Australian Government
Great Barrier Reef Marine Park Authority

Queensland Government

Policy

Policy on Great Barrier Reef Interventions

(Revision 0) 12/2020

The Managing Agencies acknowledge the continuing Sea Country management and custodianship of the Great Barrier Reef by Aboriginal and Torres Strait Islander Traditional Owners whose rich cultures, heritage values, enduring connections and shared efforts protect the Reef for future generations.

Purpose of the policy

1. This policy will guide the Great Barrier Reef Marine Park Authority (the Authority) and the Department of Environment and Science (DES), through Queensland Parks and Wildlife Service and Partnership (QPWSP) (the Managing Agencies), on matters related to restoration and/or adaptation interventions within the Great Barrier Reef Marine Park and Great Barrier Reef Coast Marine Park (the Marine Parks), including management and permissions.

2. The policy is also intended to inform Traditional Owners, partners, proponents, stakeholders and the broader community about these management arrangements.

3. The Managing Agencies' aim is to ensure the continuing long-term protection and conservation of the Great Barrier Reef, so the values of the Marine Parks are safeguarded for current and future generations to the greatest extent possible. Within this, the objective of this policy is:

   a. to enable restoration and/or adaptation interventions designed to directly support and build ecosystem resilience and provide conservation benefits, at a range of scales, now or in the future, to the Great Barrier Reef.

Restoration and/or adaptation intervention(s) (also called reef interventions) mean an action, or actions, actively undertaken in the Marine Parks to support ecosystem recovery, build resilience and achieve conservation benefits for the Great Barrier Reef.

Application of the policy

5. The role of the Managing Agencies is to assess restoration and/or adaptation intervention (reef intervention) proposals, and decide whether to grant a permission or authorise the activity to occur in the Marine Parks.

6. Staff and delegates of the Managing Agencies will consider this policy in relevant decisions about managing the Marine Parks and all decisions about reef interventions. This includes relevant applications for permissions (including to conduct interventions or research into interventions) and restoration and/or adaptation interventions considered, or undertaken, as management activities (as provided for in section 5.4 of the *Great Barrier Reef Marine Park Zoning Plan 2003* (Commonwealth) or section 145A and 145B of the *Marine Parks Act 2004* (Queensland).

7. The policy applies to the Great Barrier Reef ecosystem as a whole (often abbreviated as 'the Reef' or "the Great Barrier Reef"). In addition to corals and coral reef habitats, the Great Barrier Reef ecosystem includes many other marine and coastal habitats and species (see Outlook Report 2019).

There are a broad range of possible interventions for the Reef. Some are underway, whereas others require years of development and testing before they would be deployed in the Marine Parks.

Examples of current or future restoration and/or adaptation interventions may be:

- *local and regional cooling and shading to reduce coral stress and enhance survival during acute events*
- *stabilising reef substrate to help coral recruitment*
- *enhancing reproduction and recruitment of species*
- *assisting coral adaptation to warming oceans (via seeding and propagation of coral larvae, recruits and adults derived from existing stock, e.g. hybrids, or synthetic biology and genetic engineering), and*
- *other measures to support species, habitats and ecosystems including: rehabilitation of habitats damaged by e.g. ship groundings; restoration of seagrass meadows, mangroves or saltmarshes following a major die-back; removal of marine debris; environmental or species manipulations to support breeding populations of at-risk seabirds or marine turtles; controlling crown-of-thorns starfish or Drupella snails to protect corals; coral gardening to rehabilitate damaged reef sites and enhancing key ecosystem processes such as reef herbivory.*

Where Reef interventions fit in managing the Marine Parks

8. Mitigating human-induced climate change through effective global emissions reduction remains the most urgent and critical need for the Great Barrier Reef's future, irrespective of the success of any Reef restoration and/or adaptation interventions (see the Authority's Climate Change Position Statement).

9. Existing management which protects the Great Barrier Reef, such as compliance, Marine Park zoning, fisheries and catchment management, must be maintained and strengthened, including where they can be applied to sites damaged from extreme events.

10. In addition, it is now important to investigate restoration and/or adaptation interventions (reef interventions) that may help increase the resilience of at least parts of the Reef.

11. The Authority recognises reef interventions as a purpose for ecologically sustainable use under the *Great Barrier Reef Marine Park Act 1975* (Commonwealth).

12. The Reef ecosystem is a biocultural ecosystem that includes humans. There are interdependencies of all components of the system (including humans and their complex cultural and spiritual values).

13. The main purpose of reef interventions in the Marine Parks must be to help directly support ecosystem recovery to build resilience and achieve conservation benefits as these underpin all other values.

14. As far as is consistent with this main purpose, the Managing Agencies encourage reef interventions that also provide secondary benefits to Indigenous and historic heritage, and social, biocultural and economic values of the Marine Parks.

15. Reef interventions may lead to full recovery or a level of rehabilitation, mostly only at site, local or regional scales.

16. Reef interventions may be done with, or by, other government agencies, Traditional Owners, researchers, other experts, industries, communities, other organisations and individuals as long as these interventions are done, authorised or permitted by the Managing Agencies.

