(Draft for public consultation) February / 2018

Objective

To provide guidance to delegates and applicants when considering an application for permission to conduct intervention activities to improve resilience of coral reef habitats in the Great Barrier Reef Marine Park.

**Target audience**

Agency staff; applicants for permission to conduct intervention activities to improve resilience of coral reef habitats in the Great Barrier Reef Marine Park

# Purpose

1. To inform reef intervention activities designed to improve the resilience of coral reef habitats, while ensuring they do not have an adverse impact on the biodiversity, heritage, social or economic values of the Marine Park.

# Related legislation / standards / policy

1. This guideline should be read in conjunction with the Environmental Impact Management Policy: Permission System and other relevant legislation, policies and standards, as listed within [Appendix 1](#_Appendix_1._).

# Context

1. Coral reefs are the cornerstone of the Great Barrier Reef ecosystem and its evolutionary history. Their species diversity, habitat value and natural beauty are major contributors to the Reef’s outstanding universal value as a world heritage area. The Great Barrier Reef is the world's largest coral reef ecosystem, ranging over 14 degrees in latitude and comprising more than 2900 separate coral reefs.
2. The condition and trend of coral reef habitats within the Great Barrier Reef Marine Park has declined over the past 30 years as highlighted in the 2014 Outlook Report, more recently in the Reef 2050 Long-Term Sustainability Plan (the Reef 2050 Plan) and subsequent monitoring data. The 2014 Outlook Report noted that all actions to reduce the threats to the Reef, whether big or small, will help restore condition and will improve its outlook. The Reef 2050 Plan highlights the need to restore the resilience of ecosystems in the face of current and future threats; for example, from climate change. A resilient ecosystem refers to the capacity of that ecosystem to either resist (absorb) or to recover from an impact.
3. The declining condition of coral reef habitats in the Great Barrier Reef is largely the result of insufficient time for coral recruitment and growth to compensate for cumulative coral losses resulting from cyclones, crown-of-thorns starfish, coral disease outbreaks, and mass coral bleaching events. In addition, elevated loads of nutrients, sediments and pesticides in land-based run-off are likely to have further affected recovery periods in inshore areas. While coral reefs have a natural ability to recover from periodic disturbances, chronic pressures, such as rising sea temperatures and poor water quality, can compromise this ability.
4. The acute impacts of mass coral bleaching and cyclones, in particular the 2016 and 2017 mass bleaching events, and cyclones of greater severity, together with the declines in coral cover over the preceding 30 years, now threaten to overwhelm the capacity of existing management arrangements to support resilience. Consequently, there is a need for more active intervention in the Marine Park to protect and restore coral reef habitats.
5. The Authority recognises that climate change impacts many species and habitats within the Great Barrier Reef Marine Park. At this point in time, this policy is limited in scope to coral reef habitats; reflecting the dramatic declines that have happened in recent years. Over time the Authority is likely to include guidance on interventions to improve the resilience of other habitats and species, such as mangroves and seagrass.

# General principles

1. The Authority’s position is that coral reef habitat degradation is caused by the cumulative effects of a range of pressures, the most significant of which is climate change.
2. The Authority recognises that global action to reduce greenhouse gas emissions is a priority to protect the Great Barrier Reef. Nevertheless the Authority believes there are a range of activities that can enhance protection, reduce impacts and facilitate recovery in order to increase the resilience of coral reef habitats in the meantime.
3. The Authority seeks to continue working with its partners and stakeholders to reduce the impacts of climate change and increase resilience of coral reef habitats.
4. The Authority recognises that in order to be viable, some intervention activities will require association with commercial projects. Commercial projects are likely to attract higher assessment fees as well as additional assessment considerations (e.g. ability to adequately develop and fund the activity).
5. The Authority is unlikely to support the harvest of coral colonies (or coral fragments) for commercial or non-commercial purposes where that harvest is likely to cause localised depletion that may impact on future recruitment processes and/or lead to decreased ecosystem function.
6. The Authority encourages initial pilot studies to be small scale to demonstrate proof of concept and trial technological advancements that are scalable and staged appropriately to allow successful implementation with social acceptance.
7. The Authority is unlikely to permit high risk experimental trials on high value reefs or in areas with high connectivity to other reefs.
8. The Authority recognises that the commercial sale or trade of any coral harvested must be in accordance with the management arrangements for the coral harvest fishery.
9. The Authority is unlikely to support the conduct of a trial or pilot study (research program) in particular zones or locations if it involves the installation of structures that are intended to remain in the Marine Park post study, if those structures and/or intervention activities would not otherwise be permitted within the same zone and location.

