Australian Government
Great Barrier Reef
Marine Park Authority

Barriers to Effective Climate Change Adaptation Productivity
Commission
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Dear Commissioners

The Great Barrier Reef Marine Park Authority presents below its submission on the *Barriers to Effective Climate Change Adaptation* draft report (April 2012).

General comments

The Great Barrier Reef Marine Park Authority (GBRMPA) welcomes the Commission's interest in barriers to climate change adaptation and the analysis and knowledge sharing opportunities the public inquiry brings. The draft Report presents a useful summary of many key regulatory and policy barriers to adaptation within Australia.

Management of complex areas such as the Great Barrier Reef requires consideration of tightly linked socio-economic and ecological systems. The GBRMPA is pleased to note that both adaptation of human communities and of species and ecosystems has been recognised in the draft report. However, the report could further emphasise the reliance of many industries and communities on ecosystems that are particularly vulnerable to climate change (such as the Great Barrier Reef), and note the additional incentive and urgency this brings for addressing barriers that stand in the way of building adaptive capacity and working towards strong impact preparedness, prevention, response and recovery.

Additional comments are presented with reference to relevant chapters within the draft Report.

Information provision

- The GBRMPA works to ensure adaptation research is aligned with its needs for managing the Great Barrier Reef through involvement in Australian Government funding initiatives such as the National Environmental Research Program and the provision of its *Scientific Information Needs 2009-2014* as a guidance document for researchers. Responsibility for ensuring stakeholder consultation and collaboration does not rest solely with researchers or funding structures, end users themselves have an important role to play in making their needs clear. (Aligning research with user needs, p 101)

- The GBRMPA could be added to the list of bodies that undertake adaptation research (p 99), given recent work in relation to policy and adaptation frameworks.

- Recognition within the draft Report of the important role the GBRMPA plays in garnering and dissemination of information relating to climate change implications and adaptation for the Great Barrier Reef is noted (p 248). The GBRMPA has been working in partnership with

the tourism industry on a range of initiatives under the *Great Barrier Reef Climate Change Action Plan 2007-2012* and the *Great Barrier Reef Tourism Climate Change Action Strategy 2009-2012*. While recognising the difference between public and private good, we have been working together successfully on climate change information dissemination and adaptation thinking for several years now, with benefits for both the resilience of the Great Barrier Reef and of the tourism industry. Interest from tourism operators in considering climate change implications for the Great Barrier Reef and relevant adaptations actions for their industry has been steadily growing over the last five years. Similar work has also been underway with several sectors of the commercial fishing industry.

- Downscaled climate information may be critical in building climate change into adaptive management and planning for environmental protected areas like the Great Barrier Reef. Particularly when the environmental asset in question extends over multiple regions. For example, access to downscaled information could be extremely valuable when exploring geographic overlays of current and projected climate hazards, ecosystem resilience, likely flow on effects for linked human communities, and what this may mean for effective and sustainable management of the asset and adaptation of asset users. In such cases, there could be a strong case for government funding of downscaled climate information (p 103).

Local government

- Areas of national environmental significance adjacent to local governments bring additional complexities to considerations of land use planning effects on adaptation options (e.g. decisions around protection, alteration or abandonment of local environmental assets, p 122). The Great Barrier Reef achieved World Heritage status in 1981 and has recently been declared a National Landscape. The health and resilience of this ecosystem, and those who depend upon it, can be significantly influenced by planning decisions in adjacent coastal land areas.

  The GBRMPA's *Great Barrier Reef Outlook Report 2009* (the Outlook Report) and its associated, but independent, *Assessment of management effectiveness for the Great Barrier Reef Outlook Report* (Hockings and Gilligan 2009) highlighted the diminished capacity of local government in particular to address many of the complex management issues around the interactions between coastal development, climate change adaptation and maintaining the values of important natural assets like the Great Barrier Reef.

  Coastal development and its impacts on coastal ecosystems are identified in the Outlook Report as an ongoing factor affecting the long-term health and resilience of the Great Barrier Reef ecosystem. Given local government planning schemes provide the basis for many land use and management decisions the role of local councils is significant (13 local councils have jurisdictions that directly abut the Great Barrier Reef's coast) in attaining good environmental outcomes for the Reef. This increases the importance of councils having access to appropriate skills and capacity for building climate change adaptation into planning decisions. It also increases the responsibility of other levels of government to become involved where local adaptation actions may have negative impacts on significant adjacent ecosystems and/or result in barriers to their adaptation. For this and other reasons the GBRMPA established its Reef Guardian Council program in 2007 to work with councils in developing principles around the management of issues like water quality and climate change and in implementing action plans to undertake adaptation activities at a local level.

