

Researchers sample unusually rich deep-sea area off Hawaii

September 30 2016, by Caleb Jones



In this Sept. 2016 photo provided by the National Oceanic and Atmospheric Administration, a glass squid that was found off the coast of Hawaii's Big Island is shown. Federal researchers just returned from an expedition to study the biodiversity and mechanisms of an unusually rich deep-sea ecosystem off the coast of Hawaii. (NOAA via AP)

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off the coast of Hawaii's Big Island.

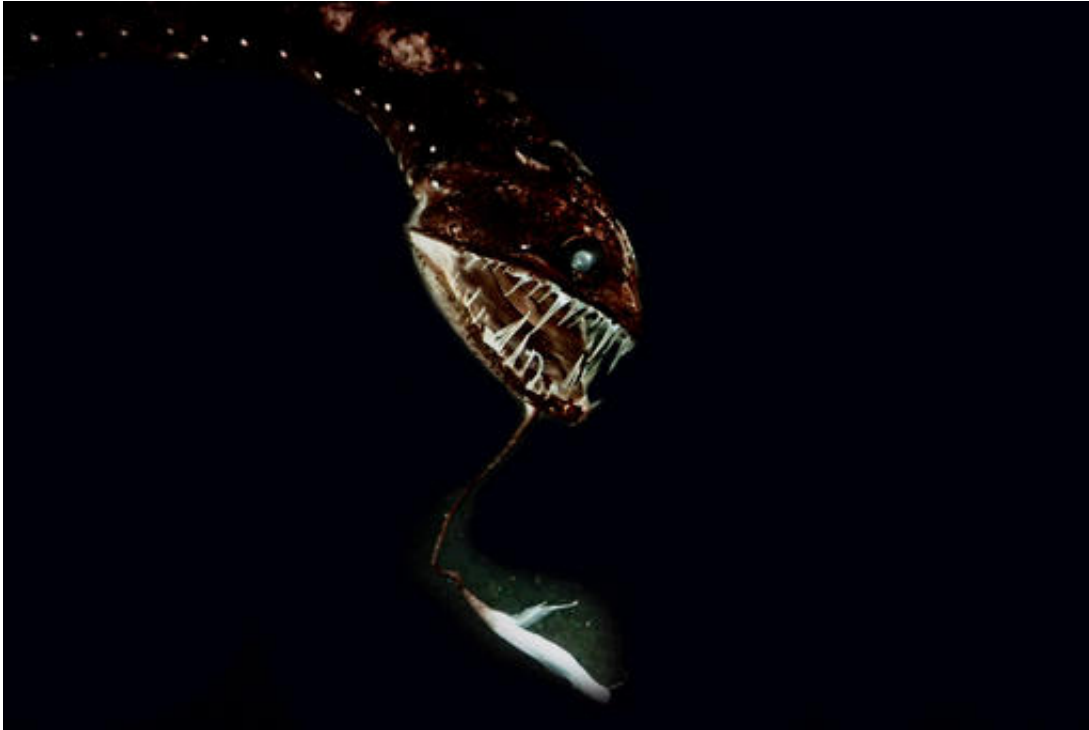
Scientists with the National Oceanic and Atmospheric Administration told The Associated Press in a telephone interview Thursday that the abundance of [sea life](#) sampled in a particular stretch of water off the Big Island points to a thriving deep-sea habitat, but they aren't exactly sure why. The area, about a mile off the south shore of Hawaii Island, was full of fish including sawtooth eels, dragonfish and many other mysterious deep-sea creatures.

Much of the ocean surrounding Hawaii is among the least productive water in the Pacific, said the expedition's lead researcher Jamison Gove, a NOAA oceanographer.

"Yet we know that Hawaii is this biological hotspot," he said. "So there's kind of this paradox: How can you have so much productivity around Hawaii yet the surrounding ocean waters are literally a barren ocean landscape?"

Part of the mission's purpose was to pinpoint why the islands, and this location in particular, are so rich in marine diversity, Gove said.

They took samples of the area from depths of about 1,500 to 2,000 feet using large trawling nets. They are now assessing those samples in hopes of better understanding potential management and policy needs around the region. They also hope the research will advance understanding of the overall ocean ecosystem, especially the largely unknown and unexplored deep sea areas.



In this Sept. 2016 photo provided by the National Oceanic and Atmospheric Administration, a dragonfish that was found off the coast of Hawaii's Big Island is shown. Federal researchers just returned from an expedition to study the biodiversity and mechanisms of an unusually rich deep-sea ecosystem off the coast of Hawaii. (NOAA via AP)

Jack Kittinger, the senior director of the Hawaii program at Conservation International, told the AP that the Kona coast is "such a gift," full of spectacular life. Some areas of the world's oceans simply have more life than others, he said, and a combination of factors, such as currents, water temperature and undersea topography, likely all play a role.

"We really have to do a good job of managing these special, amazing places, and Kona is absolutely one of them," Kittinger said. "If there's one (hotspot) in Kona, there's probably dozens and dozens of them in other places, including in Hawaii. We just haven't stuck anything down

there to find them yet."

It will take the researchers up to a year or more to draw their conclusions. But they believe part of the reason for such a rich habitat in this location is the way the seafloor dramatically rises as it reaches the island, bringing nutrients up and creating food for a wide range of sea life.



In this Sept., 2016 photo provided by the National Oceanic and Atmospheric Administration, a Commerson's frogfish that was found off the coast of Hawaii's Big Island is shown. Federal researchers just returned from an expedition to study the biodiversity and mechanisms of an unusually rich deep-sea ecosystem off the coast of Hawaii. (NOAA via AP)

"What we know about the ocean is less than the surface of the moon,"

Kittinger added.

The team also studied surface slicks, which are the narrow, glassy channels of water that are visible in the coastal ocean waters. The researchers found that these ribbons of water create "an oasis in the desert" as they pull together juvenile reef fish, baby sea turtles, plankton and even coral larvae. But the slicks, which are created by wind, tide and undersea structure, also gather other material, such as plastic and land debris, that could be hurting the life that exists there.

The federal research team was joined by scientists from Bangor University in North Wales, United Kingdom, and the University of Hawaii.



In this Sept., 2016 photo provided by the National Oceanic and Atmospheric Administration, swallower fish that were found off the coast of Hawaii's Big

Island are shown. Federal researchers just returned from an expedition to study the biodiversity and mechanisms of an unusually rich deep-sea ecosystem off the coast of Hawaii. (NOAA via AP)

Another recent expedition by Conservation International and the University of Hawaii was conducted further off the coast of the Big Island at a group of seamounts, active and dormant underwater volcanoes similar to the Hawaiian Islands that never reach the surface. The seamounts, like the area studied off the coast of the Big Island, were also rich in marine diversity, likely for many of the same reasons.

"There will always be the unexpected when you go into the deep ocean," said Conservation International's Greg Stone, the seamount expedition's lead scientist.



In this Sept. 2016 photo provided by the National Oceanic and Atmospheric Administration, a spookfish that was found off the coast of Hawaii's Big Island is shown. Federal researchers just returned from an expedition to study the biodiversity and mechanisms of an unusually rich deep-sea ecosystem off the coast of Hawaii. (Jessica Chen/NOAA via AP)

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