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## **Diversity and distribution of octocorals and scleractinians in the Persian Gulf region**

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# Appendix 3

## **Coral mortality and serpulid infestations associated with red tide, in the Persian Gulf**

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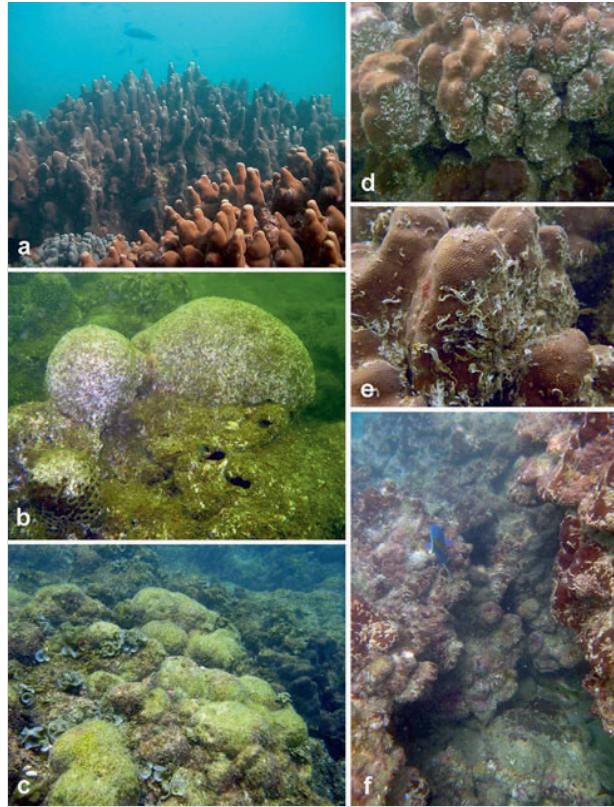
This appendix has been previously published and re-used here with permission of the publisher. For original publication please refer to: *Coral Reefs* 29: 509. doi:10.1007/s00338-010-0601-x (<http://link.springer.com/article/10.1007/s00338-010-0601-x>).

A prolonged unusual red tide (about 10 months) recently occurred in the Persian Gulf. It started in August 2008 near the Strait of Hormuz and remained till May 2009 at Iranian side. Following this event, corals experienced severe settlement by fouling organisms, specifically serpulid worms, which settled not only on dead corals but also started to overgrow live polyps (Fig. 1d–e). This was followed by an increase in sedimentation, asphyxiation, and catastrophic death of corals in the described area.

The affected coral assemblage, predominantly consisting of *Porites* species (Fig. 1a), is situated in the southeast of Qeshm Island (26° 55.689' N, 56° 16.032' E), in the Strait of Hormuz. It has an area of about 12 ha and is located 100–150 m from the shoreline at 2–8 m depth. The serpulid settlement increased dramatically after the red tide: three months after the beginning

of the red tide, levels of infestation had reached  $47 \pm 9.3$  per 25 cm<sup>2</sup> in some colonies (Fig. 1b, d–e). The serpulids covered, smothered and killed more than 90% of the *Porites* colonies in early stages (Fig. 1f); later, the same scenario happened to other species, with *Goniopora* as an exception. Subsequently, the dead colonies became covered by green filamentous algae (Fig. 1c). Similar observations with different levels of mortality were made at nearby islands (Larak, Hengam).

Previous studies suggest that the density of coral associates may indicate the health of coral communities (Risk et al. 2001; Scaps and Denis 2008). As most of these associates are filter feeders, a higher nutrient concentration will increase their numbers, followed by an increase of coral stress and a decrease of their ability to resist the settlement and overgrowth of harmful epibionts (Holmes et al. 2000).



**Fig. 1** a The coral community before the red tide (photo: M.S. Ranjbar), b Corals covered by serpulids three months after red tide, c Dead corals covered by algae six months after red tide, d–e Serpulid worms overgrowing live coral tissue, f Corals smothered by overgrowth.

## References

- Holmes KE, Edinger EN, Haryadi, Limmon GV, Risk MJ (2000) Bioerosion of live massive corals and branching coral rubble on Indonesian coral reefs. *Mar Pollut Bull* 40:606–617.
- Risk MJ, Heikoop JM, Edinger EN, Erdman MV (2001) The assessment 'toolbox': community-based reef evaluation methods couples with geochemical techniques to identify sources of stress. *Bull Mar Sci* 69(2):443–458.
- Scaps P, Denis V (2008) Can organisms associated with live scleractinian corals be used as indicators of coral reef status?. *Atoll Res Bull* 566.