| **For example**Converting a coral growing experiment or pilot study into an aquaculture operation is not supported in a Marine National Park Zone that prohibits aquaculture operations. |
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1. Generally, the Authority requires all structures, equipment and facilities to be removed prior to expiry of a permit (if the permit is not being continued). An application to install materials or structures that are intended to be permanently left in the Marine Park, i.e. become incorporated into the environment and not require further interference or maintenance, will be assessed on a case-by-case basis. Considerations include, but are not limited to, the aims of the project, the materials proposed, the public good nature of the proposal, likelihood of future impact to the environment if not removed, likely impacts of full or partial removal and expected timeframe for the materials/structures to be fully incorporated into the intended habitat.
2. The Authority understands that the purpose of some activities will be to support social or economic values of the Marine Park at a local scale, not necessarily contribute to reef-wide resilience of coral reef habitats.
3. The Authority supports reef intervention activities that are intended to improve the condition and resilience of coral reef habitats provided the risks associated with the activity (both long and short-term) can be avoided, mitigated or minimised as much as practical. This will be determined through an assessment process that is risk based in accordance with the [Authority’s Risk assessment procedure](http://elibrary.gbrmpa.gov.au/jspui/bitstream/11017/3231/1/Risk-Assessment-Permissions-System.pdf).
4. The Authority is likely to require a deed of agreement for all reef intervention projects that involve the installation of research equipment that may cause damage to Marine Park values if un-maintained, becomes un-attached or is not removed.
5. As part of the deed of agreement the Authority is likely to also require a bond (in the form of a bank guarantee, cash or undertaking) for projects that involve a permission to operate a facility. In addition, the decision to allow a facility to remain in the Marine Park at the conclusion of a pilot study/proof of concept study may require additional permits, including but not limited to a permit under the *Environmental Protection (Sea Dumping) Act 1981.*
6. Certain large-scale high-risk reef intervention projects may require referral to the Department of the Environment and Energy under the *Environment Protection and Biodiversity Conservation Act 1999* as they may have significant impacts on matters of national environmental significance.
7. The Authority may prioritise applications of those reef intervention activities that it believes are of most value to the Marine Park or that will address priority knowledge gaps (for example, as detailed in the Authority’s *Science Strategy and Information Needs 2014-2019* or other relevant documents).
8. The Authority strongly encourages all reef intervention activities to be conducted in partnership with research institutions and Traditional Owners.
9. With regards to types of reef intervention activities that have not previously been permitted in the Marine Park, the Authority’s preference is for these activities to be permitted only as research programs/pilot studies until the proof-of-concept has been determined successful, including the proposed activity’s benefit to the Marine Park, at either a local or broader scale.
10. For the purposes of permitting reef interventions, the Authority considers that reef intervention activities can be a subset of any of the following permission types focussed on the primary purpose:
	1. A research permission
	2. A tourism permission
	3. An aquaculture permission
	4. A facility or tourism facility permission
	5. Carrying out works
	6. Any other purpose
11. The Authority is unlikely to grant permissions for certain reef intervention activities, in certain locations, consistent with the precautionary principle and legislative documents such as the *Great Barrier Reef Marine Park Zoning Plan 2003* and the relevant Plans of Management.
	1. Introduction of foreign chemicals or minerals to encourage localised phytoplankton blooms;
	2. Introduction of natural or bioengineered pathogens as biological control agents (e.g. viruses);
	3. Use of material that is likely to introduce marine pests;
	4. Projects that may artificially increase endemic species to outbreak levels (e.g. *Drupella* spp.);
	5. Projects that increase risks to protected species;
	6. Medium risk projects that have no proof-of-concept;
	7. High risk projects that have not undergone an Authority approved Great Barrier Reef specific research pilot study;
	8. Reef intervention activities in the Marine National Park Zone unless those projects are directly associated with nearby tourism activities or meet the requirements for conduct of research in that zone;
	9. Reef intervention activities in the Preservation Zone;
	10. Commercial reef intervention projects that involve collecting coral from Public Appreciation Special Management Areas, Scientific Research Zone, Buffer Zone, Marine National Park Zone for the purposes of replanting elsewhere in the Marine Park.
12. The Authority supports Fisheries Queensland in that the collection of coral for commercial purposes is managed in accordance with the coral harvest fishery.
13. If considered appropriate by the Authority, intervention proposals of all risk levels may be implemented by the Managing Agencies under a Part 5.4 notice of the Zoning Plan. The types of activities that will generally fall within this category are those activities that the agency may, in the future, conduct itself or authorise the use of on a broader scale (e.g. able to be used by many tourism operators or local community groups).
14. Table 1 provides an indication of the assessment approach likely to be applied to particular activities noting that each application is considered individually on its merits and a Delegate has the final decision on whether to grant or refuse a permit.