17. The Managing Agencies recognise that reef intervention activities to benefit the Reef ecosystem may also occur outside the Marine Parks, for example, in adjacent catchments. Such interventions, carefully assessed and monitored, are welcome although outside the direct jurisdiction of the Authority.

Strategic guidance to maximise outcomes for the Reef

18. The Great Barrier Reef is still resilient, and the Managing Agencies encourage reef restoration and/or adaptation interventions (reef interventions) that are designed to help retain this resilience.

19. The Managing Agencies support reef interventions that minimise harm and preserve the Reef's natural ecological functions as much as possible, so that additional, higher risk interventions may not be necessary.

20. The Managing Agencies will seek to adaptively manage reef interventions using risk-based processes. This includes enabling innovation while minimising risks from failures in this emerging area of science, technology and practice.

21. The Managing Agencies consider that reef interventions should be implemented in a staged way. Low-risk reef interventions are encouraged to be implemented, and assessed for effectiveness, first. Such interventions may be delivered quickly, in some locations, to help protect existing Reef resilience. Higher-risk interventions will require pilot studies, control (reference) sites and proof-of-concept before they are considered for full-scale implementation in the Marine Parks. Proof-of-concept includes assessment of likely success of broader-scale implementation, if relevant.

22. The Managing Agencies encourage restoration and/or adaptation intervention action where and when the anticipated conservation benefits to the Reef outweigh associated risks. Considerations include:
    a. whether intervention is needed at the proposed location(s) or whether natural processes are likely to be sufficient for recovery or, even, disrupted by the intervention;
    b. the high value of the Great Barrier Reef ecosystem for its intrinsic, environmental, biocultural, social cultural and economic values, and the need to minimise negative impacts on same where possible;
    c. the anticipated conservation benefits of the intervention now, or its contribution towards realising conservation benefits in the future; and
    d. the risks of inaction. There may be circumstances under which no action is considered not in-line with management responsibilities. In other cases, inaction will be the appropriate management response because risks associated with proposed actions are considered too high.

23. The following types of reef interventions are currently not supported in the Marine Parks, either because the known environmental risks are considered unacceptable, or there is significant uncertainty about potential negative impacts:
    a. introduction of non-native species, marine pests or genotypes from areas outside the Marine Parks (e.g. the Red Sea)(refer Translocation Policy);
    b. introduction of natural or bioengineered pathogens or viruses (e.g. as biological control agents)(refer Translocation Policy);
    c. use of non-local material that is likely to introduce pests, pathogens;
    d. introduction of significant amounts of solid waste or pollution (e.g. sinking of vessels, large amounts of plastics);
    e. reef interventions that could artificially increase populations of some species (e.g. *Drupella* spp.) to outbreak levels;
    f. introduction of chemicals or minerals which may impact water quality (may impact ecosystem components and processes negatively e.g. cause localised phytoplankton blooms);
    g. experimental trials that are very high risk, especially in sensitive environments, at high value tourism locations or in areas with high connectivity to other habitats, noting that these locations may change over time with the changing environment; and
    h. reef interventions that have been shown to be unsuccessful on the Reef or elsewhere.

Notes: This list is not exhaustive and is subject to change as new information becomes available.

Risk categories are in paragraph 40 of this policy. If, in future years, uncertainty about impacts is adequately reduced, or environmental risks can be mitigated or minimised to a level acceptable to the Managing Agencies, these types of reef interventions may be considered.

24. Under their respective legislation, the Managing Agencies will determine when to start, modify and stop a reef intervention activity for the purposes of management including in the event of an emergency.

25. Under the Authority's permissions system, the Authority, in accordance with the Permission system policy will decide on whether to grant or refuse a Commonwealth Marine Park permission, the conditions

relating to the conduct of a reef intervention, and can suspend or revoke the permission. The permission may be joint with Queensland.

26. Depending on factors such as the location(s) and nature of the proposed activities, proponents of reef interventions may also require additional approvals under other local, State or Commonwealth regulatory regimes (e.g. those that pertain to the sea dumping, fisheries, gene technology, maritime safety, Environment Protection and Biodiversity Conservation Act) as well as free, prior and informed consent from relevant Traditional Owners (see below).

27. The Managing Agencies will provide strategic guidance and oversight of current and future reef interventions in the Marine Parks using best available science and knowledge. This includes environmental, ethical, social and cultural considerations, such as:

    a. ensuring collective efforts on maximising ecosystem resilience. In particular, encouraging interventions that: benefit one or more species, habitat or ecological process; minimise harm; do not increase vulnerabilities; repair damage; remove marine debris; or increase adaptability to climate change;

    b. use of reference ecosystem sites in reef intervention research. This involves describing the specific compositional, structural and functional ecosystem attributes requiring reinstatement before the desired outcome (the restored state) can be said to have been achieved.

