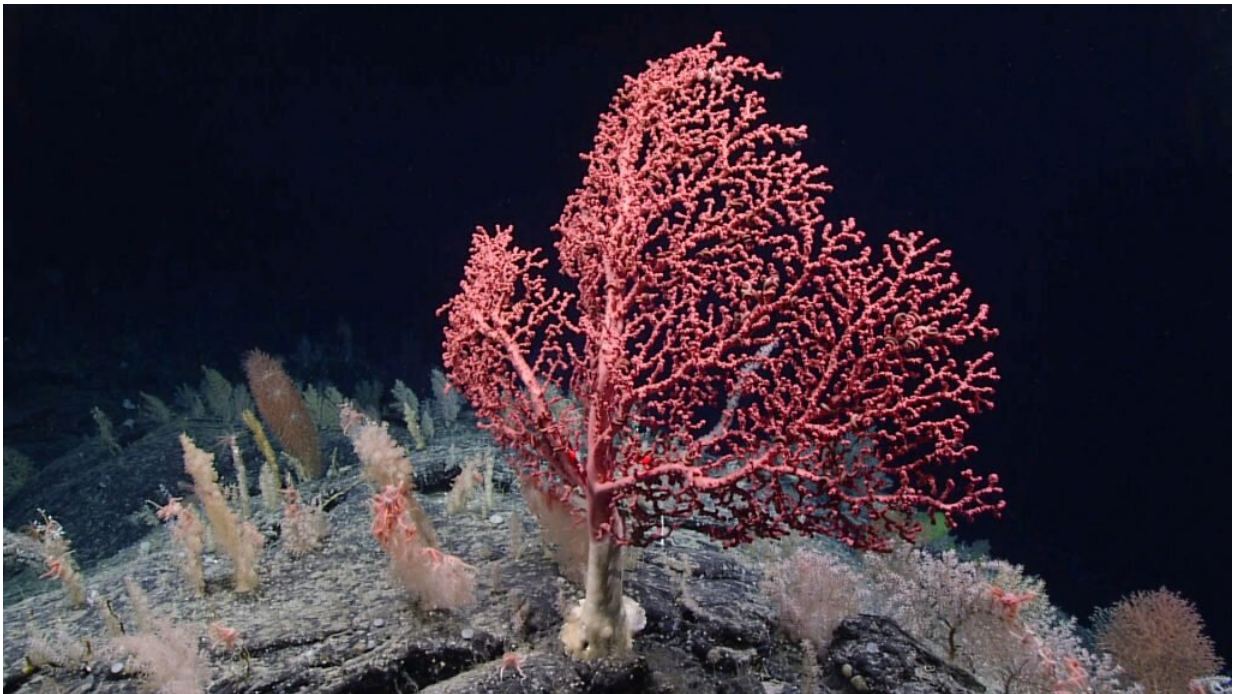


Marine National Monument offshore from Connecticut is protected once again

November 3 2021, by Elaina Hancock



This large bubblegum coral (*Paragorgia arborea*) was observed during Dive 19 of the 2021 North Atlantic Stepping Stones expedition. Based on published radial growth rates for this species, this colony is approximately 100 years old! We saw several large coral colonies during the dive, prompting one of our on-shore scientists to refer to the dive site as "the land of giants." Credit: Peter Auster

On October 8th, President Joe Biden restored protections from commercial-scale fishing in the Northeast Canyons and Seamounts

Marine National Monument, which had been removed in June 2020. The monument is about 130 miles offshore of Connecticut, is about the same size as the state, and boasts canyons vaster than the Grand Canyon and seamounts taller than any east of the Rocky Mountains. This protected area is the only one of its kind in the Atlantic, and it will serve as a vital refuge, closed to mineral and fossil fuel exploration, and now commercial-scale fishing, that could otherwise severely impact the ecosystem. Peter Auster, UConn Research Professor Emeritus of Marine Sciences and Senior Research Scientist at Mystic Aquarium, was one of the experts who helped ensure the area was protected. Auster met with UConn Today to explain the diversity and importance of the Marine National Monument, and the process of ensuring it remains a protected space.

