distribution of deep-sea corals; 2) ecology of organisms associated with deep-sea corals; 3) physiology of deep-sea corals and response to change; 4) taxonomic studies; and 5) paleo-retrospective analyses.

### For More Information on Deep-Sea Corals:

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#### Links:

[Atlantic Coral Ecosystem Study - http://www.cool-corals.de/](http://www.cool-corals.de/)

[Auke Bay Laboratory HAPC Coral in Alaska - http://www.afsc.noaa.gov/abl/MarFish/coral.htm](http://www.afsc.noaa.gov/abl/MarFish/coral.htm)

[Coral reefs in Irish Waters - http://www.ecoserve.ie/projects/coral/index.html](http://www.ecoserve.ie/projects/coral/index.html)

[Coral reefs in Norwegian waters - http://www.bellona.no/en/environmental\\_facts\\_and\\_info/biological\\_diversity/12784.html](http://www.bellona.no/en/environmental_facts_and_info/biological_diversity/12784.html)

[HBOI Feature NOAA Approves Protection Of More Of Florida'S Unique Oculina Banks - http://www.hboi.edu/news/features/oculina.html](http://www.hboi.edu/news/features/oculina.html)

[National Undersea Research Center at the University of Connecticut – http://www.nurc.uconn.edu](http://www.nurc.uconn.edu)

