

Will coral reefs disappear?

February 22 2010

This is the title of an upcoming symposium at the American Association for the Advancement of Science (AAAS) annual conference in San Diego, California. And it's a topic that should not be taken lightly.

NSERC-funded researcher Dr. Simon Donner, an assistant professor in the department of geography at the University of British Columbia, will be talking about the vulnerability of [coral reefs](#) to [climate change](#) due to higher [ocean temperatures](#).

Dr. Donner studies coral bleaching. Corals get most of their energy from microscopic algae that live in their tissue. These algae are colourful and are what gives corals their vivid hue. When [environmental factors](#) go out of the range that corals are used to (such as warming water), the symbiosis between the coral and the algae breaks down and corals effectively expel the algae and turn white. The coral is then deprived of its source of energy, and dies.

Dr. Donner studies the frequency of coral bleaching events, their consequences and the link to unusually warm oceans. He says that mass [coral bleaching](#) events were thought to be extremely rare as far back as 30 years ago.

At the AAAS conference he will be talking about the predicted occurrence of bleaching events under different climate scenarios and, according to

Dr. Donner, it doesn't look good.

"Even if we froze emissions today, the planet still has some warming left in it. That's enough to make bleaching dangerously frequent in reefs worldwide," he says.

Given the hundreds of millions of people living in the tropics who depend on coral reefs for food, income, tourism and shoreline protection, the loss of reefs is a serious issue.

"Obviously, there's an aesthetic concern because people see Finding Nemo and they're worried about what's going to happen to the world's coral reefs, but the key thing is that there are hundreds of millions of people who depend on them for their livelihood," says Dr. Donner.

However, the outlook isn't completely bleak. Dr. Donner says that no one is predicting that coral reefs will go extinct; they will continue to survive, but only in certain habitats, such as shaded areas. The reality is a general loss of coral cover and a breakdown of the physical structure of reefs.

In order to see what the future of reefs might be, Dr. Donner is pursuing fieldwork in the central equatorial Pacific, because the islands and reefs in that area are affected by repeated El Nino events. Because of this, they've experienced higher year-to-year temperature variability than other areas on the planet. Dr. Donner is studying the corals in these areas to understand how the reefs are biologically different, and how that has allowed them to persist through warm water events that would kill coral in other areas of the planet.

"It's a natural model for the future," he says.

Provided by Natural Sciences and Engineering Research Council

Citation: Will coral reefs disappear? (2010, February 22) retrieved 20 April 2024 from <https://phys.org/news/2010-02-coral-reefs.html>

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