    c. supporting and encouraging the consideration and involvement of Traditional Owners in all stages of reef interventions in the Marine Parks, including free, prior and informed consent to any proposed intervention (refer Traditional Owner Heritage Assessment Guidelines);

    d. guiding what reef interventions are deployed, where and when, to maximise conservation outcomes;

    e. setting priority targets for reef intervention efforts. The Managing Agencies consider coral reefs a priority target. Seagrass meadows and at-risk marine turtle and seabird populations are additional targets, and other priority targets will be identified as required;

    f. the ability of species, habitats and the ecosystem to withstand, or recover from, damage. In instances where recovery to a pre-disturbance condition (as assessed against a reference or control ecosystem site) is not realistic or possible, reef intervention goals may focus instead on rehabilitation. That is, achieving a level of biodiversity and ecosystem function to meet the needs of the species and/or people at a given site;

    g. working with partners to identify reef interventions with the highest likely positive outcomes for the Reef and all the values connected to it;

    h. reducing uncertainty around the reef intervention performance, costs and risk;

    i. engaging with risk to progress reef interventions including considering the social and cultural acceptability, ethics and other trade-offs;

    j. encouraging collaborations, activities and innovation to develop, trial, demonstrate, improve and, where appropriate, scale-up interventions for potential application across more of the Marine Parks;

    k. adapting management of interventions to respond to new information; and

    l. coordinating across the Authority's programs (e.g. compliance, crown-of-thorns starfish control, reef interventions being undertaken by management, and permissions assessment) to maximise synergies and efficiencies that help the Reef and avoid duplication.

28. There is a spectrum of anticipated conservation benefits from reef interventions. This includes low-risk, lower-conservation-yield interventions that have a clear pathway for up-scaling to realise higher conservation benefits. Some sites may allow for building public understanding to support larger-scale deployment of the interventions into the future.

Our approach to adaptively managing reef interventions

29. In delivering and enabling restoration and/or adaptation interventions (reef interventions), the Managing Agencies aim to exemplify world-class practice, adaptive planning and management, and provide robust governance.

30. The Managing Agencies will ensure that the joint management arrangements between the Authority and the Queensland Government remain effective, efficient and adaptive for managing reef interventions.

Traditional Owners and reef interventions

31. Traditional Owners have cared for their sea country and heritage for tens of thousands of years and possess cultural authority for their sea country.

32. The natural heritage of the Great Barrier Reef has biocultural value to the Reef's Traditional Owners.

33. The Managing Agencies recognise that establishing effective and meaningful partnerships with Traditional Owners, including but not limited to those involved in Traditional Use of Marine Resource Agreements, in all stages of reef interventions is usually essential to protect biocultural and heritage values. The Managing Agencies encourage reef intervention project proponents to do same.

34. The Managing Agencies actively support Aboriginal and Torres Strait Islander aspirations, including the protection of heritage values, by:

    a. helping to identify and advance opportunities for co-design, co-management and benefits to Traditional Owners in delivering reef interventions;

    b. strongly encouraging proponents of reef interventions to ask first and engaging early with relevant Traditional Owners, including seeking free, prior and informed consent regarding proposed reef interventions in their sea country. This helps prevent damage to Indigenous heritage and biocultural values, and enhances ecological and economic benefits;

    c. seeking to ensure relevant Traditional Owners are given opportunities to contribute to the planning, implementation and evaluation of reef interventions in their sea country and, where possible, be involved as partners;

    d. inviting the appropriate input of Traditional Ecological Knowledge, if this is desired by the Traditional Owner knowledge-holders, into the reef interventions;

    e. ensuring that reef intervention project updates and results are provided to relevant Traditional Owners as they become available; and

    f. ensuring Traditional Ecological Knowledge and Intellectual Property are recognised in any relevant project outputs including reports and/ publications.

35. Traditional owners are entitled to undertake activities, including intervention activities (e.g. uprighting overturned turtles or overturned corals), under Aboriginal or Torres Strait Islander custom or tradition in that site or area where they have spiritual or cultural affiliations or hold native title.

Fostering partnerships

36. The Managing Agencies will strive to foster partnerships with Traditional Owners, other government agencies, scientists, industries, not-for-profit organisations and Great Barrier Reef communities, as appropriate, in reef interventions deployed by the Authority for the purposes of management.

37. The Managing Agencies will strongly encourage others involved in reef interventions to identify opportunities for participation by such individuals and groups, as appropriate, at all stages including design, deployment and evaluation.

Recent examples of fostering partnerships:

- The involvement of Wuthathi and Kemerkemer Meriam Nation (Ugar, Mer, Erub) Traditional Owners was crucial to the success of the Raine Island Recovery Project. In 2018–19, Traditional Owners were employed as rangers on all seven trips to assist the Reef Joint Field Management Program with turtle recovery work. Eroded areas were fenced off to stop nesting (and endangered) green turtles falling over rocky edges, and to guide the turtles back towards the beach on a safe path to nest.
- In 2018, the Australian Government supported the concept feasibility phase for the development of the Reef Restoration and Adaptation Program to investigate the best science and technology options to help the Great Barrier Reef resist further damage, repair and recover. This collaborative program brought together Australia's leading experts to scope possibilities for coral reef restoration and/or adaptation interventions. The outcome is now informing further investment in reef resilience and adaptation science.

