

SUBMISSION TO THE SENATE STANDING COMMITTEE ON ENVIRONMENT AND COMMUNICATIONS REFERENCES COMMITTEE: INQUIRY INTO THE MANAGEMENT OF THE GREAT BARRIER REEF

Thank you for the invitation to provide a submission to the committee regarding the inquiry into the management of the Great Barrier Reef (GBR).

1. **Personal background:** I am a full-time international PhD student at James Cook University. I also currently work part-time for the Commonwealth Scientific and Industrial Research Organisation (CSIRO) on a research project that monitors social and economic attributes associated with the Great Barrier Reef (GBR). Previously, I was employed by the Great Barrier Reef Marine Park Authority (GBRMPA), the Australian Institute of Marine Science, the Global Coral Reef Monitoring Network and James Cook University (JCU). I also have considerable experience volunteering with Reef Check Australia and the Earthwatch Institute.
2. **People and the GBR:** Long recognised as one of the most iconic and globally significant ecosystems on the planet, the GBR contributes substantially to the Australian culture, society, and economy. Unfortunately, coral reefs are predicted to undergo drastic changes in coming decades, projections of coral reef ecosystem status are grim and the outlook for the GBR is poor. Consequently, resource managers and coral reef scientists have spent considerable time and energy trying to understand and enhance the health of the GBR. However, despite an abundance of ecological and economic data associated with the GBR, comparably little is known about what Australians think about the GBR, how connected they are to it, and what attitudes they hold in regard to its management and future. The social and ecological components of the GBR are inseparable yet there has been a considerable lack of attention given to the contextual forces that shape the direct drivers of change along the GBR. Understanding how these components interact may contribute to strategic interventions that can halt, reverse, or change a negative impact. Clarifying the role that the GBR plays in our collective social consciousness provides a context in which to embed decision-making processes associated with coastal development, resource management and policy-making.
3. **Recent relevant research:** The CSIRO, in partnership with JCU and in consultation with the GBRMPA, recently completed a nationally representative online survey of 2,002 Australians. This study sought to clarify Australian perceptions and opinions relevant to resource management along the GBR.
4. **Key findings:** Empirical findings from the first nationally representative survey to explore Australian attitudes about the GBR indicate that the GBR inspires Australians, promotes pride, and instills a sense of individual identity and collective responsibility. These results may provide powerful and symbolic levers to enhance public support for policies and behaviours that conserve GBR values.
 - a. The GBR is an important destination for Australian residents and an extremely large proportion of survey respondents (93%) aspired to visit (49%) or have already visited (44%) the GBR.
 - b. Respondents were strongly inspired by the GBR, with 43% of respondents listing the GBR as the most inspiring Australian icon, more than five times as many as the second most inspiring icon, Uluru (8%), on the list. Additionally, 71% of respondents included the GBR in their list of the top three most inspiring national icons and 88% believed the GBR to be inspiring.

- c. Respondents were concerned about the GBR, and they were also very connected to it. A considerable proportion of Australians were proud the GBR is a World Heritage Area (86%), agreed that it is the responsibility of all Australians to protect it (80%) and believed the GBR to be part of their identity as Australians (77%). These strong majorities appear to underpin a widely recognised social norm in which the GBR is a significant component of the Australian psyche. Most respondents would be personally affected if the health of the GBR declined (62%), believe it is their individual responsibility to protect the GBR (61%), and were concerned about the impacts of climate change on the GBR (77%). Just 53% of respondents were confident the GBR is well managed and only a slight majority (55%) were optimistic about its future.
 - d. Respondents believed that climate change is the biggest threat to the GBR, with scores being strongly skewed toward a more extreme threat: 15% of respondents gave climate change a score from 1-5 yet 77% chose a score from 6-10 (a score of '1' is not at all threatening while a '10' is extremely threatening). Just 3% of respondents believed that climate change is not a threat to the GBR while 31% ranked climate change with the highest score of '10' (extremely threatening). Overall, 89% of respondents believed that climate change is a threat to the GBR. These beliefs are congruent with the widely recognised scientific opinion that climate change is the biggest long-term threat to coral reefs around the world, including the GBR¹⁻⁵.
5. **Conclusions:** The iconic status and precarious future of the GBR appears to deeply affect a strong majority of the Australian population. Our research suggests that the GBR is one of Australia's most inspiring, most visited, and most personally significant national icons. It is also among the most threatened, and respondents overwhelmingly recognised the diverse and severe threats to the GBR, particularly climate change, which was recognised as the most severe threat. The GBRMPA also accepts climate change as the most severe long-term threat to the GBR¹. This alignment of public opinion with scientific consensus offers an additional potential synergy for enhancing public engagement via targeted communication and engagement strategies. Although these results do not directly assess public support for management and legislation, they may indicate that Australians will consider supporting stronger policies for the GBR, particularly those that are framed with a collective focus on enhancing the integrity of World Heritage status.

- 1 GBRMPA. Great Barrier Reef outlook report 2009. (Great Barrier Reef Marine Park Authority., Townsville, Australia., 2009).
- 2 GBRMPA. Great Barrier Reef Climate Change Action Plan 2007 – 2011. 14 (Great Barrier Reef Marine Park Authority, Townsville, Australia, 2007).
- 3 Anthony, K. R. N. *et al.* Ocean acidification and warming will lower coral reef resilience. *Global Change Biol* **17**, 1798-1808, doi:DOI 10.1111/j.1365-2486.2010.02364.x (2011).
- 4 Goldberg, J. & Wilkinson, C. in *Status of coral reefs of the world: 2004* Vol. 1 (ed C. Wilkinson) 67–92 (Australian Institute of Marine Science, 2004).
- 5 Hoegh-Guldberg, O. Climate change, coral bleaching and the future of the world's coral reefs. *Mar Freshwater Res* **50**, 839-866 (1999).