# Cyclone promotes rapid colonisation of benthic diatoms in the Great Barrier Reef

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**Fig. 1** Coral breakage caused by Cyclone Larry (*Acropora* sp. 5 m depth), followed by colonization of recently exposed substrate by benthic diatoms, giving the reef a yellowish coloration

Tropical Cyclone Larry (TCL) crossed the Great Barrier Reef (GBR) on 20 March 2006, close to the town of Innisfail (18°30′S, 146°00′E). TCL was a severe Category 5 cyclone, which generated wind gusts of up to 240/290 km $h^{-1}$ and sustained winds of up to 170/215 km $h^{-1}$. Three days after the cyclone, surveys of several offshore and inshore reefs revealed extensive damage, including breakage and overturning of corals, dislodgement and tearing of soft corals and sponges, exfoliation of reef matrix, transport of sand and dislodgement of seaweeds. The benthic algal community responded rapidly to the cyclone disturbance. Newly available substrates were immediately colonised by an extensive bloom of benthic, pennate diatoms, giving the reef a yellowish coloration (Fig. 1). The bloom apparently resulted from the increase in substrate available for colonisation, but may also have been promoted by nutrient increases, either from run-off (on inshore reefs) or by storm-disturbed sediments (e.g., Russ and McCook 1999). There have been few documented examples of blooms of benthic diatoms after cyclone disturbances, although their planktonic counterparts (Delesalle et al. 1993) and some green benthic macroalgae (Littler and Littler 1999) are known to bloom after storms.

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Reef sites

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