

ATTACHMENT 5

MEDIA COVERAGE OF THE 2009 DEEPWATER CORAL RESEARCH CRUISE

Note that NBC Correspondent Kerry Sanders, AP Reporter Brian Skoloff, and Environmental Reporter Dinah Pulver were taken onboard the R/V *Seward Johnson* as part of a Media Day coordinated by SAFMC staff in cooperation with many partners involved in the deepwater coral research and outreach.

<http://daily.abcnews.com/abc/2009/08/13/2030740.aspx>

Off the coast of Cape Canaveral

Posted: Thursday, August 13, 2009 3:34 PM by Sam Singal

By Kerry Sanders, NBC News correspondent



As we steamed out to sea, I could see the fading hulk of NASA's VAB (vehicle assembly building) on the horizon. You've probably heard we know more about the moon than we do our own planet.

The proof of that is just 50 plus miles off the Atlantic coast.

Here, a team of a dozen-plus scientists with [Harbor Branch Oceanographic Institute](#) and other international universities, are working with [NOAA](#) and the [South Atlantic Fishery Management Council](#) to probe the depths of the ocean. One thousand to 3000 feet down, the scientists are mapping mountain ranges covered in deep-sea corals. The area from North Carolina to the Florida Keys is more than 23,000 square miles. Twenty years ago, no one even knew these deep-water coral mountains existed. Corals, it was believed, were shallow-water creatures. (Corals are animals, not plants or rocks).

Click [here](#) to view video just taken off the bottom of the ocean in this "never-before-seen-by humans" video.

Click [here](#) to further explore the underwater of deep sea coral.

THE UNKNOWN

The team of scientists is trying to understand how these corals survive in a place so deep there's no sunlight. Shallow water corals live symbiotically with algae, which, as you'll remember from your high school science class, are plants, which grow thanks to photosynthesis. It's believed down at these depths, the corals are strategically in the fast-moving gulfstream, so they can feed on other microscopic animals catching a ride in the currents. (If you saw the movie "Finding Nemo" you may remember how aquatic life uses that undersea highway to travel.)

A CURE FOR CANCER?

SAFMC Information & Education Advisory Panel Meeting
March 1-2, 2010
Jekyll Island, GA

While scientists have uncovered at least 10 new species, perhaps the most exciting development for mankind is something akin to the blood from a “glass sponge.”



In the past, fisherman found the fragile “glass sponge” at the surface, where the water is warm, and the sponge’s chemical make-up changes. But mechanically clipping the “glass sponge” in its natural deep-water habitat, and then keeping it in a sealed box with seawater at its natural temperature of approximately 45 degrees Fahrenheit, John Reed, a senior scientist with Harbor Branch Oceanographic Institute (pictured below) has discovered extracting the so-called blood, or juice from the “glass sponge” reveals a chemical previously unknown to man.



As scientists began experimenting with this new chemical, the team at Harbor Branch wondered what it might do to a cancer cell? Remarkably, in several lab tests, the newly found chemical compound seems to attack pancreatic cancer cells. Reed says “what’s particularly fantastic is ... the juice targets the cancer cell and kills it.”

It’s amid that backdrop that the South Atlantic Fishery Management Council hopes to close off the 23,000 square miles of deepwater corals to fisherman. Rarely do fisherman and policy wonks agree. Fisherman often fear that closing off an area means they can’t continue their livelihood.

But in this case, fishermen have not targeted these waters off the Atlantic coast ... yet!

It’s not that someday fishermen won’t come here, as they did off the coast of New Zealand. Fishermen there discovered “orange roughy” in the 1970s and unintentionally destroyed the deep-water corals in the process.

Once the corals were destroyed, and the orange roughy were fished out, it was a case of no turning back the clock. Orange roughy are a very slow-growing fish. They live up to 150 years. Once harvested, it’s virtually impossible for them to recover. At the same time, their

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home, the deep-water corals were flattened. It's akin to leveling underwater apartment buildings and expecting a new generation to live amid the rubble.

Dr. Murray Roberts from the Scottish Association of Marine Science says "it's not fishing, it's a mining operation."

RACE AGAINST TIME

In a race against time, scientists want to close off access to these Atlantic corals before fishermen move in. The most likely catch here is not orange roughy, rather the black belly rose fish, red bream, barrel fish and the golden crab. That crab is perhaps the most valuable delicacy. If commercially harvested here, scientists fear it could be the coral's "deadliest catch." The unintended destruction of the deep-water corals by crab traps being set and pulled up off the ocean floor. So far, the small group of golden crab fisherman has worked closely with the government to steer clear of the deepwater corals. One scientist credits their support to the video from down deep. He says "when you can see it, it's so much easier to understand why it should be protected."

