Turbinaria sp. as victims to *Kappaphycus alvarezii* in reefs of Gulf of Mannar, India

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Fig. 1 **a** *Kappaphycus alvarezii* on *Turbinaria* sp. at Kurusadai island, Gulf of Mannar, **b** Profuse growth of *K. alvarezii* between the plates of *Turbinaria* sp. and **c** Smothering effect of *K. alvarezii* on the top of the *Turbinaria* sp

The Gulf of Mannar (GoM), India, includes 21 coral islands (8°N; 79°E), covers an area of 10,500 sq. km and supports 94 species of corals belonging to 37 genera. *Kappaphycus alvarezii*, a Philippine-derived rhodophyte, has been introduced into the GoM for commercial cultivation in 2002. The ecological threat from this invasive alga to coral species in GoM was first indicated by Pereira and Verlecar (2005). After 6 years of its introduction, its bioinvasion on branching corals (*Acropora* species) in the Kurusadai island (9°15'N; 79°12'E) of GoM was reported in 2008 (Chandrasekaran et al. 2008). Consequently, commercial cultivation of this invasive alga was prohibited. A mechanical removal programme started in 2009 by the State Government at the invaded site could not deliver expected results. Thus, this alga enjoys a freedom of unrestricted spread and aggressive growth in GoM, predominantly on species of *Acropora*. On 28 April 2010, during our routine sampling visit at Kurusadai Island, unusual appearance of *K. alvarezii*, on the cup coral, *Turbinaria* sp. was observed (Fig. 1a). The space between the plates of *Turbinaria* sp. provides an ideal settlement surface for *K. alvarezii*, which protect them from the wave action and favour the profuse growth of secondary branches of *K. alvarezii* between the plates (Fig. 1b) in contrast to the smothering effect on the top of coral plates (Fig. 1c). This finding shows that *K. alvarezii* is capable of invading species of non-branching corals as reported in Hawaii for *Montipora capitata* and *Porites compressa* (Conklin and Smith 2005). Therefore, perhaps this is the first report from India on bioinvasion of *K. alvarezii* on a non-branching coral (*Turbinaria* sp.) in the GoM.

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