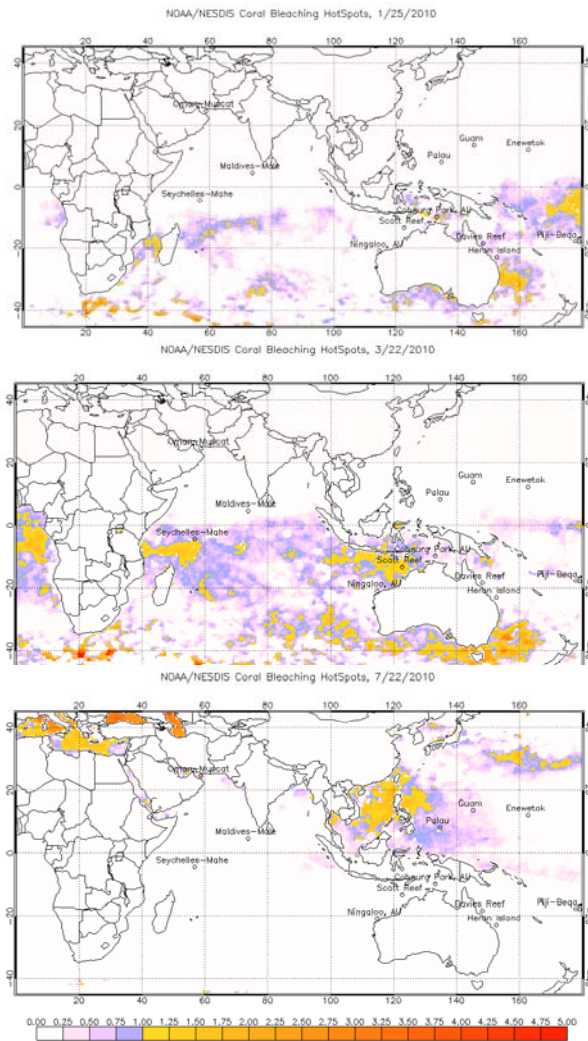


The hot sea !!!

This year the sea is exceptionally hot. NOAA hot spot maps showed that the temperature in South Indonesia was above average since February, peaking in March, and fading off in June. The heat is now moving north towards the Philippines, Palau, and Guam.



A HotSpot value of 1.0 °C means the sea surface temperature is currently 1.0 °C warmer than the highest monthly average temperature for that location, and is a threshold for thermal stress leading to coral bleaching. HotSpot values <1.0 °C are shown in purple, and HotSpots ≥1.0 °C range from yellow to red. Global images and data sets are at 0.5° (50km) resolution, and are updated twice-weekly. Source: <http://www.esoed.noaa.gov/m/occean/ccb/hotspots.html>

This year, bleaching has been reported from Madagascar to Andaman Sea. In Indonesia, about 20 locations have reported mass bleaching, and in Sabang and East Aceh up to 90% of corals were reported bleaching. Bali has a mild-medium bleaching (up to 40% at Lypah Bay, Amed). It is predicted that by 2020, coral reefs in many parts of the world may suffer mass bleaching and mortality every year (Hoegh-Guldberg 1999).



Spermonde, May 2010. Photo by Muhajir MacLauda



Sabang, July 2010. Photo by Epong, WCS

BUNAKEN AND BLEACHING

So far, the hotspot has skipped North Sulawesi Area. And with the likely movement of the hotspot from North of Philippines towards Palau, potentially, Bunaken will not be affected by the bleaching. However, it does not mean that the reef does not need our help.

In the same way that people who are in shape can fight and recover from disease, corals that are tough and healthy are more likely than weaker corals to survive stressful events, such as *Acanthaster* outbreak, or coral bleaching. Here are some suggestions that you can do as a dive operator.

1. Ask snorkelers and divers not to touch, step, or kick the corals. Make sure divers have good buoyancy and that their dive equipment is securely attached. Consider keeping beginner divers at a distance from bleached corals.
2. Help maintain healthy populations of herbivorous reef fish, such as parrotfish, rabbitfish, surgeon fish, rudder fish, as well as sea urchins. Consider reducing the removal of these species. These creatures play an important role in removing algae, which can overgrow areas of the reef that had mass mortality. Algae-free areas are crucial for baby coral to settle and grow.
3. Be informed about the bleaching and the hotspot movement (in Indonesia, around April-June, and October-December). Help us to understand the extent of a bleaching event by informing us about the bleaching and non-bleaching areas among your dive sites. Therefore we can have preliminary information on which areas are stronger than others.
4. Help us to monitor the condition of affected and unaffected dive sites. Monitoring gives us clues about which areas recover better than others.
5. Help reefs to recover faster by stabilizing substrates through rehabilitation efforts.
6. Help authorities to enforce rules in the area.
7. Encourage your divers to actively reduce their greenhouse gas emissions.

Many of famous diving sites in the Maldives, Thailand, and Malaysia have reported severe bleaching; up to 100% of corals were reported to be bleaching. The Malaysian government has closed some sites in Tioman and Redang to help to reduce stress to the corals.



Bleaching at Rachai Yai, Thailand: June 2010. Photo: Dr. Mark Eakin

Bleaching at Rachai Yai, Thailand: July 2010. Photo: Dr. James True



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