Managing risk

38. Some possible, future reef interventions may be unprecedented and potentially harmful if they are not appropriately managed. The Managing Agencies fully recognise this and will adapt reef intervention management processes to new information.

39. The permission process exemplifies how management practices include assessing risks, using the risk assessment in transparent, risk-based decision-making that considers all relevant values, potential benefits, costs and carefully managing all types of risk.

40. Risk assessments will consider biodiversity, Traditional Owner and historic heritage, biocultural, economic and social values. They includes risks associated with unintended consequences, cumulative impacts (of all interventions themselves as well as other impacts) and technical delivery risks. Where relevant, it also includes consideration of scale and of potential impacts in other Australian and overseas jurisdictions. More details available in the accompanying guidelines.

41. Permission may be granted for reef intervention activities where relevant risks have been identified, and any required mitigation measures and contingency plans that have been developed to reduce all risks to an acceptable level. The Managing Agencies apply the following risk categories to reef interventions:

    Low risk: in general, low risk activities will not require Great Barrier Reef-specific pilot studies because proof-of-concept has already been established or they are inherently low risk;

    Medium risk: these activities will generally require proof-of-concept, and may require initial small-scale pilot studies, with control (ecosystem reference) sites, at suitable location(s). An Environmental Management Plan, including a Contingency Plan, may also be required;

    High risk: these activities will require that relevant risks have been identified and mitigation measures developed, proof-of-concept provided. These projects must have an initial small-scale pilot study with control (ecosystem reference) sites in the Great Barrier Reef to gather evidence to show effectiveness and appropriateness of controls to mitigate/minimise risks. Environmental Management Plans, including Contingency Plans, must be in place to document risk mitigation/minimisation efforts and in case of failures of those efforts; and

    Very high risk: there is generally significant uncertainty with very high risk activities. The Managing Agencies recognise that these projects may cause significant irreversible damage to the values of the Marine Parks. For these reasons, very high risk interventions are not supported in the Marine Parks (see paragraph 22) until risk mitigation efforts reduce the risk to acceptable levels.

42. The Reef Intervention Application Guidelines and the risk assessment procedure for the joint permissions system, as updated from time to time, provide more detail on the risk and assessment approach likely to be applied to particular activities when seeking permission.

Transparency and engagement

43. To help build and maintain public trust, and demonstrate best practice probity, the Managing Agencies are committed to transparency, engagement and consultation on restoration and/or adaptation interventions. This includes, as soon as possible:

    a. making publicly available, including online, information about applications received for reef interventions in the Marine Parks and any permission granted for interventions. The Authority consults the public on a range of matters including some reef intervention permission applications as per Guidelines for Applications;

    b. making publicly available, including online, information about reef interventions being undertaken by, or on behalf of, the Managing Agencies;

    c. seeking independent, external, expert advice, if needed, on a case-by-case basis, for higher risk interventions (as mentioned also in the Risk Assessment Procedure);

    d. raising public awareness of interventions being considered, underway or completed. This includes encouraging partners, and requiring permitted proponents, to provide information online about: interventions under development for potential use in the Marine Parks; the intention (or otherwise) of "scaling-up" trial interventions; the ongoing overall results of the work as it becomes available; any associated audits, reviews, lessons-learned; and risk management protocols.

44. The Managing Agencies will work to understand community views on interventions. The Managing Agencies may facilitate or encourage:
    a. engagement activities on reef interventions to ensure transparency and deliberation on specific technologies and higher risk intervention approaches;
    b. use citizen science, example reef intervention sites or other means to allow the public to observe restoration in practice; and
    c. monitoring of public attitudes and perceptions, and giving due consideration to this in managing reef interventions. This may include information about public awareness of, and attitudes towards, reef interventions (generally and for specific options), and about any public concerns or misconceptions about efficacy, scale and potential of impacts of reef interventions.

Monitoring and adapting

45. In acknowledging the very poor outlook for the Great Barrier Reef ecosystem, the Managing Agencies recognise that reef interventions will be into a changing environment which will have implications for understanding the success, or otherwise, of interventions.

46. The Managing Agencies recognise that there is potential for unintended and adverse impacts of interventions, and that not all restoration or adaptation interventions will be successful. It is as important to learn from these instances as it is from successes to develop best practices.

47. The Managing Agencies will adaptively manage reef interventions in the Marine Parks. To support this, the Managing Agencies require reef intervention projects to include robust , reporting, and so expect:
    a. measurable project objectives and the efficacy of achieving desired objectives to be evaluated over at least 5 years, if necessary, including against control (ecosystem reference) sites where appropriate;
    b. reporting to the Managing Agencies of implementation progress and monitoring results for all aspects of reef interventions to aid timely reporting of any unintended or adverse impacts to manage risks; and
    c. outcomes of, and lessons-learned from reef interventions to be made publicly available, within six months of project results data being collected, for others to access and use, whilst protecting scientific Intellectual Property.

48. The Managing Agencies want to facilitate and maintain public access to the benefits of reef intervention research and technology development and innovation. This may be through conditions of a permission or other contractual arrangements.

