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Draft Policy on Great Barrier Reef Interventions  
Great Barrier Reef Marine Park Authority  
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**Submission to Public consultation on the  
Draft Great Barrier Reef Interventions Policy**

We thank you for the opportunity to make a submission to the Draft Great Barrier Reef Interventions Policy.

The Australian Marine Sciences Association (AMSA) Inc. represents marine scientists from academia, industry and government and engages in public policy discussion where we have specialist knowledge. Founded in 1963, AMSA is Australia's peak professional body for marine science representing 700 professional practitioners from all Australian states and territories.

The Australian Marine Sciences Association (AMSA) is generally supportive of the recent draft policy on Great Barrier Reef interventions, which implicitly recognises the need to reverse sustained and ongoing degradation of coral reef habitats (and other coastal habitats) within the Great Barrier Reef Marine Park (GBRMP) and

Great Barrier Reef World Heritage Area (GBRWHA), which is well documented (Osborne et al. 2011; De'ath et al 2012; Ortiz et al. 2018; Mellin et al. 2019). Established management practises (including Marine Park zoning) remain foundational to conserving ecological, economic and social values of the GBRMP and GBRWHA (Fernandes et al. 2005), but are in and of themselves insufficient to protect against escalating human pressures and especially human-induced climate change (Jones et al. 2004; Hughes et al. 2015; Emslie et al. 2015). Effective conservation of the Great Barrier Reef, and coral reefs globally, requires fundamental changes in the structure, scale and approach of governance and management frameworks (Hughes et al. 2015; Bellwood et al. 2019). This policy will allow for trialling and implementation of novel and unprecedented management interventions, which add to already established direct actions (e.g., extensive culling of coral-feeding crown-of-thorns starfish; Pratchett and Cumming 2019) that may have definite conservation benefits.

The current draft Policy rightfully recognises (point 5) that *“Mitigating human-induced climate change through effective emissions reduction and decarbonising the global economy remains the most urgent and critical need for the Great Barrier Reef’s future, irrespective of the success or otherwise of restoration and adaptation interventions being considered for the Reef.”* To deliver on this critical and central tenet for the endorsement of restoration and adaptation activities, we’d argue that all proponents of such activities must themselves demonstrate a commitment to reducing carbon emissions, and also explicitly state the perceived benefits of their activities in the context of projected environmental and habitat conditions.

AMSA also strongly supports the policy’s intent to adaptively manage restoration and adaptation interventions using a risk-based approach (point 12). We acknowledge that direct restoration and adaptation interventions(s) are likely to be inherently constrained in their scale and associated risks (Doropoulos et al. 2019), but we do encourage the GBRMP to consider more carefully the potential for restoration and adaptation activities to adversely affect the current status or vulnerability of coral reef organisms, communities and environments. In particular,

we suggest that all proponents of restoration and adaptation interventions(s) must provide comprehensive and rigorous research data to demonstrate the need for intervention and evidence of benefit, commensurate with the scale and risk of proposed activities, following Fidelmen et al. (2019). The draft policy on Great Barrier Reef interventions suggest that consideration will be given to “*Whether intervention is needed at the proposed location(s) or natural processes are likely to be sufficient*” (Page 2), but it is not clear how such judgements will be made, especially given the currently lack of process-orientated monitoring across the GBRMP. It is unreasonable to expect that current monitoring and research programs will provide sufficient or specific data to reliably assess the need, risk and benefit across a diverse range of different interventions proposed (Mellin et al. 2020). Critically, the current draft plan does not give sufficient consideration to the inherent value of natural biodiversity, such that any interventions that reduce the diversity of species or phenotypes (and thereby potentially undermine natural response diversity and adaptation) should also be considered “high risk”. We therefore recommend that the precautionary principle be explicitly incorporated into decisions in which insufficient evidence, particularly peer-reviewed studies, are available.

It is anticipated that most interventions will require the introduction of manufactured materials and artificial structures, either temporally or permanently (e.g., Yanovski and Abelson 2019; Boström-Einarsson et al. 2020). All such materials and structures must be subject to careful management and maintenance plans, including a firm commitments by proponents to maintain completely remove all artificial materials, regardless of their capacity to degrade and decompose at the end of the project or whenever the installations are damaged or ineffective (e.g., in the aftermath of severe tropical storms). Wherever possible, permanent fixtures and installations should be constructed from natural materials, minimising the use of plastics and metal. Importantly, any installations that compound on reef degradation to undermine the natural aesthetics of reef environments (e.g., appearance of man-made structures in the aftermath of mass coral bleaching or cyclone impacts) will significantly undermine public support and social licence given to restoration activities.

Social license and the support of stakeholders is an important determinant of success in conservation interventions and regulations (Hein et al. 2019). Whilst community consultation and engagement is described in the proposal, the extent of social research that will be required prior to a decision is unclear. The GBR is ultimately a social-ecological system in which human activities both impact on, and depend on, the system. We therefore recommend explicit requirements be incorporated to conduct social research encompassing all key stakeholder groups as part of the decision process. Such research should consider social-ecological relationships, values and perceptions and should inform risk/reward matrices, prioritisation of alternatives and implementation activities.

Above all we request that persons tasked with assessment and implementation of this policy carefully consider the viability and conservation benefit of proposed activities relevant to i) the scale of relevant threats as well as the ii) the current condition, trends, and extent of potentially affected habitats. Most interventions would be expected to be trialled in relative circumscribed and discrete habitats, ideally in areas that are already severely impacted by relevant pressures or disturbances. This latter point would be especially important when considering approvals for activities in preservation zones (point 36c). The capacity and viability of scaling-up such interventions should however also be considered, with proponents tasked with responsibility for demonstrating such capacity, as well outlining relevant plans and activities that will support the increasing scale of such activities, while also managing associated risk. AMSA supports the commitment to transparency of process in the current policy, but would suggest more explicit wording about the use of independent advice, especially in relation to high risk proposals.

In conclusion, AMSA supports and encourages the development and implementation of a policy that will permit and guide intervention and adaptation activities on the GBR. However, this policy must:

- i) Ensure that investment and actions to restore natural populations, communities or habitats do not detract from efforts to redress human pressures and disturbances that directly undermine the condition of the GBRMP;
- ii) The need, benefit, and risks associated with proposed intervention and adaptation activities must be comprehensively and rigorously assessed, with responsibility for necessary research and monitoring bestowed on the proponents of specific activities;
- iii) All installations should be carefully and meticulously maintained, while also ensuring that they do not further undermine the appearance of reef environments following acute disturbances and coral loss;
- iv) While intervention and adaptation activities are likely to be tested at small-scales (as appropriate to manage and assess associated risks), explicit consideration must be given to viability and conservation benefit of proposed activities relevant to i) the scale of relevant threats as well as the ii) the current condition, trends, and extent of potentially affected habitats.

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