

Tubastraea aurea (Sun Coral)

Order: Scleractinia (Stony Corals)

Class: Anthozoa (Corals and Sea Anemones)

Phylum: Cnidaria (Corals, Sea Anemones and Jellyfish)



Fig. 1. Sun coral, *Tubastraea aurea*.

[<http://www.saltwatersmarts.com/specialized-care-key-to-success-with-sun-corals-tubastraea-6409/> downloaded 19 October 2016]

TRAITS. *Tubastraea aurea* can be described as a stony coral with large polyps on a central skeleton. The polyps branch off in many directions; although they form a hard skeleton, they are not reef-building (Saltwater Smarts, 2016). Polyps possess an orange-yellow coloration (Fig. 1), hence the name sun coral as it resembles the colour of the sun (Kaplan, 1982).

DISTRIBUTION. *Tubastraea aurea* is native to the Indo-Pacific region; Indonesia, Australia, Fiji and the Solomon Islands. It is often noted as being found in the Caribbean (e.g. Larson, 1987), although these records may refer to the orange cup coral *T. coccinea*, a known invasive species. The taxonomy of sun corals is not certain (Reefs, 2016), and it is not clear whether these two species are distinct, and if so whether both occur in the Caribbean.

HABITAT AND ECOLOGY. Sun corals can be found in a variety of reef habitats (Fig. 2), but are mostly found in shady areas regions such as crevices, caves, and under overhangs (Petcha, 2016). This is best suited for the species because unlike most corals, *Tubastraea aurea* is not photosynthetic, meaning they do not have a symbiotic (mutualistic) relationship with the marine algae known as zooanthellae. Instead, sun corals feed on tiny organisms and plankton and they also imbibe dissolved organic matter (Veron, 1993). The sun coral is generally nocturnal, but may also feed during the daytime.

REPRODUCTION. *Tubastraea aurea* can be described as hermaphrodites, which means that both male and female organs are located within one organism. Sun corals can reproduce both asexually and sexually. In sexual reproduction, the coral releases sperm and eggs simultaneously, producing a fertilized egg which then transform into a planula larva. The planula larva adheres to a substrate, develops into a coral. In asexual reproduction, the coral reproduces via a process known as budding (Calfo, 2007). Budding refers to a prominence that develops into a new individual polyp.

APPLIED BIOLOGY. *Tubastraea aurea* are not present on the IUCN Red List of endangered species. However, there are minor potential problems that can harm or disturb a sun coral. Light is one factor that does not damage or impair *T. aurea*, but the coral does not have a strong defence system against algae. Algae tend to reproduce rapidly in areas where light is in abundance, and if algae begins to attach and reproduce on the sun coral, the coral may eventually die.

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Fig. 2. Sun corals in abundance on a reef in the Pacific.

[<https://cdn.reefs.com/blog/wp-content/uploads/2015/05/ranlett01.jpg> downloaded 20 October 2016]

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