Table 1: Types of reef intervention activities and their likely assessment approach (refer to the [application guidelines](http://elibrary.gbrmpa.gov.au/jspui/bitstream/11017/3226/1/Application-for-Joint-Permissions-Guideline.pdf)), based on risk. Risk is determined using the Authority's [risk assessment procedure for the permissions system](http://elibrary.gbrmpa.gov.au/jspui/bitstream/11017/3231/1/Risk-Assessment-Permissions-System.pdf).

| Activity type (general guidance only) | Likely assessment approach |
| --- | --- |
| **Low risk** Examples: small-scale removal of sediments and/or smothering algae from coral or bare rock surfaces; reorienting coral colonies and/or affixing broken coral fragments back onto the substrate after a disturbance such as a cyclone | Tailored assessment  |
| **Low risk** Example: taking fragments of coral from healthy colonies (limits apply- see [research guidelines](http://elibrary.gbrmpa.gov.au/jspui/bitstream/11017/3227/1/Managing-Research-in-the-GBRMP.pdf)) for direct [transplantation](http://www.gbrmpa.gov.au/__data/assets/pdf_file/0020/3980/gbrmpa_CoralTransplantationAtTourismSites_2004.pdf) within the same reef complex (i.e. no grow out step prior to planting) | No pilot study required. Tailored assessment  |
| **Medium risk** Examples: installation of research equipment such as coral racks or trees to support coral fragment and colony grow out; substrate stabilisation using racks/frames and other materials that are anticipated to be incorporated into the reef structure over time; coral growth enhancement using electrolysis (biorock)Low risk applications that are proposed within sensitive environments | Applicant to provide proof of concept or supporting rationale for likely success in the Marine Park.Pilot Study - Tailored assessment. Pilot study may require a deed of agreement. If pilot study found to be successful, then applicant may apply for a permit to conduct the activity as an intervention program, i.e. not as a research program. Depending on scale and risk involved, the operational application may require a Tailored or Public Information Package (PIP) assessment. This may require a deed/bond, public advertising and/or an Environmental Management Plan.  |
| **High risk**Examples: assisted gene flow, assisted evolution, synthetic biology, habitat engineering, large scale translocation of coral and the installation of large infrastructure facilities.Medium risk applications that are proposed within sensitive environments | Applicant to provide proof of concept and supporting rationale for likely success in the GBRMP. Pilot Study - Tailored assessment or Public Information Package. Pilot study may require a deed of agreement and a bond.If pilot study found to be successful then applicant may apply for a permit to conduct the activity as an intervention program, i.e. not as a research program. Depending on scale and risk involved, the operational application may require a Public Information Package (PIP), Public Environment Report (PER) or Environmental Impact Statement (EIS) assessment may be required. This may require a deed/bond, public advertising and/or an Environmental Management Plan. |
| **Very High risk** – risk too high to support in-water pilot study and Agency unlikely to support granting a permit. Examples: introduction of any species that is non-native, or originating from outside the Great Barrier Reef, employing the use of potentially toxic chemicals or introduction of natural or bioengineered pathogens, use of materials that may introduce marine pests or artificially increase endemic species to outbreak levels, increased risk to protected species.High risk applications that are proposed within sensitive environments | Very high risk applications without proof of concept in the Great Barrier Reef are unlikely to be approved because they have the potential to cause irreversible damage to the values of the Marine Park.  |

## Potential permit conditions

1. Permit conditions for reef intervention activities are likely to include:
	1. an associated monitoring and evaluation program to monitor the health of the reef in the area of the intervention, ensure there are no adverse impacts from the activity, and to enable assessment of the effectiveness of reef intervention activities
	2. regular reporting on the progress of the program as outlined in (a) above, and
	3. a deed of agreement with GBRMPA for data sharing and for making good the environment in the case of unintended impacts/harm. This may involve the lodgement of a bond/bank guarantee.

