



Coral bleaching following wintry weather

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ABSTRACT: Extensive coral bleaching occurred intertidally in early August 2003 in the Capricorn Bunker group (Wistari Reef, Heron and One Tree Islands; southern Great Barrier Reef). The affected intertidal coral had been exposed to unusually cold (minimum = 13.3° C; wet bulb temperature = 9° C) and dry winds (44% relative humidity) for 2 d during predawn low tides. Coral bleached in the upper 10 cm of their branches and had less than 0.2×10^6 cell cm^{-2} as compared with over 2.5×10^6 cell cm^{-2} in nonbleached areas. Dark-adapted quantum yields did not differ between symbionts in bleached and nonbleached areas. Exposing symbionts to light, however, led to greater quenching of Photosystem II in symbionts in the bleached coral. Bleached areas of the affected colonies had died by September 2003, with areas that were essentially covered by more than 80% living coral decreasing to less than 10% visible living coral cover. By January 2004, coral began to recover, principally from areas of colonies that were not exposed during low tide (i.e., from below dead, upper regions). These data highlight the importance of understanding local weather patterns as well as the effects of longer term trends in global climate.

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