Can you explain what the marine monument is?

United States jurisdiction over [ocean resources](#) extends out 200 miles from all our coasts. In the Atlantic Ocean the limit extends down the continental slope and into the [deep sea](#), where there are submarine canyons incised into the edge of the continental shelf. Once we get beyond the edge of the continental slope, we see the beginning of a chain of extinct underwater volcanoes that extend out to the Mid Atlantic ridge. The [monument](#) is composed of the Oceanographer, Gilbert, and Lydonia submarine canyons, and the Bear, Physalia, Retriever, and Mytilus seamounts, and the waters above them to the sea surface.

Those seamounts start just off the continental slope, and they became inactive volcanos as seafloor spreading opened the Atlantic Basin with the movement of tectonic plates. The oldest seamount is Bear Seamount, right off of Georges Bank. Bear Seamount is about 100 million years old, with the adjacent seamounts slightly younger.

The monument is about the size of Connecticut, about 1.5% of federal

waters in the Atlantic Ocean. Beyond our territorial sea there's been lots of research focused on understanding the distribution of biological diversity and resources such as minerals and [natural products](#) that are within our jurisdiction, but much more needs to be learned, especially beyond the edge of the continental shelf.

NOAA, the National Oceanic and Atmospheric Administration, began a program in ocean exploration, and I was one of the principal investigators on the first ocean exploration cruise in 2001 that used the RV Atlantis and the submersible Alvin where we dove in Oceanographer Canyon. On that first dive we collected a soft coral specimen that turned out to be a species new to science.

Diving in the monument, traveling from the surface to the seafloor, and down the walls of canyons and seamounts, is akin to hiking (or driving) up a mountain on land, traveling through multiple life zones. In the ocean, these zones are correlated with temperature, light, productivity, ocean currents, and sediment type. These [physical features](#) influence the interactions between species (predation, competition) and their population biology (reproduction, survivorship, growth, connectivity).

What kinds of wildlife live within the monument?

The monument encompasses an incredibly precipitous landscape of complex seafloor features. These features influence currents—the flow of water—and result in supporting an incredible diversity of very organisms from the sea surface to the seafloor, such as whales and seabirds, sharks and billfish, tuna, midwater fish and squid, and deep-sea coral and sponge species attached to the seafloor. Our analyses from previous studies demonstrate this region is a biodiversity hotspot for marine mammals and seafloor species.

On a recent ROV dive to the summit of Retriever Seamount (about 1850

m depth), we saw some of the most dense forests of corals and sponges on any of the seamounts. One of my colleagues called it "the land of the giants," because of the size of many of the coral colonies. They stand tall like trees anchored to the sea floor with branches extended into the current to capture food from the water, and look like they are standing in the wind. One of the coral colonies was estimated to be about 1,600 years old. These are old, old organisms, old colonies, that are extremely fragile and sensitive to disturbance.

We saw other organisms that took forms that were very Dr. Seuss-like. We were there to do science, but it was also obvious to all of us that love nature that these are very special places.

Based on earlier studies in the region, and because of the nature of the animals—the corals and sponges are all tremendously fragile, and vulnerable to human disturbance—we started talking about the idea that these are special places, and they deserve some degree of protection. There's still much more to be explored.

What steps were taken to ensure the seamounts were protected?

There are multiple ways of protecting areas of the ocean from different kinds of human activities. For instance, there's the Magnuson-Stevens Act that governs fishing and management of fishing in federal waters in the United States. The National Marine Sanctuaries Act allows designation of sanctuaries, that are generally multiple-use areas akin to national forests. There's also the Antiquities Act that gave the president the authority to designate areas as national monuments by proclamation in order to rapidly protect places that are under threat.

