

Researchers explore deep Caribbean reefs

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This photo released by the Smithsonian Institution shows a *Haptoclinus dropi*, a new blenny fish species collected in the Caribbean island of Curacao in 2013. Scientists with the Smithsonian Institution have discovered at least one new fish species off a deep reef in Curacao, where they will for the first time also collect yearlong data on temperature and biodiversity to monitor climate change effects in the Caribbean. (AP Photo/Smithsonian Institution, D. Ross Robertson and Carole Baldwin)

Scientists with the Smithsonian Institution have discovered at least one new fish species at a deep reef off Curacao while conducting a yearlong project to gather data on temperature and biodiversity for monitoring climate change effects in the Caribbean.

The discovery occurred in recent weeks off the southern edge of the Dutch Caribbean island as scientists used a submarine to explore depths up to 1,000 feet (305 meters).

Dr. Carole Baldwin, a Smithsonian research zoologist, told The Associated Press on Thursday that the team is studying 25 to 30 other specimens of fish and invertebrates collected during the trip that they believe are new species.

"It's like a biology bonanza," she said. "We're in depths that scientists just missed."

She said the data being collected during the project that began last August will help to monitor the health of Caribbean reefs and provide information for developing ways to protect the underwater features.

The Caribbean has 10 percent of the world's [coral reefs](#) and an estimated 1,400 species of fish and marine mammals, but [warming waters](#) and disease have decimated many reefs in the region. Live coral cover has dropped to an average 8 percent of reefs from 50 percent in the 1970s, experts say.

The new blenny fish species discovered by the team was caught with other fish around 525 feet (160 meters) deep. It is nearly an inch long and has iridescent fins and an orange and white body.

Scientists expect to return to Curacao in August to collect more specimens when they retrieve the year's worth of data on [ocean temperatures](#) and biodiversity in the area.

"It's really just the tip of the iceberg," Baldwin said. "This kind of exploration we're doing is critical."

Neil Hammerschlag, a research assistant professor at the University of Miami and director of its marine conservation program, said the data and collection of new species was essential to helping save Caribbean reefs.

"In order to conserve, you need to know what's there in the first place and to get an idea of the rate of biodiversity loss," said Hammerschlag, who is not involved in the study. "We know relatively little of deep reefs compared to shallow reefs."

When they began their study last August, Smithsonian researchers put 11 thermometers from 50 feet (15 meters) to 900 feet (274 meters) down and the devices are recording water temperatures every hour. Baldwin said the data will serve as a baseline for monitoring water temperature changes in the future.

Researchers also installed 11 artificial structures along reefs from 70 feet (21 meters) to 735 feet (224 meters) deep to promote and study the growth of organisms on them. Such structures have been used on shallow reefs before, but not on deep reefs, Baldwin said.

"We think there's a good chance these deep reefs could be significant to the survival of the shallow reefs," she said.

Mark Eakin, a coral reef monitoring expert at the U.S. National Oceanic and Atmospheric Administration, said there has been some monitoring of water temperatures at deeper reefs, but not on a long-term basis.

"They are filling a major gap in our knowledge of deep reefs," he said of the Smithsonian expedition.

Baldwin said she and other researchers expect to soon travel to Aruba and Saba to explore reefs there, and then hope to expand their expedition to the northern and eastern Caribbean.

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