

## 2010 Coral Bleaching Current Conditions Reports: 29 September Papahānaumokuākea Marine National Monument

**The Monument has avoided the extreme mass coral bleaching events seen in other coral reef areas this year, instead experiencing localized bleaching in shallow water areas at Kure and Pearl & Hermes.**

Divers on NOAA's Reef Assessment and Monitoring Program cruise documented moderate to high bleaching among coral species known to be vulnerable to bleaching on shallow water reefs in the north and northwest of Kure and the southwest of Pearl and Hermes. Overall, approximately 27% of the reef area around Kure and 19% of the reef area around Pearl and Hermes was affected.

While this year's bleaching is restricted to a few local areas, it continues a trend of small-scale, annual bleaching events that have been seen in the Monument over the last 5 – 10 years. Such increases in the frequency and spatial area affected by bleaching are consistent with both increased observations of bleaching globally, and predictions of an increased threat from mass coral bleaching with climate change.

NOAA scientists do not expect significant coral death to result from the localized bleaching observed this year, however, corals stressed by the bleaching may be more susceptible to disease.

Diver observations are consistent with satellite-derived estimates of above average temperature for the Monument (right). NOAA scientists will not visit the northern NW Hawaiian Islands again this year, but Monument staff will continue to track satellite data from NOAA's Coral Reef Watch program to confirm that temperatures dissipate over the next few weeks as expected.

For further information, please contact NOAA's Research Coordinator for PMNM ([heidi.schuttenberg@noaa.gov](mailto:heidi.schuttenberg@noaa.gov)).

### Background

Papahānaumokuākea Marine National Monument (PMNM) is one of the most pristine and best protected coral reef ecosystems in the world. While PMNM's management is designed to best support the ecosystem's resilience to climate change, these measures cannot completely prevent damage from climate change.

One of the effects of climate change is to increase the risk of reef damage through mass coral bleaching events. Mass coral bleaching occurs when unusually warm water temperatures disrupt the relationship between corals and the symbiotic microscopic algae that live within their tissues. Temperature stress causes the coral to expel the algae, and the reef appears white or "bleached" as its calcium carbonate skeleton becomes visible.

Papahānaumokuākea Marine National Monument is co-managed through a partnership of the Department of the Interior's U.S. Fish and Wildlife Service, the Commerce Department's National Oceanic and Atmospheric Administration, and the State of Hawaii. PMNM works with a network of leading scientists to assess bleaching risks and impacts by monitoring climate forecasts, sea temperatures, and coral conditions throughout the bleaching season (July-November).



Bleached coral colony, *Montipora capitata*, on a reef at Kure Atoll (Photo by: Jason Helyer, NOAA)

