

Aggressive colonial ascidian impacting deep coral reefs at Bonaire, Netherlands Antilles

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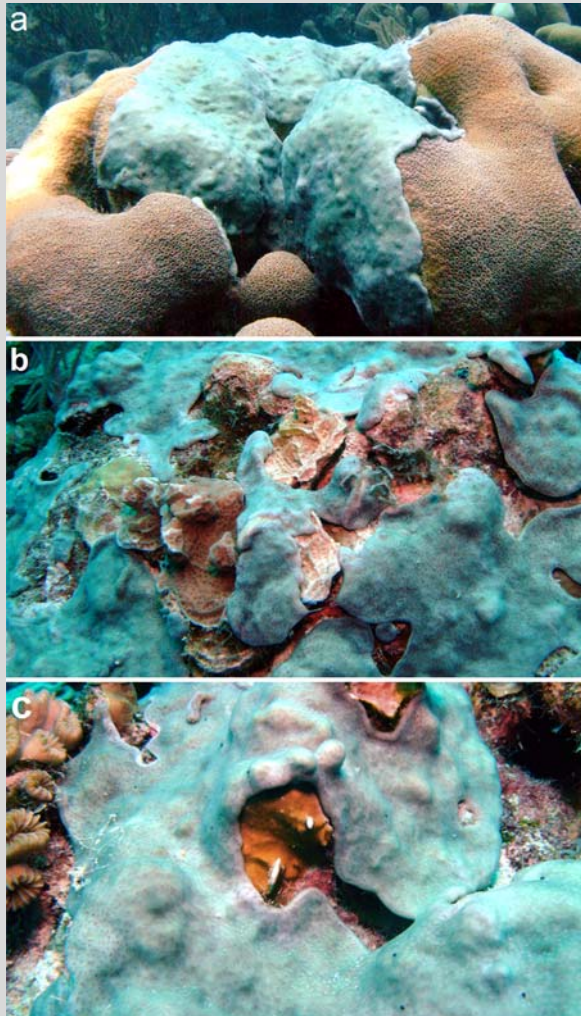


Fig. 1 *Trididemnum solidum* overgrowing live coral and benthic substrata at Bonaire, Netherlands Antilles. **a** *Montastraea annularis*, **b** *Agaricia agaricites*, **c** *Millepora* sp

Large colonies of the ascidian *Trididemnum solidum* were observed during benthic surveys at Bonaire, Netherlands Antilles, in January 2009. Mean cover of *T. solidum* was recorded in a total of 72, randomly located, 30 m long by 1.3-m-wide photo transects, in four replicate transects at three depths (5, 10, and 20 m) in each of six locations along the northwest coast of Bonaire. Locations were chosen due to their remoteness from human development. Photographs were analyzed using CPCe. *T. solidum* occupied $10.4\% \pm 3.8$ (mean \pm SE) of available substrata (*sensu* Bak et al. 1996) at the 20-m site at the Saliña Tern location. Mean *T. solidum* cover of available substrata (all sites pooled) significantly increased with depth ($P \leq 0.05$) with $0.2\% \pm 0.1$ at 5 m, $3.2\% \pm 0.6$ at 10 m, and $6.3\% \pm 0.8$ at 20 m. While *T. solidum* colonies occurred on various substrata, aggressive overgrowth of scleractinian corals including *Montastraea* spp. (Fig. 1a) and *Agaricia agaricites* (Fig. 1b) and the hydrocoral *Millepora* spp. (Fig. 1c) were frequently observed.

Bak et al. (1996) recorded a 900% increase in the number of *T. solidum* colonies on neighboring Curaçao between 1978 and 1993. Daily availability of larvae (van Duyl et al. 1981), fast growth rates, and high mobility (Bak et al. 1981) make *T. solidum* a potentially superior competitor over corals in environments altered by disturbance (Bak et al. 1996). High abundance of the aggressive *T. solidum* ascidian recorded at deeper reefs in this study is of concern and highlights another threat to Bonaire's coral reefs, especially as deeper reefs are considered to be relatively undisturbed (Bak et al. 2005).

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B. Sommer (✉) · P. L. Harrison · S. R. Scheffers
Coral Reef Research Centre, School of Environmental Science and Management, Southern Cross University, Lismore,
NSW 2480, Australia
e-mail: Brigitte.Sommer@aanet.com.au

Reef sites

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