

Corals In The Northern Territory

What are corals?

Corals are marine animals that are related to sea anemones and jellyfish. Most corals are colonial, comprising many individual, sac-like 'polyps'. In hard (or scleractinian) corals - the most numerous and familiar corals - each polyp secretes a calcium carbonate skeleton.

The distinctive colours of corals come from millions of microscopic algae (zooxanthellae) which live symbiotically in the tissues of the coral polyps. Due to the dependence of zooxanthellae on sunlight, corals generally only occur in shallow, clear water. Corals vary from solitary corals (consisting of a single large coral polyp) and soft corals (without a hard skeleton), to hard, reef-building scleractinian corals.



S. Penny (NRETA)

Coral community at Casuarina Beach, Darwin.



N. Smit (NRETA)

Kelloway Reef, Bynoe Harbour.



S. Penny (NRETA)

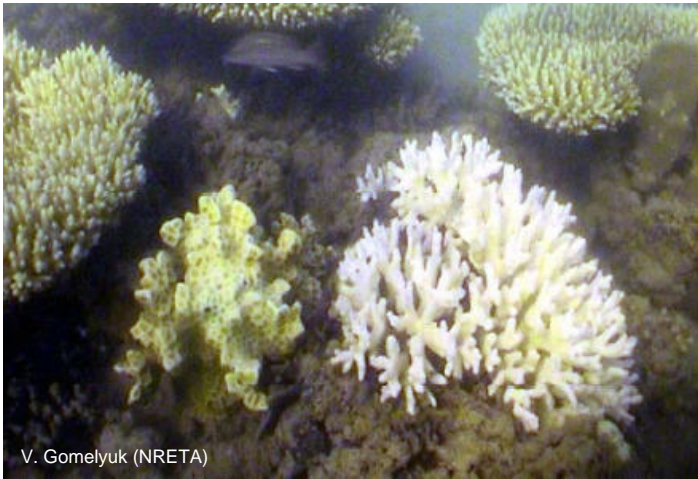
Individual coral polyps can be clearly seen in this *Turbinaria* sp. found off Casuarina Beach. Inset: A solitary mushroom coral (*Fungia* sp.). Photo courtesy of the Great Barrier Reef Marine Park Authority.

Significance of corals

Approximately 250 species of coral have been recorded along the NT coastline. However, these species rarely form large reef systems, due to the lack of clear water. Small coral reefs, dominated by branching 'staghorn' corals (from the Acroporidae family), have been recorded on the Cobourg Peninsula. Massive corals (mainly from the Faviidae family) are also common, particularly in Darwin Harbour, along the Arnhem coast, and in Popham Creek on Cobourg Peninsula.

Coral communities in the NT are diverse and in pristine condition, with some coral colonies reaching the maximum size for their species. Species composition is unique but similar to Torres Strait, with several commonly found species, recorded as rare elsewhere in Australia. The Arnhem coast is home to some species at the limits of their range from both eastern and western Australia, with two species previously unrecorded species from Australia.

Corals in the NT, as elsewhere, provide habitats for a wide range of reef life, including economically important fish species. Reef fishing is one of the most important recreational fishing activities in the NT. Coral reefs are also critically important in the domestic, cultural and spiritual life of coastal indigenous people.



V. Gomelyuk (NRETA)

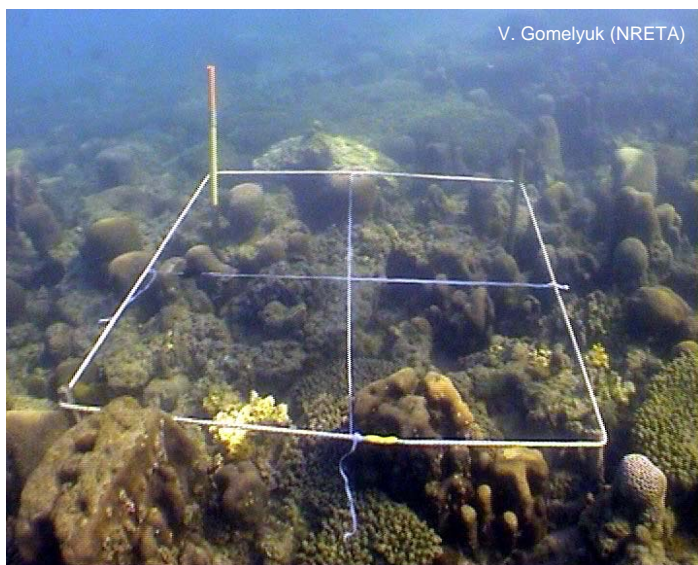
Bleached corals at Cobourg Peninsula.

Cyclones

Cyclones also have an impact on coral communities in the NT. For example, in March 2005 Cyclone Ingrid caused extensive damage to coral communities around the Gove Peninsula.

Human impacts

Human impacts on coral reefs in the NT is considered low at present. A commercial aquarium fishery, harvesting corals and other coral-associated plants and animals, currently operates in Darwin Harbour and Gove. The effect of this fishery has not yet been assessed but is thought to be small. Other potential human impacts to corals in the region include shipping and coastal development. The Arafura and Timor Seas are major shipping routes and corals can be affected by oil spills and groundings. Coastal development can affect coral communities through increased sediment and pollution entering the marine environment.



V. Gomelyuk (NRETA)

Monitoring coral cover at Cobourg Marine Park.

Status of corals

World-wide, coral reefs are threatened by natural and human impacts, with over one quarter of the world's coral reefs already lost. Pollution, coastal development and fishing have been identified as major causes. However, increasingly, climate change is posing a major global threat to shallow water corals, through increased coral *bleaching*, El Nino events and increased cyclonic activity. All scleractinian corals are listed as threatened by international trade, under the Convention on International Trade in Endangered Species (CITES).

In the NT, a damaging coral bleaching event was recorded at Cobourg Marine Park in November 2002 – resulting in the death of up to 90% of the corals recorded (mostly in the Acroporiidae Family). Coral bleaching occurs when corals experience extreme stress (such as high water temperatures) and expel their algae; appearing bleached. No evidence of recent or past bleaching has been recorded elsewhere in the NT.

Research & management of corals

Research on coral reefs in the NT is undertaken by a variety of agencies. Species in the Darwin region have been recorded by the Museum and Art Gallery of the NT, while a brief survey of coral communities along the eastern half of the Arnhem coast was conducted in 2003. Long-term monitoring sites have been established by the Marine Biodiversity Group (NRETA) in the Cobourg Marine Park and also Gove Peninsula to monitor coral health and the impacts of bleaching and cyclone damage. Apart from these activities, our knowledge of the nature, extent, status, and condition of coral communities around the NT is very poor.

Coral conservation efforts in the NT are just beginning. As such, approximately 10% of the coral communities in the Cobourg Marine Park will be zoned for conservation. Ongoing sustainable management and conservation of coral habitats will require broad-scale mapping, long-term monitoring programs and partnerships with local communities and sea ranger groups.

For more information contact the Marine Biodiversity Group.

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