- The GBRMPA is also working with state and local governments to consider the implications of climate change impacts on coastal ecosystems and the implications for their adaptation in light of existing human development on the coast, e.g., identifying potential migration pathways for estuarine ecosystems affected by sea level rise. The GBRMPA has already commissioned some work to incorporate climate change stressors affecting freshwater, estuarine and marine wetlands into information and management systems for wetlands so that it is accessible to planners and managers.

Planning and building regulation

- The GBRMPA is pleased to see that allowance of inland movement of habitats such as salt marshes is recognised as a possible benefit of managed retreat of human settlements (p 164). Recent work by both the GBRMPA and the Queensland Wetlands Program has highlighted the human modification of these estuarine ecosystems and the implications for not only their present environmental health and ecological functions but for their capacity to adapt to future climate change pressures (*Inventory of Instream Structures Impacting on Ramsar Wetlands*, available at http://wetlandinfo.derm.qld.gov.au/resources/static/pdf/instream-structures/qwp-ramsar-inventory-report-final.pdf). It is also critical we recognise the role estuarine systems play in sequestering carbon, and how our past actions may be affecting current sequestration capacity and the potential of these systems as future carbon sinks.

- The GBRMPA supports draft recommendation 8.1 (p 152), noting particularly that the point about considering costs and benefits of different types of land use should incorporate that this covers not only effects on the land area in question, but also on important adjacent areas with significant connectivity to the land in question (e.g. marine areas like the Great Barrier Reef).

Environmental and health services

- The GBRMPA supports the statements made in Key Points 1 to 4 (p 209). Relevant to Key Point 4 is the potential value of flexible and adaptive environmental management in removing barriers and facilitating adaptation of industries reliant on protected natural areas in order to achieve the best ecosystem outcomes possible under a changing climate. Critical considerations include:
    - Determining where to add flexibility and how to do so without significantly endangering highly valuable natural and cultural assets.
    - Ensuring allowance is made for the ongoing adaptation of species and habitats themselves: through minimising current barriers and avoiding production of new ones. (In both protected and adjacent areas).

- Appreciating that the Great Barrier Reef is mentioned several times within the draft Report, the GBRMPA would support additional reference to Australia's marine areas and associated stakeholders generally.

- The *Great Barrier Reef Climate Change Action Plan 2007-2012* (GBRMPA 2007) reflects recognition by the GBRMPA that consideration of climate change is going to be a very important part of managing the Great Barrier Reef into the future. The Action Plan and its successor (the *Great Barrier Reef Adaptation Strategy and Action Plan 2012-2017*)), which

will be released later this year, provide impetus around considering a changing climate in management frameworks aimed at reducing pressures on Great Barrier Reef ecosystems. Going forwards, for management regimes to be effective they will need to adequately consider barriers to both adaptation of species and habitats and linked human socio-economic systems.

- Regarding local government decisions around coastal land (p 215), the GBRMPA reiterates the importance of assessing effects on the health and adaptive capacity of adjacent, connected ecosystems and not just those occurring at the location under direct consideration. The GBRMPA is particularly concerned with potential impacts of land-based decisions on adaptation options for various Great Barrier Reef habitats and species. For example,

    - Mangroves and saltmarshes (estuarine ecosystems) are ecologically important ecosystems that provide a critical link between marine and terrestrial environments. They provide habitats for both marine and terrestrial organisms, including several threatened species such as the freshwater sawfish and the speartooth shark. Estuaries are vital to the biological productivity of coastal waters and provide connectivity and migration pathways between the land and the sea. Around 78 species of marine fish found in the Great Barrier Reef World Heritage Area spend part of their life in estuarine or freshwater environments.
    - The Great Barrier Reef World Heritage Area is also directly adjacent to, and connected with, two Ramsar listed Wetlands of International Importance (Bowling Green Bay and Shoalwater Bay Ramsar Wetlands). The connectivity and thus climate change adaptation capacity of these wetlands has been severely affected by past human activities (see http://wetlandinfo.derm.qld.gov.au/wetlands/ScienceAndResearch/Reports.html).

