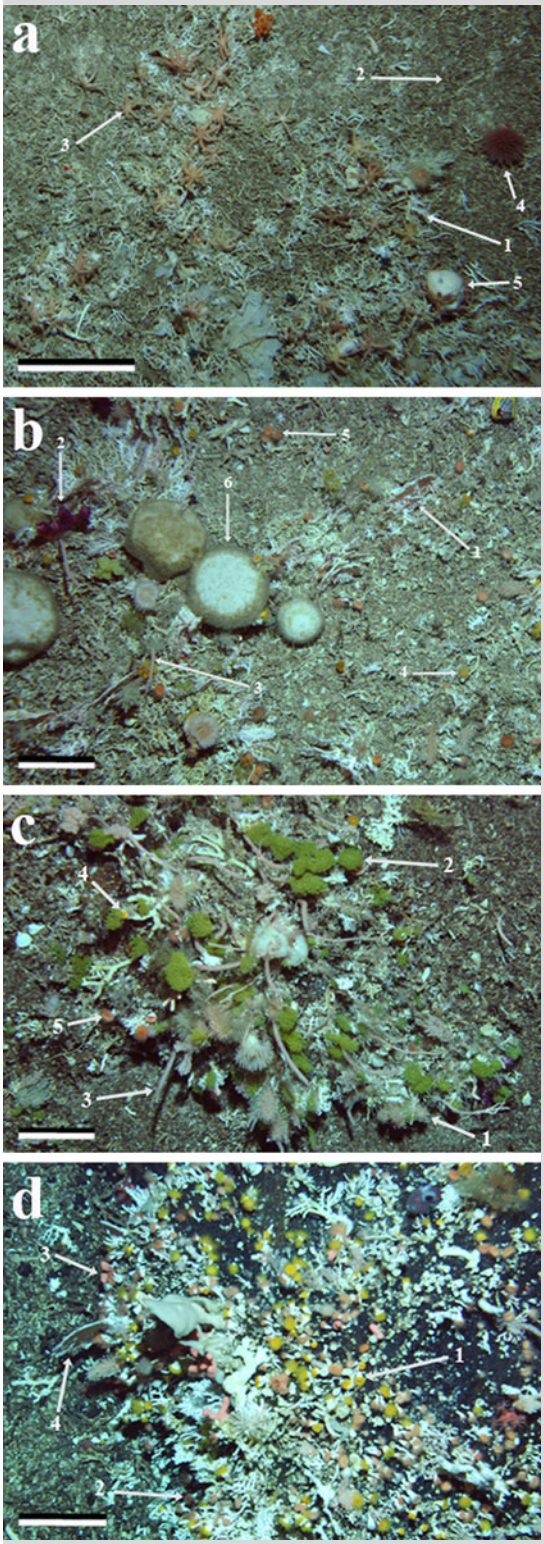
Southern ocean corals: Cabo de Hornos



The widespread distribution of cold-water reefs is becoming better documented through deep-sea exploration. Historically, these efforts have focused on the waters of North America and Europe, leaving large gaps in our knowledge of the rest of the deep ocean. Here, we describe spectacular coral growths in the Southern Ocean. A few coral specimens have been collected from the Drake Passage region (Cairns 1982), but it was not until 2008 that an expedition was launched specifically to study cold-water coral distributions in space and time (Burke et al. 2010). During that cruise, we found that corals were abundant across the Drake Passage (Waller et al. 2011) and thus revisited in 2011 with a Drop Camera system to investigate these areas in greater detail.

In this Reef Site, we show the first high-resolution images of the diverse coral assemblages on Cabo de Hornos (Cape Horn—57°04S, 67°30W), from 500 m to over 1,400 m depth. Stylasterids dominated this ecosystem, but large numbers of octocorals and solitary corals were also present. Dead stylasterids were observed in the images (e.g., Fig. 1a, b) indicating that reef formation has been active over time. At the deeper locations (Fig. 1c, d), the largest aggregations occurred on boulders and bedrock, though free-living solitary corals (*Flabellum* sp.) were frequently seen in sediments. In all areas where corals were present, a high diversity of associated fauna was also observed (e.g., sponges, ophiuroids, cephalopods, fish, and actinarians). This area appears to be a hotspot of biodiversity in the deep sea, perhaps representing a key larval source of cold-water corals into the Drake Passage.

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◀ **Fig. 1** **a** 550 m depth, stylasterids (live (*1*) and dead (*2*) understory), with ophiuroids (*3*), anemones (*4*), and sponges (*5*) as dominant associates. **b** 850 m depth, stylasterids (*1*), octocorals (e.g., *Bayergorgia* sp. (*2*), *Primnoella* sp. (*3*)) and solitary scleractinians (*Balanophyllia malouinensis* (*4*), *Flabellum curvatum* (*5*)). Large sponges (*6*) can also be seen. **c** 970 m depth, Octocorals (e.g., *Digitogorgia* sp. (*1*), *Thouarella* sp. (*2*), *Primnoella* sp. (*3*)), and scleractinians (*B. malouinensis* (*4*), *F. curvatum* (*5*)). **d** 1,400 m depth, scleractinians (*B. malouinensis* (*1*), *F. curvatum* (*2*)), octocorals (e.g., *Paragorgia* sp. (*3*)), and stylasterids (*4*). *Scale bars*: 15 cm

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