



The Natural Laboratory Podcast Transcript: Deep-water corals of Cordell Bank

Introduction

This is the Natural Laboratory, a podcast exploring science for Bay Area National Parks. I'm Cassandra Brooks.

[music]

Much of the ocean is a desert, dark depths devoid of life with muddy bottoms where animals scour for food and mates.

But in the midst of these muddy bottoms, rocky banks rise from the continental shelf providing structure for life to grow and flourish. Cordell Bank, just 20 miles off the Point Reyes Seashore, is one such place. A world bursting with creatures beyond our wildest imaginations.

Interview with Lisa Etherington and Dan Howard

Lisa Etherington: The overwhelming colors and diversity of life that are associated with these corals and other animals on the bank is just...it's breathtaking. It's like nothing you've seen before.

Dan Howard: Because of where the bank is situated and because of our local oceanography, it's a very very productive place, both on the bank and around the bank. So it just really is a...an oasis of life out there; it's just spectacular.

Cassandra Brooks: That's Lisa Etherington, Research Coordinator at the Cordell Bank National Marine Sanctuary and Dan Howard, the sanctuary's Superintendent.

A key component of this biological wonderland are deep-water corals. Unlike shallow water reefs, these corals thrive in dark water anywhere from just below the surface down to

two thousand meters. All over the world, from the Arctic to Antarctica, researchers have found deep-water corals. And each new community they find supports an incredible assemblage of life.

LE: I do know that some deep coral communities...uh...have been shown to have diversity levels of the associated animals with the...the corals to be similar to tropical reef systems. So, people think of these lush, shallow-water, warm-water coral ecosystems as being one of the most diverse places on earth, but, um, deep-water coral communities can rival that.

They provide a 3-D structure, so a lot of organisms will use them as habitat, either for refuge from predation, areas of feeding, areas where, um, they will spawn, or nursery areas where young individuals can grow up.

**Interview with
Lisa Etherington
and Dan Howard
(continued)**

CB: And I wondered if, um, Cordell Bank wasn't designated a sanctuary because of the presence of corals?

DH: I don't think, uh, when the sanctuary was designated in 1989 that many people other than the fishermen understood the deep coral communities. I doubt...I don't think anybody really understood it.

CB: I know there's still a lot of things we don't know about deep-sea corals, but, in terms of what we do know, I understand they're really slow growing and pretty vulnerable.

LE: Right. Right. I think it's been documented that some individuals will only grow one to two centimeters per year. So, it takes them a while to get to, um, you know, a substantial height. And some of these will, you know, be 10 to 15 meters high, you can have some really large colonies or individuals. And some form reef systems.

CB: So how old are those that are 10 to 15 meters high?

LE: I know they've been documented as over 1500 years old. So, one of the, uh, longest-lived organisms on the Earth.

CB: As knowledge of deep-sea corals has grown, so has a desire to protect them. While acres of coral

communities have been destroyed by trawl fishing, many countries, including the United States, have banned trawling over some seamounts or other rocky habitats where corals live. The hope is to protect the remaining deep-sea coral communities, though a new threat is on the horizon, one that is far harder to manage.

LE: For deep-sea corals, one of the...the big concerns right now is the changing acidity of the ocean. So, as we put more, uh, carbon dioxide into the atmosphere, the ocean is taking up more carbon dioxide, which reduces the pH or increases the acidity of the ocean. And that causes, um, some potential detrimental impacts on corals which use calcium carbonate to build their skeletons. So, if we have a more acidic ocean environment, then it's harder for these animals to build their skeletons and also potentially could dissolve their skeletons in some cases.

DH: You know, we have...we have so...so much to learn, but as a sanctuary, I, you know, we certainly, the one thing that we can do is...is try to protect these habitats and keep them in as, you know, as close to a natural state as we can so that they have the...the best chance possible to survive or, uh, be resilient in a changing environment.

Conclusion

With the Pacific Coast Science and Learning Center, I'm Cassandra Brooks.

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