Reef sites

Reef oases in a seamount chain in the southwestern Atlantic

Fig. 1 Reef habitats of the Vitória-Trindade Chain (**a**), off central Brazil: (**b**) rhodolith beds (60 m depth); (**c**) and (**d**) coralline algae reefs of Vitória Seamount, with details of the reef crests (35 m) and (**e**) reef-sand interface (55 m). Map: J. B. Teixeira. Photos: H. T. Pinheiro

The Vitória-Trindade Chain (VTC) is a line of seamounts extending 1,200 km eastwards from the central Brazilian coast (20°S) to the Trindade and Martin Vaz islands (Fig. 1a). These seamounts present mesophotic summits (60–55 m depths) that are predominantly flat and covered by soft sediments and rhodolith beds (Pereira-Filho et al. 2011; Fig. 1b). High-relief biogenic reefs (Fig. 1c) were only recently found in the VTC, during two expeditions in 2011. These singular structures are mostly built by crustose coralline algae and sparse corals and hydrocorals (Fig. 1d), reaching up to 35–17 m (Vitória and Davis seamounts) and 62–84 m depths (Jaseur and Columbia seamounts). Structural reefs shelter a richer and more abundant fauna than the surrounding flat beds, including large, endangered, and commercially important reef fishes (Fig. 1e). Although being small and sparse, reef patches represent a critical habitat in the VTC, functioning as connectivity stepping-stones for several reef organisms that reach and maintain permanent populations in the isolated islands (Floeter and Gasparini 2000). As fishing effort is largely unregulated and mining of carbonates is already taking place at the VTC, the region urgently needs increased scientific and conservation efforts.

References

- Floeter S, Gasparini J (2000) The southwestern Atlantic reef fish fauna: composition and zoogeographic patterns. *J Fish Biol* 56:1099–1114
- Pereira-Filho G, Amado-Filho GM, Moura RL, Bastos AC, Guimarães SMPB, Salgado LT, Francini-Filho RB, Bahia RG, Abrantes DP, Guth AZ, Brasileiro PS (2011) Extensive rhodolith beds cover the summits of southwestern Atlantic ocean seamounts. *J Coast Res* 28:261–269

H. T. Pinheiro (✉)

Department of Ecology and Evolutionary Biology, University of California Santa Cruz, Santa Cruz, CA, USA
e-mail: htpinheiro@gmail.com

H. T. Pinheiro
California Academy of Sciences, San Francisco, CA, USA

J.-C. Joyeux
Departamento de Oceanografia e Ecologia, Universidade Federal do Espírito Santo, Vitória, ES, Brazil

R. L. Moura
Instituto de Biologia and SAGE/COPPE, Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ, Brazil

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