- Complex jurisdictional issues like climate change, water quality and coastal management can only be successfully addressed through coordinated whole of government, multi-tier, responses. Within the last decade's management of the Great Barrier Reef and its catchment this is demonstrated by across government initiatives such as the *Reef Water Quality Protection Plan* and the Reef Rescue Initiative. Having processes in place for these cross jurisdictional issues was recognised as critical by the House of Representatives Standing Committee on Climate Change, Water, Environment and the Arts in their 2009 report *Managing Our Coastal Zone in a Changing Climate.* Their report assessed the importance of effective governance of these issues and the programs and processes that are needed, and recommended that the arrangements in the Great Barrier Reef and its catchment be investigated as a case study for improved integrated coastal management around Australia.

- It can be relatively difficult to identify carbon offset generating projects with local area environmental benefits. This is a barrier to the uptake of offset purchasing by tourism operators as part of adaptation strategies based on promoting a business's 'green credentials'. Reef-based tourism operators have indicated they cannot easily see the benefit of carbon offset arrangements that do not provide direct benefits to the Great Barrier Reef (the resource that they rely on). From their point of view policy reform needs to ensure benefits flow back directly to them.

  (Some operators have also highlighted that a number of local government areas adjacent to the Great Barrier Reef have below standard recycling programs in place, which has

affected the ability of some operators to recycle to a level that is acceptable under ECO Certification).

- Johnson and Marshall (2007) *Climate Change and the Great Barrier Reef: A Vulnerability Assessment* could usefully be added to the list of significant vulnerability assessments commissioned by the Australian Government (p 215, third bullet point).

The role of insurance

- Feedback to the GBRMPA from tourism operators working within the Great Barrier Reef has highlighted that obtaining insurance for infrastructure such as moorings, pontoons and islands in cyclone affected areas is proving extremely difficult. Also brought up was that insurance for solar and wind technology has been held back due to insurers not having confidence in the products and not providing insurance in cyclone impacted areas. The issue of insurance or lack of insurance makes it difficult for tourism operators to action business adaptation options such as installing new energy efficient technologies or making infrastructure upgrades to reduce their environmental footprint.

Recommended corrections

The GBRMPA reference given within 'Sources' at the bottom of the text box on page 96 needs adjustment. Relevant references are GBRMPA 2007, 2009:

- Johnson JE and Marshall PA (editors) (2007) **Climate Change and the Great Barrier Reef: A Vulnerability Assessment**. Great Barrier Marine Park Authority and Australian Greenhouse Office, Australia.
  (available at http://www.gbrmpa.gov.au/outlook-for-the-reef/climate-change/how-climate-change-can-affect-the-reef/great-barrier-reef-vulnerability-assessment)
- Great Barrier Marine Park Authority (2009) **Great Barrier Reef Outlook Report 2009**. Great Barrier Marine Park Authority.
  (available at http://www.gbrmpa.gov.au/__data/assets/pdf_file/0018/3843/OutlookReport_Full.pdf)
- Great Barrier Marine Park Authority (2012) - this web reference, which appears in the Report's reference list, can be replaced by the GBRMPA 2009 reference above.
- An additional reference that may be of use for this text box is: Great Barrier Reef Marine Park Authority (2007) **Great Barrier Reef Climate Change Action Plan 2007 – 2011** Great Barrier Marine Park Authority.
  (available at http://www.gbrmpa.gov.au/__data/assets/pdf_file/0020/4493/climate-change-action-plan-2007-2012.pdf) *[this reference already appears in the Report's reference list but is not used within the box on page 96]*

Insert the additional reference GBRMPA 2009 (as above) into the reference at the end of the sentence at the top of page 212.

Further comments

Additional context and clarity could be provided around the following statement on page 249, *'The Commission does not see any specific role for the Department of Climate Change and Energy Efficiency in climate change adaptation'*. It could be helpful to make the reasoning that lead to this

statement more explicit in the text. Also, does the statement apply specifically to a role in coordinating national policy (referencing the subheading) or does it apply more broadly (as might be inferred from the wording)?

The preparedness, risk management and self-responsibility focus of initiatives such as Build It Back Green (http://builditbackgreen.org/bushfires.aspx) and Harden Up (http://hardenup.org/), may provide useful examples within the Planning and Building Regulation and Emergency Management chapters respectively.

Yours sincerely

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Chairman