How restoration and/or adaptation will be considered – specific principles

49. Restoration and/or adaptation interventions (reef interventions) should be conducted in a manner that best aligns with the objectives of any management tools for the location(s). Considerations related to key tools are detailed below.

Zoning Plans

50. The Managing Agencies may grant permissions for others to undertake reef interventions, including intervention research, in areas covered by the Great Barrier Reef and Great Barrier Reef Coast Zoning Plans. In addition, reef interventions may be taken as management activities, or authorised as management activities by the Authority under section 5.4 of the *Great Barrier Reef Marine Park Zoning Plan 2003* (Commonwealth) or by QPWS&P under section 145A and 145B of the *Marine Parks Act 2004* (Queensland).

51. Depending on the degree to which reef interventions are anticipated to protect and conserve the Great Barrier Reef, it is feasible that interventions could be in line with the 'conservation', 'protection' and potentially even 'preservation' aspects (as relevant) to the first listed objective of all zones in the Marine Parks.

Note: For example, 'the first listed objective' for the Marine National Park Zone (known as 'green zones') provides for the protection of the natural integrity and values of the area, generally free from extractive activities.

52. Reef interventions are assessed on a case-by-case basis which considers not only the above 'conservation', 'protection' and 'preservation' aspects of zone objectives, but also the multiple use component of other, subordinate zone objectives.

53. Reef interventions should generally be deployed, where feasible, in zones that allow the greatest range of use (e.g. General Use Zone) before more highly protected zones (e.g. Marine National Park Zone). The riskier the intervention, the less desirable in more highly protected areas. It is recognised that some larger-scale interventions may cut across multiple zones.

54. Additional guidance relating to objectives of more highly protected zones is identified below.

55. **Buffer Zone and Marine National Park Zone:** The primary objectives of these zones are 'the protection of the natural integrity and values of the area', and being 'generally free from extractive activities'. "Subject to the (first) objective", these zones also provide opportunities for 'certain activities, including the presentation of the values of the Marine Park, to be undertaken in relatively undisturbed areas'.

56. A proposed reef intervention for a location in the Marine National Park Zone or Buffer Zone is more likely to be considered an acceptable risk where:
    a. it is expected to maintain or improve protection and conservation for that specific location and its key values, and/or achieve a conservation benefit to the region; and
    b. any extractive activities related to the intervention are minimised level deemed acceptable by the Managing Agencies, and must be essential to the intervention activity; and
    c. impacts on other activities, including the presentation of the values, are minimised as far as practicable, and the intervention is ultimately intended to maintain or improve those presentation values.

57. **Scientific Research Zone:** The objectives of this zone include 'the protection of the natural integrity and values of the area', being 'generally free from extractive activities' and providing opportunities 'for scientific research to be undertaken in relatively undisturbed areas'. A proposed reef intervention for a location in a Scientific Research Zone is more likely to be considered an acceptable risk where:
    a. it is expected to maintain or improve protection and conservation for that specific location and its key values, and/or achieve a conservation benefit to the region; and
    b. any extractive activities related to the intervention are minimised to a level deemed acceptable by the Authority and must comprise an essential component of the intervention activity; and
    c. it mitigates, where possible, impacts on other research being conducted in the same zone.

58. **Preservation Zone:** The Managing Agencies anticipate that it will become increasingly difficult to achieve the objective to 'preserve the natural integrity and values of areas' of the Marine Parks without intervention, and so are prepared to consider reef interventions in Preservation Zones where essential. The objectives of this zone also includes being 'generally undisturbed by human activities'. A proposed restoration or adaptation intervention would only be considered for a location in a Preservation Zone if:
    a. it is expected to achieve a high degree of conservation benefit for that specific location and/or regional conservation benefits are greatest if the action is deployed at that particular site; and
    b. it is a priority for management and done sparingly; and
    c. entry is only granted for a specified period of time to limit human visitation impacts; and
    d. any extractive activities related to the intervention are minimised to a level deemed acceptable by the Managing Agencies and must be an essential component of the intervention activity; and
    e. it is done using a proven or lower-risk approach to achieve the intended benefits, with low impacts on other values of the site.

Example: *When natural recovery is unlikely following disturbance, the Managing Agencies may undertake, or consider allowing, reef interventions using an established technique (for example, removal of Crown-of-Thorns starfish) to help accelerate recovery in a Preservation Zone*.

59. **Commonwealth Islands Zone:** The objectives of this zone also include aspects to provide for 'facilities and uses consistent with the values of the area'. A proposed reef intervention for a location within a Commonwealth Island Zone is more likely to be considered an acceptable risk where:
    a. it is expected to maintain or improve protection and conservation for that specific location and its key values, and/or achieve a conservation benefit to the region; and
    b. it mitigates impacts on other uses of the location, where possible.

60. Medium to very high risk interventions will be less likely to be compatible with the objectives of highly protected zones (e.g. Buffer, Marine National Park Zone and Preservation Zones).

61. There are a number of management tools that overlay the zoning framework outlined above and additional guidance relating broadly to use of these management tools is identified below.

