

**Great Barrier Reef Marine Park Authority Submission to the
Senate Environment, Communications, Information Technology and Arts
References Committee inquiry into:
The regulation, control and management of invasive species and the
Environment Protection and Biodiversity Conservation Amendment
(Invasive Species) Bill 2002**

The Great Barrier Reef Marine Park Authority is concerned about the risk of introduction of invasive marine species in the Great Barrier Reef Marine Park.

Importance of the Great Barrier Reef

The Great Barrier Reef World Heritage Area comprises an extraordinary biological diversity and provides habitats for many diverse forms of marine life and species, including:

- six of the world's seven species of marine turtle and the largest green turtle breeding area in the world
- one of the world's most important dugong populations and an important breeding area for humpback and other whale species
- Over 2900 coral reefs built from 359 species of hard coral, and over one third of all the world's soft coral and sea pen species (80 species)
- over 2000 km² of mangroves including 54% of the world's mangrove diversity
- 1500 species of sponges equalling 30% of Australia's diversity in sponges, and more than 1500 species of fish
- 800 species (or 13% of the world's total species) of echinoderms (e.g. sea stars), and over 5000 species of molluscs
- over 3000 km² of seagrass meadows that are important feeding grounds for turtle and for dugong.

The exceptional biodiversity and interconnectedness of species and habitats makes the Great Barrier Reef and the surrounding areas one of the richest and most complex natural systems on earth. While coral reef, mangrove and seagrass habitats occur elsewhere on the planet, no other World Heritage Area contains such biodiversity. As the world's largest coral reef ecosystem, it is also a critical global resource.

Australia, as a signatory to the World Heritage Convention, has an international responsibility to protect the world heritage values of this extraordinary area.

The range of economic and social activities, including tourism, fisheries, aquaculture, scientific research, recreational, traditional and other cultural pursuits that occur within the Marine Park, or affect it, are of significance to the environmental, social, and economic well being of Australia and Queensland. The gross value of production of tourism in the Great Barrier

Reef catchment area alone, amounted to over A\$4,228 million in 2001 (P.D.P Australia report, 2003).

Over three quarters of Australians consider that the Great Barrier Reef is under threat (AEC group, 2003). Whilst other activities have the potential to degrade the Great Barrier Reef, the introduction of invasive marine species is likely to cause impacts within a short period of time that have long lasting environmental, social and economic effects.

Risk of Introducing Invasive Marine Species into the Great Barrier Reef

Invasive marine species¹ pose a risk to the Great Barrier Reef in terms of diminished amenity, ecological and economic values. Introduced species that have already been observed in this region are the Golden noodle algae *Chrysoecystis sp.*; the Asian green mussel *Perna viridis* in Cairns and Innisfail; and the Caribbean tube worm *Hyroides sanctaerucis* in Cairns harbour. There is also a high risk that the black striped mussel *Mytilopsis sp.* that was found in Darwin harbour in 1999 and soft coral *Carijoa riisei* that has invaded coral beds in Hawaii could spread throughout the Marine Park and become established in dense populations. Once established, these species can out-compete, overgrow and kill flora and fauna native to the Great Barrier Reef ecosystem. It is also likely that other animals and plants have been introduced into the Marine Park but there is a lack of monitoring and baseline data to confirm this.

Although port surveys for invasive marine species have been undertaken by researchers from CSIRO, CRC and CRC Reef in many ports along the Queensland coast, the risk of an introduced species spreading into the reefal and inter-reefal areas of the Marine Park and the potential consequences are largely unknown.

Future trends

Every year about 2000 ships (vessels greater than 50 metres) undertake more than 7,000 voyages through the inner route of the Great Barrier Reef Marine Park. In 2002-03, about 500 international yachts visiting Australia arrived in Queensland ports. Apprehended, illegal and derelict vessels are also towed into ports in tropical Australia. These vessels can unintentionally introduce exotic plants and animals into new environments through excessive hull fouling or ballast water exchange. The risk of an introduction from other potential vectors including private aquaria or mariculture is unknown.

¹ Refers to all harmful aquatic organisms that threaten human health, economic or environmental values.

During the past 5 years, there has not been a significant increase in the number of ships transiting the Great Barrier Reef. However, there is a national and international trend toward larger ships with larger ballast tanks and larger surfaces that carry more fouling organisms. In addition, some of the larger super-yachts are now being fitted with ballast tanks which could exchange or release ballast containing exotic species within the waters of the Great Barrier Reef Marine Park.

Potential Management Measures

Currently, there are no regulatory controls under the *Great Barrier Reef Marine Park Act 1975* or the *Great Barrier Reef Marine Park Regulations 1983* to deal with the introduction of an invasive marine species. However, the Great Barrier Reef Marine Park Authority is an Observer to the National Introduced Marine Pest Coordination Group (NIMPCG) charged with the development of a comprehensive 'National System for the Prevention and Management of Introduced Marine Pest Incursions'. It is also a contributor to the various Working Groups established by NIMPCG.

Specific policy options for the prevention, regulation and control of invasive marine species should be determined through NIMPCG processes, the Coordinating Committee for Introduced Marine Pest Emergencies (CCIMPE) and associated working groups. Management initiatives should be focussed on minimising the risk of introducing invasive marine species into the Marine Park and reducing the numbers and spread of those species that have already established adjacent to the Park.

The Great Barrier Reef Marine Park Authority will be encouraging research to identify invasive marine species posing the greatest threat to the Great Barrier Reef ecosystem as well as research that helps to understand and ameliorate their impacts on the ecology and amenity of the Marine Park as funding priorities allow.

The Great Barrier Reef Marine Park Authority will be taking an active interest in the development of the *National System for the Prevention and Management of Introduced Marine Pest Incursions* particularly in regard to: exercising of emergency response and control plans at the national level and for the State of Queensland; research and development; community preparedness; education and training; hull fouling protocols for recreational and commercial vessels; statutory and administrative arrangements available under the *Environment Protection and Biodiversity Conservation (EPBC Act) 1999*; and the regulation of ballast water exchange in the Marine Park.

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Acting Chair
13/4/04