<http://dsc.discovery.com/news/2009/08/18/corals-protection.html>

Deep-Sea Coral Reef May Get Protection

Brian Skoloff, Associated Press



Aug. 18, 2009 -- Deep beneath the crystalline blue surface of the Atlantic Ocean off the southeastern U.S. lies a virtual rain forest of [coral reefs](#) so expansive the network is believed to be the world's largest.

A 23,000-square-mile area stretching from North Carolina to Florida is just part of that entire reef tract now being proposed for protection from potential damage by deep-sea commercial fishing and energy exploration.

So far, it's been relatively untouched by man because of its largely unreachable depths, providing scientists a unique opportunity to protect an ecosystem before it's destroyed.

"Most of the time, science is trying to catch up with exploitation," said Steve Ross of the Center for Marine Science at the University of North Carolina at Wilmington.

Ross is leading a four-part research cruise that began Aug. 6 aimed at studying these deep sea environments, hoping to find new species of fish, crab and corals that could lead to scientific and medical discoveries.

Environmentalists say crab pots and bottom trawling for shrimp are the most immediate threats.

Margot Stiles, a marine scientist for Oceana, an international environmental advocacy group, said other deep water reefs off the U.S. have been severely damaged by trawlers.

"In this case, we have 23,000 square miles of known deep [sea corals](#), and it's not too late to protect them," Stiles said. "This particular reef is to the deep sea what the Great Barrier Reef is for the world."

The South Atlantic Fishery Management Council is pushing the proposal to protect the region, about the size of West Virginia, in depths down to 2,500 feet and below, creating the largest deep water coral protected area off the Atlantic Coast.

Specifics on regulations and restrictions are still being reviewed, but if approved by the U.S. Commerce Secretary, the plan could take effect by next year.

"As far as we can tell, there's relatively little damage," Ross said. "That's very different from other parts of the world. In Scotland and Ireland ... there's been significant damage mostly from fishing and now those reefs are being protected."

While fishermen have for centuries dragged up corals from the deep sea, it wasn't until the early 1900s that scientists discovered these extensive cold-water reefs existed. And it wasn't until the 1970s that researchers were able to use submersibles and cameras to reach the sea floor to document them. It had long been thought coral reefs only formed in shallow, warm waters.

Deep water reefs and pinnacles are much more slow-growing and can take several million years to form. Ross said science is only now [beginning to understand](#) these underwater "frontier zones."

Out on the research ship, scientists gather corals, sponges and fish samples by sinking deep to the ocean floor in a four-man submersible about the size of a Volkswagen Beetle. The team is comprised of researchers from the National Oceanic and Atmospheric Administration, Florida Atlantic University, the U.S. Geological Survey and others.

"We've barely seen the tip of the iceberg in terms of new species out here," Ross said. "We'll find out five or 10 years from now that we made an amazing discovery and we just didn't realize it ... A lot of our pharmaceuticals come from a tropical rainforest environment. The same people are looking for these in the deep sea, and there are expectations that there will be drugs made that could potentially provide cures for some types of cancer.

"There is just a great deal of concern that once these habitats are gone, the potential for realizing those discoveries are eliminated," Ross added.

The deep water reefs also are seen as indicators of the ocean's overall health; because they are so remote, it takes longer for phenomenon like climate change to affect them.

"Science is questions, it's not answers," said Liz Baird of the North Carolina Museum of Natural Sciences, cautioning that it may be years before researchers realize the full potential of the reefs.

Most in the fishing industry agree that protecting these reefs is good for business, said Steven Wilson, owner of International Oceanic Enterprises in Alabama. Wilson has been shrimping in the Atlantic for 30 years and has been working with officials preparing the protection plan.

While law enforcement says some fishermen will drop crab pots or drag nets near [fragile corals](#) to score big catches, regardless of the damage, Wilson said it's mostly accidental.

"We can't make any money trawling over coral. In fact, we lose money," he said, noting that it destroys the nets.

Woody Moore, a commercial fishermen out of Jacksonville, Fla., has been trawling for shrimp in the Atlantic for three decades and also has been helping develop the deep reef protection proposals.

Moore puts it simply: "We don't want any closures but you gotta give them something or they'll take it all. You gotta play the game."

Related Links:

[Earth Pub: Blogs about Earth-related news](#)

[TreeHugger: Six Steps to Save Coral Reefs](#)

[HowStuffWorks.com: Coral Reefs](#)

Note: Dinah Pulver with the Daytona Beach News Journal participated in the Media/VIP excursion to the R/V *Seaward Johnson* last week.