Remote Natural Area

62. Under the Great Barrier Reef Marine Park and Great Barrier Reef Coast Zoning Plans, most of the area north of Lizard Island to the tip of Cape York is part of a Remote Natural Area overlay. The objectives of the Remote Natural Area include those relevant to a zone situated within the Area, and additional objectives that ensure the Area 'remains in a state that is largely unaltered by works or facilities' and provides 'opportunities for quiet appreciation and enjoyment'. A proposed restoration or adaptation intervention for a location in the Remote Natural Area is more likely to be considered an acceptable risk where
    a. it is consistent with other considerations detailed in this policy for where the proposed intervention would occur; and
    b. it is a priority for management, and expected to maintain or improve protection and conservation for that specific location and its key values and/or achieve a conservation benefit for the region; and
    c. it limits, where possible, facilities and works required to undertake the intervention.

Example: *When there is a high risk of coral bleaching, the Authority may undertake, or allow cooling and shading interventions (after appropriate pilot studies), including associated structures, to reduce local coral bleaching stress in high value coral habitats within the Remote Natural Area. The importance of the proposed intervention location(s) for regional coral replenishment would be considered.*

Special Management Areas

63. The objectives of the Great Barrier Reef and Great Barrier Reef Coast Marine Parks' Special Management Areas may include species or natural resource conservation; protection of cultural or heritage values; public appreciation; or supporting management responses to emergencies. A proposed restoration or adaptation intervention within a Special Management Area is more likely to be considered an acceptable risk where:
    a. it is consistent with other considerations detailed in this policy for where the proposed intervention would occur; and
    b. it is consistent with the objectives of the specific Special Management Area.

Example: *The Authority is prepared to consider a coral nursery/ coral gardening project in a Public Appreciation Special Management Area specifically to support restoration that is a priority for management. It cannot include any commercial aquaculture*.

Plans of Management

64. Great Barrier Reef Marine Park Authority Plans of Management help to protect and conserve values of the Marine Park at a regional scale while allowing for a range of experiences. The Plans for offshore Cairns and Port Douglas, Hinchinbrook and the Whitsundays manage access (e.g. vessel length and group sizes at locations), types and numbers of tourism operations and facilities, frequency of visitation and specific uses. Research can occur within the Planning Areas. A proposed restoration or adaptation intervention within a Planning Area is more likely to be considered an acceptable risk where:
    a. it is consistent with other considerations detailed in this policy for the proposed location; and

b. it maintains the intent of the Plans. The Plans of Management allow for some discretion by delegates of the Authority when considering activities that were not considered in the making of the Plans.

Example: *Managing Agencies may allow coral bommies displaced by cyclones to be returned and stabilised in a Plan of Management 'natural' setting which is generally free from facilities and larger vessels*.

Other management considerations

65. The Great Barrier Reef Marine Park Authority has other types of location-specific or location-relevant management tools that will be considered in decision-making including Traditional Use of Marine Resource Agreements. Interventions are more likely to be considered an acceptable risk if they align with the objectives of other relevant management tools.

66. While an intervention is underway, it may be necessary to temporarily restrict incompatible uses of, or access to, an area. The Managing Agencies will consult potentially affected users before doing this, unless an urgent response is required (e.g. following an incident). Generally, voluntary arrangement to limit access will be considered before using more formal management tools, such as declaring a Special Management Area at the location for the duration of the activity.

Example: *Entry or vessel transit of a local reef site may not be compatible with the temporary deployment of surface films to shade coral habitat during an acute heat stress event*.

67. The Managing Agencies may consider that structures installed as part of an intervention have become part of the natural habitat and provides conservation benefit (whether specifically designed to or not). If the Managing Agencies decide this is the case then the obligations of the permit or authorisation holder would cease in this regard. The Managing Agencies have the final decisions on if, or when, this occurs, and any pre-conditions that must be met (see also the Reef Intervention Application Guidelines for further considerations including choice of materials).

Example: *To increase rates of reef recovery after major disturbances, interventions may add to, or stablise, reef structures (e.g. consolidating cyclone-derived rubble). Over time, a stabilising structure may become completely overgrown by coral. In this case, conservation outcomes may be maximised by the structure remaining in place*.

68. Once satisfied that the main purpose of any restoration and/or adaptation intervention is to support and build ecosystem resilience, the Managing Agencies will seek to maximise the public good from reef interventions, especially in protecting and enhancing all the Outstanding Universal Values of the Great Barrier Reef. The Managing Agencies recognise that in order to be financially viable, some reef intervention projects may require association with activities of a commercial nature, and this may result in proponents deriving secondary, indirect commercial benefits (see also paragraph 12 of this policy).

Implementation

69. This Policy will take effect from the date it is approved and be complemented by updated and publically available Reef Intervention Application Guidelines, which will provide more detailed guidance for applicants wishing to conduct reef restoration and//or adaptation intervention (reef interventions).