Back in 2015 a colleague, Scott Krauss from the New England

Aquarium, and I synthesized existing information and data into an analysis on the potential role that protection of this area would provide, with the idea for a Marine National Monument. Senator Richard Blumenthal and the entire Connecticut delegation sent an official proposal for the monument to President Obama, then in 2016 the president designated the Northeast Canyons and Seamounts Marine National Monument.

In 2020 President Trump, by proclamation, essentially changed the conditions of the earlier proclamation, which a number of legal scholars indicated was illegal—only Congress can make such changes—but it had never been tested in court. There is a case pending in federal court.

The Biden administration promised to restore protections to national monuments that President Trump removed, and that included Bears Ears and Grand Staircase Escalante. We didn't know when this was going to happen. I said I'll celebrate when I see Biden sign the proclamation, which he did, and I did.

Why is it important to establish protected areas?

There's always been a conflict between those that support utilitarian access to federal lands and waters versus conservation. This started out with John Muir and Gifford Pinchot in the 1800s. Essentially, the solution was to have both a National Forest Service and a National Park Service so national forests and other federal lands were used to produce wood products and wildlife products, for instance, and national parks were for conservation and enjoyment of people in perpetuity. The designation of the Grand Canyon National Monument (before it became a National Park) was thought by some to be the doom of the Arizona economy, but others saw the future. Today tourism is a major economic driver and the Grand Canyon landscape and associated diversity are protected for current and future generations.

One is not preeminent over the other, but conflict emerges whenever we start putting lines on a map and excluding people, or even the perception of excluding, the perception is that some people are diminished by that, even though they don't necessarily use the area. That still looms large in our politics. These conflicts are both challenging and frustrating and seemingly the cost of doing business. Especially in this time of climate change and biodiversity decline, and everyone needing resources, these issues are going to continue. We need to figure this out. The challenge for conservation scientists and policy-makers is how do we get the greatest diversity possible through this next century?

It is critical to make important decisions and not just kick the can down the road. What kind of world do we want to live in and leave to the future? How do we get through this period? One of the tools is to have places where we don't do anything like the Marine National Monument and others that currently exist, and then with President Biden's 30 by 30 initiative, that doesn't necessarily mean 30% of every region around the country is closed, but they are effective conservation measures in place, goals that have greater long term conservation emphasis, and using the existing legal framework.

We need to conserve places that are outstanding examples of our natural heritage. Designating monuments is an American tradition that goes back to Teddy Roosevelt. Presidents of both parties have designated places on land and now in the ocean to do that, so this is part of a long American tradition that's taken hold around the world to conserve these fragile, sensitive, outstanding examples of our natural heritage.

This is the first marine monument in federal waters in the Atlantic Ocean and a first in terms of designating an area in a place that has lots of human use. It's hard to find places in the US waters of the Atlantic where somebody is not doing something. This had a minimal effect on current users. We just can't stop doing everything, but we can decide

where we want to do these things in the ocean to get the resources we need and where we don't.

Not only is it a place where the science community can study what the ocean should look like in the absence of effects like fishing and mining, it's a place for the American public and is protected in perpetuity, while the other 98.5% of our Atlantic waters is left for whatever else is going to happen.

Protecting marine animals is an important element also, whales, dolphins, seabirds, sea turtles. The protections exclude commercial fishing and after 2023 that form of fishing that includes vertical lines is excluded from the monument as well. When that happens, this will be the largest and only year-round vertical line free area on our entire coast so there will be fewer animals getting tangled and drowning as bycatch in this area of US waters.

While most people won't visit the monument directly, there are opportunities to visit for whale and bird watching, and recreational fishing for the adventurous types. For others, Mystic Aquarium has an exhibit that features a tactile, immersive replica of an underwater canyon and three-dimensional, holographic, and digital representations of sealife, as well as moving imagery and graphics.

Provided by University of Connecticut

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