Australian Government
Great Barrier Reef
Marine Park Authority

Protecting the quality of water in the Great Barrier Reef Marine Park

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Maintaining good water quality in the Great Barrier Reef Marine Park is essential to ensure it remains one of the most beautiful, diverse and complex ecosystems in the world. Marine habitats, plants and animals rely on water with natural concentrations of nutrients (nitrogen and phosphorus) and sediments for their survival. Excessive amounts of sediments, nutrients, chemicals and other pollutants in the water can affect the delicate marine environment.

What causes water quality to decline?

Activities occurring in the Great Barrier Reef catchment are the primary source of pollution to the Marine Park.

The land, rivers and coastal regions adjacent to the Marine Park are known collectively as the Great Barrier Reef catchment. The catchment supports a variety of urban and rural land uses and activities including agricultural production, towns and resort-style developments, aquaculture, marine tourism infrastructure, ports and harbours, and industrial development. If these activities are not managed properly, increased sediment, nutrient, chemicals, rubbish and other pollutants may wash into adjacent waterways. As these waterways are often 'connected' to the sea, any

pollutants in the water will eventually flow out into the Marine Park.

How are habitats affected?

Declining water quality affects the habitats of the Marine Park in a number of different ways.

- Nutrients encourage growth of small algae known as phytoplankton and this leads to decreased water clarity and reduced light.
- Phytoplankton growth encourages filter-feeding organisms such as sponges, tubeworms and barnacles to grow and compete for space with the existing coral community.
- Nutrients encourage algal growth that can cover coral communities.
- Excessive phosphorus weakens the coral skeleton, making it vulnerable to storm damage.
- Sediment reduces the amount of light that is available for photosynthesis, smothers corals and seagrass and disrupts recruitment of coral larvae.

What is being done to improve water quality?

Improved management of land uses and activities is essential for the health of the Marine Park.

The Queensland and Australian Governments are working with local government, industry and the community to improve the water quality entering the Marine Park through the *Reef Water Quality Protection Plan* (Reef Plan).

The Reef Plan aims to "halt and

reverse the decline in water quality entering the Reef within ten years" by reducing pollutants that are entering the Marine Park and rehabilitating and conserving areas of the catchment to remove water-borne pollutants.

The Reef Plan includes a range of strategies to meet this objective:

- Building and maintaining partnerships with stakeholders
- Developing water quality objectives through local and regional planning processes, including wetland protection
- Promoting property-level planning for agriculture to deliver better water quality and natural resource management outcomes
- Broadly identifying risk based on pollutant loads, catchments and land use, and priorities for action
- Monitoring and reporting progress.

What is being done to protect wetlands?

Wetlands are vital to the health of the Marine Park because they filter and absorb pollutants to purify the water before it flows out into the Marine Park and provide habitat and nurseries for many different species.

Wetlands in Queensland are being protected through the Queensland Wetlands Programme, a Queensland and Australian Government initiative. The umbrella programme, which encompasses the Great Barrier Reef Coastal Wetlands Protection Programme and Queensland Natural Heritage Trust Wetlands Programme, aims to identify, protect and rehabilitate wetlands.

The Great Barrier Reef Coastal Wetlands Protection Programme was set up under the Reef Plan, and focuses on rehabilitating and protecting wetlands within the Great Barrier Reef catchment.

What can I do to improve water quality?

Get involved in helping protect the Marine Park.

Whether you live in a major city, small town or in the country, what you do on the land, at home, work or school may affect the quality of water entering the Marine Park. Some daily activities can lead to increasing levels of nutrients, sediments and other pollutants discharged into the Marine Park.

What goes into drains, creeks and rivers may end up in the ocean.

You can help by keeping drains and gutters free of chemicals. Only use chemicals according to the manufacturer's instructions and dispose of unused chemicals through recycling programmes.

Remember to also maintain high levels of ground cover during the wet season, apply only the recommended amount of fertiliser to your crops, compost and use garden beds or vegetation strips around your home and farm especially along gullies, streams and wetlands to absorb and filter water, dispose of all litter and rubbish appropriately, recycle, and use water wisely (for example, wash your car on the lawn).

You can also raise awareness by spreading the word about the affects of declining water quality to others and actively participating in local community groups involved in coastal and ocean protection like Waterwatch, Seagrass Watch, Landcare or Coastcare.

For more information

Reef Water Quality Protection Plan: www.deh.gov.au/coasts/pollution/reef/index.html

Queensland Wetlands Programme: www.deh.gov.au/water/wetlands/qwp/index.html

Water quality: www.gbrmpa.gov.au/corp_site/key_issues/water_quality/index.html

For Further Information

Visit the Great Barrier Reef Marine Park Authority's website: www.gbrmpa.gov.au

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