Pole-ward range expansion of *Acropora* spp. along the east coast of Australia

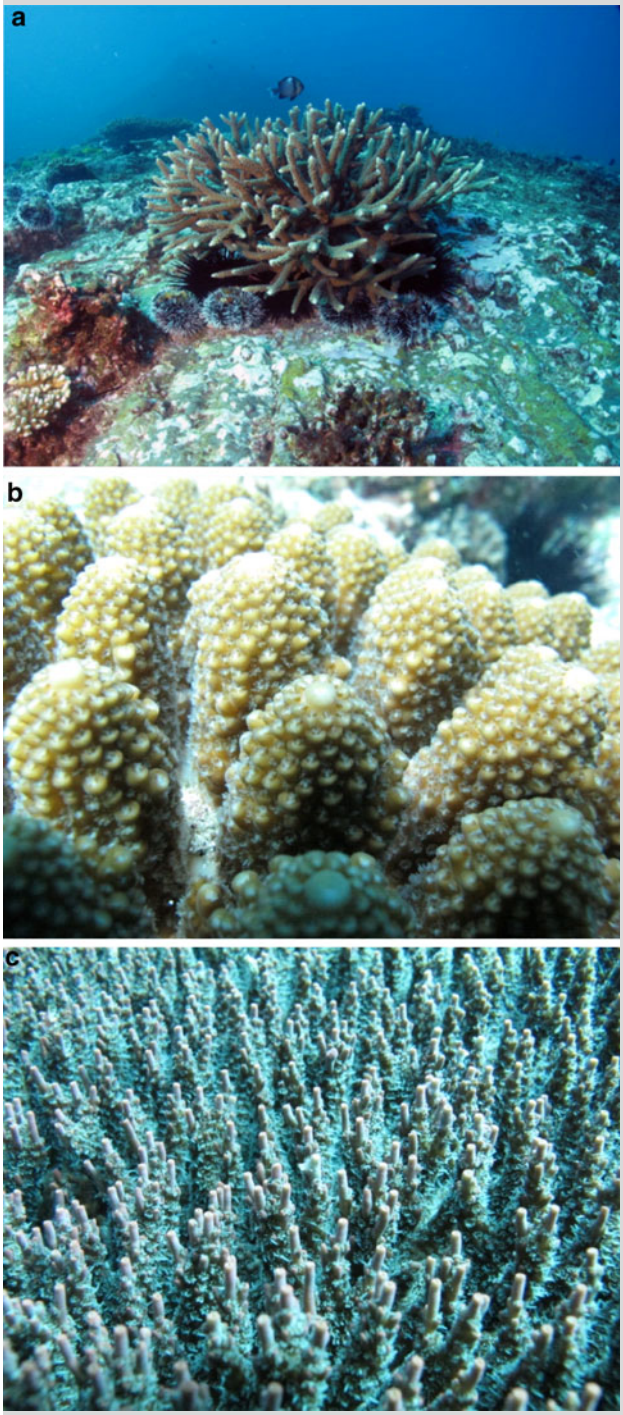

Fig. 1 **a** *Acropora intermedia*. **b** *A. monticulosa*. **c** *A. microclados*

Global temperature has warmed approximately 0.35 °C over the last 50 years. In response, many tropical species are expanding their ranges pole-ward. For example, a number of tropical fish species have recently established populations in temperate regions along the east coast of Australia, as rises in sea temperatures enable them to survive over winter (Figueria and Booth 2010). Similarly, in Japan, two common tropical *Acropora* species have been expanding their range pole-ward since the 1930s (Yamano et al. 2011). However, there is no evidence to date of similar changes in the distribution of corals along the east coast of Australia. In December 2011, in the Solitary Islands (30 °S), we observed four coral species that had not been recorded in the previous extensive surveys of scleractinian corals (Harriott et al. 1994 and references therein): *Acropora intermedia*, *A. microclados*, *A. monticulosa* (Fig. 1) and *A. gemmifera*. These species are well defined morphologically, they are easy to recognise in the field and the colonies observed were all large (Fig. 1). Consequently, they were unlikely to have been overlooked in the previous surveys. Average winter temperatures in the Solitary Islands have increased by approximately 0.5 °C since 1975 (Figueria and Booth 2010), the date of the first coral surveys. These pole-ward range expansions raise the possibility that corals along the east coast of Australia may be in the process of adjusting to changes in the regional environment caused by global warming.

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