Moreton Bay Marine Park

Our bay *Our* future

Moreton Bay Marine Park Zoning Plan review

Habitat information: Coral

Moreton Bay Marine Park is home to over 120 species of coral. The marine park sits at the meeting point of the tropical north and temperate south. This mixing zone gives Moreton Bay unique combinations of temperate and tropical coral species. Its waters provide varying habitats for corals with water temperature and water quality varying between inshore and offshore areas. The coral reefs play an important role in recreational, commercial and educational activities.

Coral is not only beautiful to look at, it also provides essential habitat for the marine community. It supports a wide variety of animals; many reef species live in symbiotic (where both parties benefit) relationships with the coral. Crustaceans, worms, molluscs and fish live on and in sponges, corals, sea urchins and ascidians.[1] As well as all the creatures that we see on the reef, there are many species that live in the sand and coral rubble, and thousands of zooplankton (microscopic species) that live in the water and on the reef.[2]

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In the marine park, most corals are found at depths of less than three metres. They are often patchy and interspersed among seagrass and sandy seafloor. Major habitats include:

- limestone reefs at Mud, Green, King and Bird islands;
- inshore rocky reefs at Sandgate, Woody Point, Scotts Point, Reef Point (Scarborough), Toorbul Point, Goat Island and a few rocky outcrops on the southern bay islands; and
- artificial reefs at Tangalooma Wrecks and Curtin artificial reef.

Coral species in the marine park

The coral reef communities change with distance from the mainland. The spread of coral and occurrence of species is evidence of a very steep water quality gradient – with poor water quality close inshore and improving rapidly further out into the bay.[3] Very hardy coral species occur in inshore communities where the water is warmer and more turbid or murky. There are approximately 40 species of coral within Moreton Bay with the 'massive coral' (*Favia speciosa*) dominating. In the clearer, cooler waters offshore, the fragile 'branching coral' (*Acropora*) is more common and the diversity of coral is higher; for example, at Flinders Reef, there are 119 species.

Where are the reefs?

The marine park's coral reefs are found adjacent to the mainland at Wellington Point and Cleveland. Fringing coral reefs grow around King, Green, St Helena, Mud, Peel, Goat, Coochiemudlo and Macleay islands. There is also a small natural reef off North Stradbroke Island at Myora. Established artificial reefs have grown at Tangalooma Wrecks, Amity Rock Wall and Curtin artificial reef off Moreton Island.

The marine park's prized reef diving spot, Flinders Reef, lies north of Moreton Island. Other reef dives for more experienced divers include Henderson's Rock, Cherubs Cave, Hutchison Shoal and Flat Rock.

Courtesy of Chris Roelfsema.

Queensland Government
Environmental Protection Agency

History

The marine park's coral community peaked about 6,000 years ago when the climate and sea levels were optimal for their growth. At this time, the reefs around Mud Island and along the mainland coast at Wellington and Cleveland points were actively growing and thriving. The main coral species were the branching *Acropora* corals, which are now only found at Myora and Flinders reefs.[4]

Impacts

Human activities in and around the marine park have various impacts on the coral communities.

Sediment, nutrients and other pollutants resulting from land-clearing and agricultural and industrial activities, flow into the marine park via most of south-east Queensland's waterways. High sedimentation can reduce coral larvae settlement and coral growth, and lead to death if prolonged.[5]

Coral relies on stable water quality, temperatures and sunshine. Being deprived of these elements can result in "coral bleaching", a sure sign that corals are becoming stressed. Coral bleaching has been observed within the marine park with 55 percent of corals bleached at Shag Rock and 35 percent of corals bleached at Flat Rock.[6]

Coral may also be damaged through anchoring or diving. Damaging the coral exposes it to attack from other marine organisms and can also upset the structure of the reef. The majority of divers and snorkellers cause little noticeable damage to corals but fins can cause damage.[7] Anchors also cause damage which can physically cause partial death of coral colonies.[8]

Protection

Coral communities are protected under the Moreton Bay Marine Park Zoning Plan through a system of protection zones, diving permits, collection restrictions and anchoring restrictions.

Under the current zoning plan the following restrictions help to protect the marine park's coral communities.

- Collecting coral is totally prohibited.
- Collecting other marine creatures may require a permit, depending on the species and quantity being taken.
- Commercial dive operations require a permit.
- Where there are no approved moorings, anchoring limits apply to prevent damage to seagrass, coral and bottom-dwelling animals and to manage pollution and vessel numbers.[9]

More information

For more information on the Moreton Bay Marine Park and the zoning plan review process, visit the EPA's website at **www.epa.qld.gov.au/moretonbay**. A number of information sheets are available on this website. You can also email us at moreton.bay@epa.qld.gov.au or freecall 1800 105 789.

1 Allen G.R. & Steene, R. (1994) *Indo-Pacific coral reef field guide*, Singapore

2 Salter, L. (2002) *South Stradbroke Island 2nd ed*, Brisbane

3 Healthy Waterways (2006) *Moreton Bay catchment*, Healthy Waterways, Brisbane, viewed 20 February 2007, <http://www.healthywaterways.org/moreton_bay_catchment.html>

4 Johnson, P.R. and Neil, D.T. (1997) *Corals in Brisbane's backyard: Scientific perspectives from Moreton Bay*, University of Queensland, Brisbane

5 Centre for Marine Studies (2003) *Moreton Bay corals*, University of Queensland, Brisbane

6 ibid.

7 EPA (2006) *Snorkelling and diving*, Environmental Protection Agency, viewed 20 February 2007, <http://www.epa.qld.gov.au/parks_and_forests/activities_in_parks_and_forests/reef_activities/snorkelling_and_diving/>

8 Centre for Marine Studies (2003) *Moreton Bay corals*, University of Queensland, Brisbane

9 EPA (2007) *Moreton Bay*, Environmental Protection Agency, Brisbane, viewed 20 February 2007, <http://www.epa.qld.gov.au/nature_conservation/habitats/wetlands/wetlands_habitats/moreton_bay/>

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