

PAPAHĀNAUMOKUĀKEA



PRESS RELEASE

FOR IMMEDIATE RELEASE—3 September, 2009

Deep Coral Reef Exploration Reveals More Ocean Wonders

Researchers return from a month long expedition to the Papahānaumokuākea Marine National Monument (PNMN) in the Northwestern Hawaiian Islands with new photos of rarely explored deep-sea environments, including a dozen records of deep-reef fishes never before seen near the islands of Nihoa, Mokumanamana, Laysan, Pearl and Hermes Atoll, Midway Atoll and Kure Atoll.

Aboard the NOAA Ship *Hi'ialakai*, scientists from the National Oceanic and Atmospheric Administration, the Hawaii Institute of Marine Biology and Bishop Museum demonstrated the safety of deep dive mixed gas technology as well as the tremendous potential for biological discoveries associated with exploration of deep coral reefs. This latest mission took the scientists as far as Kure Atoll, nearly 1,400 miles from Honolulu and the most northerly reef of the Hawaiian Archipelago. "Most coral reef research to date has been conducted in less than a hundred feet of water, yet coral reef habitat extends well below 300 feet," said Randall Kosaki, NOAA's Deputy Superintendent for the Monument and chief scientist aboard this cruise. "Using deep-diving technology, we are the only scientists to document first-hand the biodiversity of Hawaii's northernmost deep coral reefs."

Scientists working off the *Hi'ialakai* discovered diverse algal beds in 200 feet of water that serve as an extensive nursery habitat for juvenile deep-water coral reef fishes including inch-long masked angelfish, Japanese angelfish, and bandit angelfish. Many of the fishes observed on this research cruise are endemic species which are unique to Hawaii and are not found anywhere else on earth. The scientists collected specimens of a new species of butterflyfish in 200 feet of water. This species was first observed from submersibles, and had not previously been seen shallower than 400 feet. The specimens will be deposited in the Bishop Museum. The scientists also recorded the northernmost extent of several Hawaiian black coral species at Laysan Island and Pearl and Hermes Atoll.

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Scientists also noted warmer than usual sea surface temperatures and a small amount of coral bleaching which is associated with warming ocean temperatures.

“We saw limited bleaching of cauliflower coral in shallow water at Pearl and Hermes Atoll,” said Kosaki. Sea surface temperatures actually exceeded what is needed for bleaching at Pearl and Hermes Atoll for a brief time in early August, according to Kosaki. “At Midway Atoll, ocean temperatures reached the bleaching threshold but backed away from it by the middle of the month,” probably accounting for why researchers saw more bleached corals at Pearl and Hermes than at Midway. Kosaki said temperatures this year are still below those that resulted in a major bleaching event in 2002.

NOAA’s Coral Reef Watch program monitors sea surface temperatures via satellite imagery. Coral bleaching occurs when higher than normal temperatures cause the corals to expel pigmented algae living within their tissues, resulting in a pale or “bleached” appearance. Prolonged bleaching can lead to coral mortality, and may increase their susceptibility to disease. Specific data for Midway can be viewed at: http://coralreefwatch.noaa.gov/satellite/virtual_stations/graphs/vs_multiyear_Midway.png

Updates and daily blogs from the mission are posted at <http://sanctuaries.noaa.gov/missions/2009pmnm>.

NOAA Ship *Hi`ialakai* embarks again for Papahānaumokuākea on Sept. 17, 2009 for a Pacific Reef Assessment and Monitoring Program or RAMP.

Papahānaumokuākea is cooperatively managed to ensure ecological integrity and achieve strong, long-term protection and perpetuation of Northwestern Hawaiian Island ecosystems, Native Hawaiian culture, and heritage resources for current and future generations. Three co-trustees – the Department of Commerce, Department of the Interior, and State of Hawai‘i – joined by the Office of Hawaiian Affairs, protect this special place, which is now being considered for inscription as a UNESCO World Heritage Site. For more information, please visit www.papahanaumokuakea.gov

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