

Thriving cnidarian community on the volcanic coastline of Sakurajima Taisho Lava Field, southern Japan

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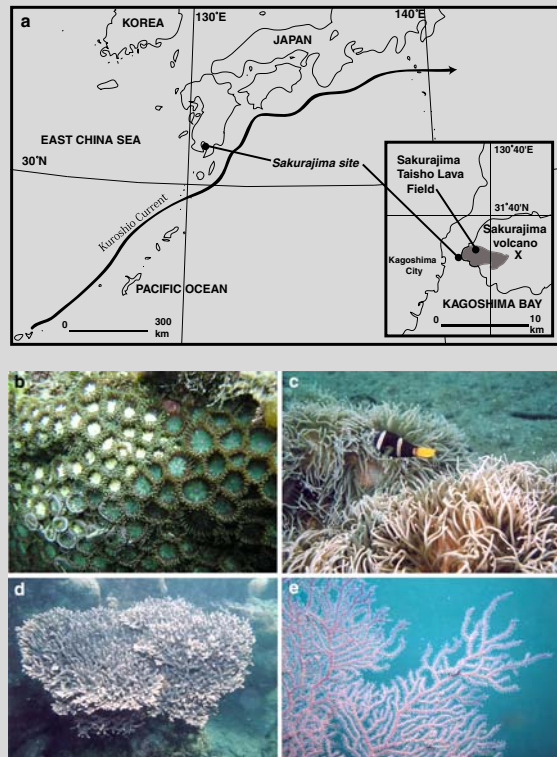


Fig. 1 **a** Location of Sakurajima Taisho Lava Field, **b** *Zoanthus sansibaricus* (depth= 2 m), **c** *Entacmaea actinostoloides* (3 m), **d** *Acropora* (2 m), and **e** hydrozoan (9 m)

The southwestern coastline of the volcano Sakurajima (31°35' N, 130°35' E) was created during a spectacular eruption in January 1913. The present cnidarian community is a unique mix of organisms from a variety of ecosystems. The site is located in a warm-temperate zone, and ocean temperatures range 15–30°C annually (Ono et al. 2003). The larvae of many cnidarians are brought from further south (the Nansei Islands and Ryukyu Islands) by the northward flowing Kuroshio Current (Fig. 1a). Because Sakurajima is located in Kagoshima Bay (Fig. 1a inset) many animals found in less exposed locations are also present. For example, antipatharians which are usually found in deeper waters (40–70 m) around Japan exist at depths of only 10 m at Sakurajima. This is believed to be a result of a strong upwelling current from depths of 200 m. The Taisho Lava Field is andesite and very porous, providing an ideal habitat for benthos that attach themselves to substrates.

Many colonial cnidarians are present at Sakurajima, in particular the zoanthids *Zoanthus sansibaricus* (Fig. 1b) and *Zoanthus vietnamensis* (Ono et al. 2003). Other common benthos include the bubble anemone *Entacmaea actinostoloides* (Fig. 1c), the soft coral genera *Nephthea*, *Stereonephthya*, *Dendronephthya*, and the hard coral genera *Acropora* (Fig. 1d), *Porites*, *Pavona*, *Favites*, *Favia*, *Goniopora*, *Montipora*, and *Hydnophora*, as well as hydrozoans (Fig. 1e). There have been large increases in both *Acropora* and *Zoanthus* spp. colony numbers and cover since the 1998 ENSO (Ono et al. 2003).

Sakurajima is part of Kirishima-Yaku National Park, and even though it is located only 4 km away from the center of Kagoshima City (population 600,000) (Fig. 1a) little human influence is evident.

Reference

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Reef sites

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