

## “Locally extinct” coral species *Seriatopora hystrix* found at upper mesophotic depths in Okinawa



**Fig. 1** *Acropora tenella* covers large areas of the reef, shown here at 39 m



**Fig. 2** Coral community at 40 m, showing *Pachyseris speciosa*, as well as *Seriatopora hystrix* and other species



**Fig. 3** Coral community at 47 m dominated by *S. hystrix*

Following the bleaching events of 1998 and 2001, *Seriatopora hystrix* disappeared from shallow reefs around Okinawa Island, Japan (van Woesik et al. 2011). Here we report finding *S. hystrix* in a mesophotic coral ecosystem near Motobu Peninsula on Okinawa Island. This diverse coral community occurs on the reef downslope from ~35 m and extends to at least 47 m depth, with the lower boundary yet to be defined. Along with *Acropora tenella* (Fig. 1) and *Pachyseris speciosa* (Fig. 2), *S. hystrix* (Fig. 3) is one of the most abundant species in this community. Following the “extinction” of shallow *S. hystrix*, no new recruitment events were observed in nearby shallow reefs; thus, the presence of a deep population of this species likely does not originate in recent recruitment but would demonstrate that *S. hystrix* has not gone extinct in this location. Potentially, this deep population could contribute to the recolonization of *S. hystrix* at shallower depths, although that is strongly dependent on the level of genetic structuring over depth (Bongaerts et al. 2011; van Oppen et al. 2011). The importance of other “shallow” species in community composition is being further investigated to determine the possible role of this reef as refugium.

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