Loss of live tissue and exposure of coral skeleton in *Porites cylindrica* at Shiraho, Ishigaki Island, Japan

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Shiraho Reef in Ishigaki Island, Japan (24°22′N, 124°15′E) is known for having one of the largest *Heliopora coerulea* communities in the world. In August and September 2007, loss of live tissue and exposure of skeleton were observed in *Porites cylindrica*, which constituted a 150-m section of a coral wall along the inshore edge of the *H. coerulea* community. The largest bleaching event since 1998 occurred in Ishigaki Island in July and August 2007. Most *P. cylindrica* branches in the study area did not bleach, but unusual tissue loss, which has not been reported, was found in 59% of the branches. Exposed skeletal areas varied widely in size and shape, from circular patches of a few-mm diameter, to larger, irregularly shaped patches, and to areas covering more than half branch surfaces (Fig. 1). Tissue loss was not localized: it was found at any place along branch axes. A line of white tissue, less than one-polyp width, bordered the exposed skeletal area. The live tissue next to the line also paled, but was not as white as the line itself. When the areas of exposed skeleton were large, tissue margins were not attached to the underlying skeleton and were peeling off of it, suggesting that whitish tissue margins were not the advancing edges of growing tissue. White patches of about 3-5 mm diameter without tissue loss were also present. Skeletal areas with their white-tissue margins coalesced to each other in many places. These observations suggest that the tissue loss advances in the following sequence: whitening of tissue in small circular patches, enlargement of white patches and loss of live tissue from their centers, coalescence of multiple patches, and further expansion of areas of exposed skeleton. The cause of the tissue loss was not studied, but its occurrence during the bleaching event may suggest it was caused by opportunistic pathogens after the coral was stressed by high water temperatures.

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