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August 19, 2009

Coral my world

Team finds diversity at bottom of ocean

By DINAH VOYLES PULVER
Environmental Writer

CAPE CANAVERAL -- An international team of scientists converged here this month to explore an unknown frontier -- not space, which typically calls experts to this coast -- but the equally mysterious ocean floor 50 miles to the east.

In a dark and cold environment far below the aquamarine surface, corals growing for hundreds of years create pinnacles and structures as high as 300 feet. Colorful and complex, these reefs harbor just as diverse an array of life as South Florida's tropical reefs, but at depths of 1,500 to 3,000 feet.

While shallower reefs, including the *Oculina* deep-water coral banks some 25 miles off Daytona Beach, have been over-fished, over-used and damaged by human activities, the *Lophelia* coral reefs appear nearly pristine.

"This is a very special place," said Murray Roberts, a deep-water coral expert with the Scottish Association of Marine Science.



News-Journal

During a 10-day joint research voyage, funded in part by the National Oceanic and Atmospheric Administration, the scientists hoped to learn more about the species that live here and look for ways to protect the corals while still allowing fishing and limited human uses.

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The cruise was the first of four planned this year to explore deep-water coral reefs from North Carolina to the Gulf of Mexico. The crew utilized a research vessel and manned submersible from Harbor Branch Oceanographic Institute at Florida Atlantic University.

For Roberts, the chance to explore the reefs from the front seat of the Johnson Sea Link submersible represented a stunning opportunity, especially in the clear water of the Gulf Stream, as compared to the North Atlantic where he researches similar Lophelia reefs.

Using the submersible and a remote device known as a microlander positioned on the ocean floor, the crew measured water current, temperature, light and sound.

During numerous dives in the submersible, they gathered crabs, fish, worms and small pieces of coral and sponge. Throughout each three-hour dive, scientists recorded what they saw with notes, camera and audio recordings.

They expected to gather enough data to keep them busy for the next year, Chief Scientist Steve Ross said. Ross is a professor at the University of North Carolina Wilmington's Center for Marine Science.

On board the research vessel Seaward Johnson last week, a squat lobster peered from an aquarium environment that recreated the world he'd just left behind. Sharing space in the tank were a fat sea urchin and two kinds of coral. Each piece of coral is covered in other sea life.

In another room, John Reed studied a tiny piece of sponge through the lens of a microscope. The senior research scientist with Harbor Branch clutched a book of drawings based on work done in the late 1800s. Some species collected during the trip haven't been seen in more than 100 years.

A pioneering coral researcher, Reed helped discover and document Florida's Lophelia and Oculina reefs.

The South Atlantic Fishery Management Council proposes to protect a vast area of Lophelia reefs as Coral Habitat Areas of Particular Concern. The designation would encompass more than 23,000 square miles and prevent destructive fishing activities such as bottom trawling. The council expects to make a final decision later this year.



N-J/Dinah Voyles Pulver

A submersible, which scientists use to collect and store coral samples, is launched into the ocean recently during a two-week mapping of a coral reef off the coast of Florida.

Scientists are studying the deep-water reefs in a 23,000-square-mile region stretching from North Carolina to Florida that has been proposed for protection from fishing and other endeavors that could damage the ecosystem, such as energy and oil exploration.

One of the biggest reefs, off Matanzas Inlet, reaches more than three miles in length and heights of 400 feet, at depths between 2,000 and 3,000 feet, Reed said. A reef east of Jacksonville may be 40,000 years old.

Even though Reed has chalked up hundreds of submersible dives since the mid-1970s, he still finds each trip to the ocean floor "wonderful.

"You're the first person to see that," Reed said. "It's like stepping on the moon."

No one knows what riddles the reefs could one day answer.

"Compared to shallow-water reefs, we know very little," Reed said. "We've just scratched the surface in biochemistry."

Lab work done by one of Reed's colleagues suggests a chemical compound from a glass sponge found on the Lophelia reefs could kill cancer cells.

Roberts and other scientists would like to know more about how the corals and the extensive web of life they support could be affected by a changing climate and warming ocean.

He is a partner in the Trans-Atlantic Coral Ecosystem Study, a collaborative effort between the U.S., Canada and the European Union. Roberts said participating in joint research is much more cost-effective.

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Science logs from the research voyage can be viewed at the U.S. Geological Survey, fl.biology.usgs.gov/DISCOVRE/index.html

or at the North Carolina Museum of Natural History naturalsciences.org/microsites/education/deepsea/index.html

Information on coral protection can be found at safmc.net/ecosystem/HabitatManagement/DeepwaterCorals/tabid/229/Default.aspx

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