

Could the invasive scleractinians *Tubastraea coccinea* and *T. tagusensis* replace the dominant zoantharian *Palythoa caribaeorum* in the Brazilian subtidal?

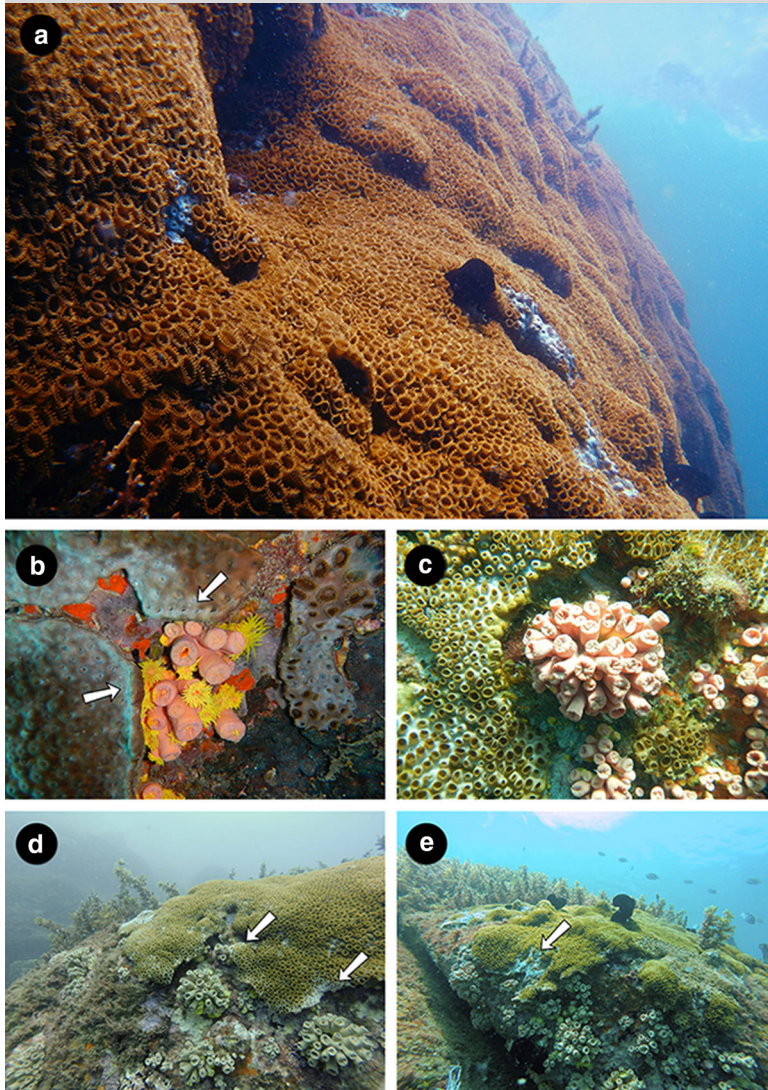


Fig. 1 **a** Natural dominance of *Palythoa caribaeorum* on shallow-water rocky shores of southeastern Brazil. **b–e** Series of images showing *Tubastraea tagusensis* outcompeting *P. caribaeorum*. Arrows indicate damaged/necrosed tissue of *P. caribaeorum* due to direct contact with *T. tagusensis*. **c–e** Note the halo in the zoantharian formed by the tissue expansion of *T. tagusensis*

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Commonly known as sun corals, *Tubastraea coccinea* and *T. tagusensis* are invasive scleractinians that are changing the marine biodiversity of Brazilian coastal ecosystems. Since their first report in Brazilian waters (an offshore oil platform in the Campos Basin; Castro and Pires 2001), both species have spread over more than 3000 km in the SW Atlantic, threatening endemic species such as *Mussismilia hispida* (Creed et al. 2017). At Ilha dos Búzios, São Paulo, a locality where the invasion has covered the vertical portion of the infralittoral, we observed that sun corals are out-competing *Palythoa caribaeorum*. The latter is one of the most dominant species in shallow waters along the Brazilian coast (Fig. 1a). *Palythoa caribaeorum* is considered an aggressive competitor due to the production of palytoxin (Gleibs et al. 1995), but when in direct contact with sun corals, *P. caribaeorum* colonies receded or necrosed (Fig. 1b–e). Thus, since *P. caribaeorum* is a community structuring species on Brazilian rocky shores, its replacement with the invasive sun corals may change biodiversity and community dynamics in shallow waters. Monitoring and management is urgently needed to control invasive *Tubastraea* spp. and the potential biodiversity loss due to their invasion.

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