

# American Samoa's island of giants: massive *Porites* colonies at Ta'u island

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**Fig. 1** *Porites* colony in Ta'u, American Samoa

maximum straight-line length of 17 m and a roughly estimated minimum straight-line length of 12 m. It is 34 m × 20 m across the arc of live tissue, not including the base of skeleton upon which it rests. Unlike some other large *Porites* that have had anthropogenic damage (Soong et al. 1999), this colony appears quite healthy, with approximately 98% live tissue. There is however one, 1 m × 2 m persistent tumor on the colony.

The colony is composed of around 200 million polyps, assuming a smooth hemispherical surface and a polyp size of 1 mm<sup>2</sup>, and has a skeletal density of 1.4 g/cm<sup>3</sup> (~52% average porosity). Using the volume and density estimates, the skeleton was estimated to have a dryweight of approximately 129 metric tons. Based on published growth rates for massive *Porites* (Lough and Barnes 2000; Potts et al. 1985), the core skeletal density, and annual mean water temperature, this coral is estimated to be between 360 and 800 years old, though it may be considerably older. It is surrounded by several smaller colonies, which measure between 4 and 28 m in circumference. Approximately 1 km to the south of this site are another dozen massive *Porites* measuring 16–24 m in circumference as well as several this size on the northeast corner of the island, and a few others in the waters of nearby islands.

While these corals in Ta'u may not be as old as some deep water corals, they are among the oldest known on tropical hermatypic reefs. Their large size, good health, and close proximity to each other implies that this location has had conditions conducive to coral growth for a long time.

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# Reef sites

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