

Reef sites

Precious coral and rock sponge gardens on the deep aphotic fore-reef of Osprey Reef (Coral Sea, Australia)

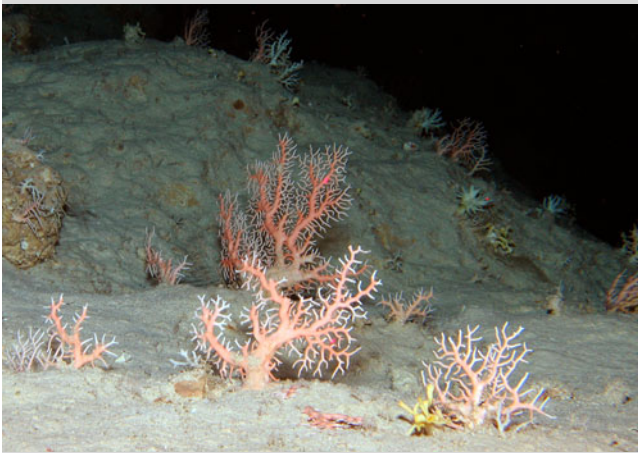


Fig. 1 Garden of precious corals (*Corallium* sp.) at North Horn (Osprey Reef, 265 m depth). Size of colonies about 30 cm (centre foreground). Photo: Marum



Fig. 2 Garden of rock sponges ('Lithistida', the dirty round 'balls'), red ophiuroids, a crinoid and cold-water corals (*Madrepora* sp., left and right side of image) at North Horn (Osprey Reef, 375 m depth). Photo: Marum

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References

- Bongaerts P, Bridge TCL, Kline DI, Muir PR, Wallace CC, Beaman RJ, Hoegh-Guldberg O (2011) Mesophotic coral ecosystems on the walls of Coral Sea atolls. *Coral Reefs* 30:335
- Dohrmann M, Göcke C, Janussen D, Reitner J, Lüter C, Wörheide G (2011) Systematics and spicule evolution in dictyonal sponges (Hexactinellida: Scepstrulophora) with description of two new species. *Zool J Linn Soc* (in press)

G. Wörheide (✉) · S. Vargas

Department für Geo- und Umweltwissenschaften & GeoBio-Center, Ludwig-Maximilians-Universität München, Richard-Wagner-Str. 10, 80333 München, Germany
e-mail: woerheide@lmu.de

C. Lüter

Museum für Naturkunde, Leibniz-Institut für Evolutions- und Biodiversitätsforschung an der Humboldt-Universität zu Berlin, Berlin, Germany

J. Reitner

Courant Research Center Geobiology, Georg-August-Universität Göttingen, Göttingen, Germany

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In December 2009, the Deep Down Under Expedition (www.deepdownunder.de) explored the deep fore-reef slopes of the Queensland Plateau's western reefs in the Coral Sea to a depth of 850 m. Due to its rich biodiversity and heritage value, the Coral Sea was declared a Conservation Zone (Coral Sea Conservation Zone, CSCZ) by the Australian Government in May 2009. However, while the uniqueness and importance of Coral Sea shallow-water reefs have been recognized, knowledge of sub-photic benthic communities is deficient (see also Bongaerts et al. 2011). An inspection-class remotely operated vehicle (ROV 'Cherokee', Marum, Bremen) was deployed at Osprey (13°50S 146°32E) and Bougainville (15°29S 147°05E) Reefs to explore deep aphotic benthic communities. For the first time in tropical eastern Australia, gardens of precious corals (*Corallium* sp.; Fig. 1) as well as rock sponges ('Lithistida') and cold-water corals (*Madrepora* sp.) (Fig. 2) were discovered on the walls of Osprey Reef near North Horn, in depths of 265 and 375 m, respectively. Several new species of glass sponges that have reef-building potential were also recently described from deep Osprey Reef (Dohrmann et al. 2011). The discovery of these previously unknown and unique communities on the deep Coral Sea fore-reefs underpins the importance of the CSCZ as an exceptional biodiversity resource that warrants continued protection, scientific exploration and documentation.

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