70. The Managing Agencies will undertake necessary tasks to implement this policy, including:
    a. where required, seeking to clarify the Authority's policies and arrangements to provide for more explicit consideration of, and to better enable, appropriate reef interventions;
    b. ensuring good governance, procedures and practices including adhering to the permitting timeframes and providing mechanisms for review of permit decisions;
    c. encouraging early engagement, by proponents, on proposed reef interventions to facilitate permitting processes;
    d. continuing to progress tasks under Authority work programs that improve relevant aspects of the planning and management system and associated tools;
    e. implementing five-yearly (or as-needed) reviews of this policy (and supporting Guidelines) and, if required, revising this policy or developing additional guidelines for specific issues;

f. continuing to work with other relevant regulators and streamline processes (including for permissions) to enable the conduct of reef interventions;
g. ensuring that proponents conduct remediation of unintended and/or adverse impacts of reef interventions where possible and desirable;
h. encouraging others to quickly make public and open access: restoration and/or adaptation options being investigated; their potential benefits and costs; and all results and lessons-learned, including preliminary findings, from deployed interventions;
i. sharing best-practice and lessons learned from interventions, nationally and internationally, including information about proven, low-risk interventions that have progressed through the research phase.

71. Queries about this policy can be directed to the Authority's Policy team (4750 0705; policyandplanning@gbrmpa.gov.au) or Assessment and Permissions team (4750 0866; (assessments@gbrmpa.gov.au).

Background information

72. For restoration and/or adaptation interventions in the Marine Parks, this policy should be read in conjunction with the Reef Intervention Application Guidelines, Environmental Impact Management Policy: Permission System and other relevant legislation, policies and standards, as listed within Appendix A.

73. Other relevant legislation may include the *Environment Protection (Sea Dumping) Act 1981*, the *Environment Protection and Biodiversity Conservation Act 1999*, the *Marine Parks Act 2004 (Qld)*, and the *Marine Parks Regulations 2017 (Qld)*. See Appendix A and other regulators such as the Office of Gene Technology Regulator, Queensland Department of Agriculture and Fisheries and the Queensland State Assessment and Referral Agency that may require additional permissions, approvals and/or licences.

Definitions

Adaptation The process by which a species becomes fitted to its environment (including environmental changes due to climate change); it is the result of natural selection acting upon heritable variation over several generations.

Adaptation intervention/s Are an action, or set of actions, undertaken in the Marine Park to support or build ecosystem resilience and achieve conservation benefits for the Great Barrier Reef through enhancing natural genetic adaptation processes.

Adaptively manage A systematic process for continually improving management policies and practices by learning from the outcomes of operational programs.

Commerciality or commercial nature In determining if an activity is of a commercial nature, the Authority considers if the primary purpose of the activity constitutes, or has sufficient connection with, the provision of goods or services for reward (either monetary or non-monetary). Refer to the Authority's Guidelines for applications for joint permissions.

Connectivity The degree to which seascapes and landscapes allow species to move freely and ecological processes to function unimpeded, including between habitats and including natural movement of material, energy and genes.

Coral nursery/coral gardening A coral propagation activity done for the primary purpose of non-commercial coral reef conservation/restoration (e.g. research). In the context of reef interventions, the Authority views coral gardening to be corals growing on racks, trees, etc. that are mainly intended for outplanting back into the natural environment.

Ecosystem A dynamic complex of plant, animal and microorganism communities and their non-living environment interacting as a functional unit.

Ecosystem resilience The capacity of an ecosystem to recover from stress and disturbance while retaining its essential functions, structure, feedbacks and identity (source: IUCN CEM Resilience Thematic Group),

Facility Has the meaning as defined in subsection 3(A)(9) of the *Great Barrier Reef Marine Park Act 1975* being a building, structure, a vessel, goods, equipment or services.

Great Barrier Reef The Great Barrier Reef ecosystem as a whole including all the component habitats.

Management activities In the context of reef interventions, these are in-Park activities undertaken by the Management Agencies, or authorised by the Managing Agencies in co-operation or under an agreement, for the purposes of managing the Marine Parks under section 5.4 of the *Great Barrier Reef Marine Park Zoning Plan 2003* or section 145A and 145B of the *Marine Parks Act 2004* (Queensland). Management activities include, but are not limited to, delivering services, carrying out research or investigations and providing incident response support, to assist in the management of the Marine Parks.

Managing Agency/ies In relation to the Great Barrier Reef Marine Park this means the Great Barrier Reef Marine Park Authority. In relation to the Great Barrier Reef Coast Marine Park this means the Department of Environment and Science through the Queensland Parks and Wildlife Service and Partnerships. In the plural, this refers to both.

Marine Parks In the plural, Marine Parks refers to both the Commonwealth Great Barrier Reef Marine Park and the adjacent Queensland Great Barrier Reef Coast Marine Park.

Permission Means a permission to which Part 3 of the Great Barrier Reef Marine Park Regulations (2019), as amended from time-to-time, applies.

Permit A written document issued by the Authority that contains one or more permission(s) and any conditions attached to such permission(s).

Pilot study In the context of reef interventions, a pilot study is a small-scale preliminary study conducted in the field in order to evaluate feasibility, time, cost, adverse impacts, and to gain knowledge prior to allowing a full-scale restoration/adaptation activity.