# Implementation

1. This Policy will take effect from the date it is approved.
2. The Authority will consider this policy in all relevant applications for permissions for reef intervention activities.
3. The Authority will develop supporting information to provide further clarity to applicants considering specific reef intervention activities. This is likely to include a checklist of information to accompany applications.

# Definitions

Aquaculture operation

Has the meaning as defined in the Great Barrier Reef Marine Park Zoning Plan 2003. In the context of reef interventions, this means the activity is primarily for commercial use.

Coral Nursery

A coral propagation activity done for the primary purpose of non-commercial coral reef conservation/restoration.

Facility

Has the meaning as defined in subsection 3(A)(9) of the *Great Barrier Reef Marine Park Act 1975.*

Reef interventions

An action or set of actions deliberately undertaken in order to change the health status (prevent decline, enhance recovery or restore degradation) of one or more species or coral reef habitat locations.

Sensitive environments

Sensitive environments are 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 dugong protection areas, fish spawning aggregation sites, seagrass beds, breeding areas, and diverse, rare or very old coral assemblages.

Tourist facility

Has the meaning as defined in subsection 3(A)(9) of the *Great Barrier Reef Marine Park Act 1975.*

# Further information

Refer to *Supporting Information for Interventions to Improve Resilience of Coral Reef Habitat in the Great Barrier Reef Marine Park Policy.*

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| Approved by: | **Not yet approved – draft for public consultation** | Approved date: | Click for date. |
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# Appendix 1. Related legislation / standards / policy

Legislation

[*Great Barrier Reef Marine Park Act 1975*](http://www.gbrmpa.gov.au/about-us/legislation-regulations-and-policies/legislation) (GBRMP Act)

[*Great Barrier Reef Marine Park Regulations 1983*](http://www.gbrmpa.gov.au/about-us/legislation-regulations-and-policies/legislation)(GBRMP Regulations)

[*Great Barrier Reef Marine Park Zoning Plan 2003*](http://www.gbrmpa.gov.au/__data/assets/pdf_file/0015/3390/GBRMPA-zoning-plan-2003.pdf)

[Whitsundays Area Plan of Management](http://www.gbrmpa.gov.au/visit-the-reef/plans-of-management/whitsunday-plan-of-management)

[Hinchinbrook Plan of Management](http://www.gbrmpa.gov.au/visit-the-reef/plans-of-management/hinchinbrook-plan-of-management)

[Cairns Area Plan of Management](http://www.gbrmpa.gov.au/visit-the-reef/plans-of-management/cairns-area-plan-of-management)

[*Environment Protection (Sea Dumping) Act 1981*](http://www.environment.gov.au/marine/marine-pollution/sea-dumping) regulates the loading and dumping of waste at sea. The Act fulfils Australia's international obligations under the 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*](http://www.imo.org/en/OurWork/Environment/LCLP/Publications/Documents/London_convention_UNEP_Low-res-Artificial%20Reefs.pdf)

[*Environment Protection and Biodiversity Conservation Act 1999*](http://www.gbrmpa.gov.au/about-us/legislation-regulations-and-policies/legislation) (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.

Policy documents

The following Authority documents, as updated from time to time, are relevant to this policy:

* 1. Policies: Environmental Impact Management – Permission System;
	2. Position Statements: [Translocation of species in the Marine Park](http://www.gbrmpa.gov.au/__data/assets/pdf_file/0006/3939/gbrmpa_TranslocationPositionStatement_2007.pdf); [aquaculture](http://www.gbrmpa.gov.au/__data/assets/pdf_file/0020/3890/gbrmpa_AquaculturePositionStatement_2002.pdf); no[-structures sub-zones](http://www.gbrmpa.gov.au/__data/assets/pdf_file/0016/3940/gbrmpa_NoStructuresSubZones_2006.pdf);
	3. Guidelines: Management of [artificial reefs](http://www.gbrmpa.gov.au/about-us/legislation-regulations-and-policies/policies-and-position-statements/guidelines-for-the-management-of-artificial-reefs-in-the-marine-park), [COTS control](http://www.gbrmpa.gov.au/__data/assets/pdf_file/0006/185298/COTS-control-guidelines.pdf), Managing scientific research; [coral transplantation at tourism sites](http://www.gbrmpa.gov.au/__data/assets/pdf_file/0020/3980/gbrmpa_CoralTransplantationAtTourismSites_2004.pdf); permission assessment and decision; applications for permission;