Proof-of-concept In the context of reef interventions, proof-of-concept is evidence, typically deriving from an experiment or pilot project as well as literature reviews and scientific papers, which demonstrates that a reef intervention is feasible along all dimensions (e.g. ecological, social, cultural, economic).

Reef Interventions (or Restoration and/or adaptation intervention(s)) An action, or actions, actively undertaken in the Marine Parks to support ecosystem recovery, build resilience and achieve conservation benefits for the Great Barrier Reef.

A reference ecosystem site A control site (or model) adopted to identify the particular ecosystem that is the target of the restoration project. This involves describing the specific compositional, structural and functional ecosystem attributes requiring reinstatement before the desired outcome (the restored state) can be said to have been achieved.

Rehabilitation The process of reinstating a level of ecosystem functionality on degraded sites where ecological restoration is not the aspiration, as a means of enabling ongoing provision of ecosystem goods and services

Resilience Refers to the capacity of an ecosystem to resist or recover from disturbance or undergo change while still retaining essentially the same function, structure and integrity. It is not about a single state, but the capacity of an ever-changing, dynamic system to return to a healthy state after a disturbance or impact.

Restoration The process of assisting the recovery of an ecosystem that has been degraded, damaged or destroyed. (Note: Single species restoration can be considered complementary to, and an important component of, ecological restoration.)

Restoration and/or adaptation intervention(s) (or Reef Intervention(s)) An action, or actions, actively undertaken in the Marine Parks to support ecosystem recovery, build resilience and achieve conservation benefits for the Great Barrier Reef.

Restoration intervention(s) An action, or actions, actively undertaken in the Marine Parks to support ecosystem recovery, build resilience and achieve conservation benefits for the Great Barrier Reef through enabling restoration.

Sensitive environments Areas that contain populations or assemblages of organisms, or habitats, that are considered to have significant conservation and / or cultural heritage values. Examples may include key dugong habitats, fish spawning aggregation sites, seagrass beds, breeding areas, and diverse, rare or very old coral assemblages.

Structure In the context of reef restoration and/or adaptation interventions, a structure is a type of facility.

Traditional Owner Has the meaning as defined in section 3 of the *Great Barrier Reef Marine Park Act 1975*: an indigenous person (a) who is recognised in the Indigenous community or by a relevant representative Aboriginal or Torres Strait Islander body: (i) as having spiritual or cultural affiliations with a site or area in the Marine Park; or (ii) as holding native title in relation to that site or area; and (b) who is entitled to undertake activities under Aboriginal or Torres Strait Islander custom or tradition in that site or area.

Great Barrier Reef Marine Park Authority
PO Box 1379
Townsville Qld 4810
Australia
Phone + 61 7 4750 0700
Fax + 61 7 4772 6093
Email info@gbrmpa.gov.au
www.gbrmpa.gov.au

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Appendix A Related legislation / standards / policy [as updated from time to time]

Great Barrier Reef Marine Park Authority materials

Great Barrier Reef Marine Park Act 1975

Great Barrier Reef Marine Park Regulations 2019

Great Barrier Reef Marine Park Zoning Plan 2003 (Commonwealth Zoning Plan)

Whitsundays Plan of Management

Hinchinbrook Plan of Management

Cairns Area Plan of Management

The Aboriginal and Torres Strait Islander Heritage Strategy, Traditional Owner Heritage Assessment Guidelines and the principles of Asking first and engage early.

Policies: Permission system policy, cumulative impacts policy, net benefit policy, good practice management for the Great Barrier Reef, Translocation of species in the Marine Park; aquaculture; no-structures sub-zones

Guidelines on Applications for restoration/adaptation projects to improve resilience of habitats in the Great Barrier Reef Marine Park 2018 (Reef Intervention Application Guidelines) including the Risk Assessment Permission System Assessment Procedure)

Other Guidelines: COTS control, Managing scientific research; coral transplantation at tourism sites; Assessment guidelines; Application guidelines ; Risk assessment procedure; Permission system service charter; EPBC referral deemed application information sheet

Other related materials

Environment Protection (Sea Dumping) Act 1981 (Sea Dumping Act) regulates the loading and dumping of waste at sea. The Act fulfils Australia's international obligations under the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (London Protocol) to prevent marine pollution by dumping of wastes and other matter

> Guidelines for the Placement of Artificial Reefs - London Convention and Protocol/UNEP
>
> Further information on the Sea Dumping Act

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and associated significance guidelines for matters of national environmental significance. In particular for the Great Barrier Reef Marine Park matter of national environmental significance. Further information on assessments of matters of national environmental significance

Underwater Cultural Heritage Act 2018

North-East Shipping Management Plan 2014 (and Review July 2019)

Queensland legislation and materials

Sustainable Ports Development Act 2015

Queensland Heritage Act 1992

Aboriginal Cultural Heritage Act 2003

Torres Strait Islander Cultural Heritage Act 2003

Planning Act 2016

Environmental Protection Act 1994

Nature Conservation Act 1992

Marine Parks Act 2004

Marine Parks (Great Barrier Reef Coast) Zoning Plan 2004

Gene Technology Act 2000

Fisheries Act 1994

Sea Installations Act 1987