



Coral Transplantation at Tourism Sites

The Great Barrier Reef Marine Park Authority (GBRMPA) recognises that the condition of tourism sites is important to the experience of visitors and to the successful presentation of the Marine Park and its World Heritage values. From time to time there may be a need to shorten the natural recovery periods of coral reefs to support site-based tourism operations. In those instances, managed coral transplantation may be considered a reasonable activity, however, it is costly and time consuming and not a common practice in the Marine Park.

A permit is required from the GBRMPA to undertake coral transplantation in the Great Barrier Reef Marine Park. A General Fisheries Permit from the Queensland Department of Primary Industries and Fisheries is also required (information is available through the Department of Primary Industries and Fisheries Licencing on (07) 3225 1880). Prior to making an application for coral transplantation at a tourism site the original cause of the coral decline at the site needs to be established. If the impacts at the site are the result of site use or other manageable changes, then those matters should be addressed before transplantation is considered.

An application for coral transplantation at a tourism site should have regard to the nature and scale of the proposed transplantation, taking into consideration the following issues:

- The scale of transplantation at any site should be based on the balance of environmental impact. In a practical sense, the upper limit of transplantation is the scale at which the impacts of transplanting corals approaches the impacts of relocating the tourism operation in a well-managed fashion to an alternative site.
- The transplantation should not increase coral cover or species composition at the transplant site above that which is expected naturally in the area.
- Donor areas must have a sufficient healthy and diverse coral cover. Total coral collection impacts must be within the natural variability of the site and must not significantly reduce the donor area coral cover or species composition.
- Donor area collections should not affect reasonable use of the area by other reef users; public advertising of the application may be required to assess this.
- Collection of coral should occur within the same reef or reef complex.
- Collection of coral from donor areas which are remote to the transplant site should not occur unless credible scientific information is available that shows there is not a likelihood of the transfer of pathogens or genetic material that would not be expected under natural conditions.
- The coral transplantation must be based on the methodology outlined below.
- Monitoring of the success of the transplantation will be required.
- A pilot study may be required to confirm the suitability of the methods at the specific site, including survivorship of transplants, prior to progressing to the full scale project.



Planning

- Coral transplantation methods need to be based on proven scientific outcomes and carried out by people with relevant experience.
- Prior to considering coral transplantation, ensure that the transplant site is not subject to ongoing impacting processes, such as strong waves, shallow water snorkel areas, COTS infestation, or shading by structures or vessels.
- Conduct detailed mapping of donor areas to quantify the existing communities and to help assess the impact of removing the transplant coral. Record species, cover and size of colonies for transplantation. (Only proven transplantable species will be approved. Slow growing, rare or valuable species or colonies and species shown to not transplant successfully should not be included.)
- Ensure donor areas have a sufficient healthy and diverse coral cover. Total coral collection impacts must be within the natural variability of the area and must not significantly reduce the donor area coral cover or species composition.
- Assess the expected impact to the transplant sites in terms of species, coral cover and colony size.
- For the transplant site, identify and record the proposed species, numbers, sizes and placement of the individual colonies to be transplanted.
- Document a methodology, addressing careful removal, fragmentation, handling and attachment of corals, and describing how impacts to live tissue will be minimised.
- Identify the people who will do the transplantation ensuring they have skills in identification of corals, careful removal and handling of corals and attachments techniques. Ensure they have an understanding of coral ecology to detect matters such as aspect, shading, water currents and habitat selection. A husbandry approach is an important key to success.

Transplanting

- If fragmenting donor corals, ensure maximum use of whole colonies, that is divide one whole colony into parts rather than selecting parts from many colonies.
- Pay particular attention to attachment of the corals as attachment is the greatest single factor in the success of transplants, especially in the initial months. Concrete or chemical bonding is preferred. Temporary attachment such as cable ties and wire is not supported unless well-documented success can be demonstrated.
- Transplant all corals to the same depth, aspect, habitat, water flow, proximity to adjacent colonies and orientation as the site from which they were removed. Consider interactive impacts between adjacent colonies.
- Conduct transplantation at a time of low stress for the corals and so that there is sufficient time for the coral to establish prior to the occurrence of stressful events, such as storms and warmer water periods.

Monitoring

- Tag, photograph and otherwise easily and accurately identify each transplanted colony for the duration of the transplantation and at least 12 months following completion of the project.
- Carefully maintain the transplants. Revisit and reattach corals at least weekly in the first month and at least fortnightly in the next three months.
- Monitor and record the success of pilot transplants for at least six months including the summer (storm and warm water) season, prior to consideration of undertaking a full-scale program. Record at least survivorship, the need for re-attachment, colony growth and health.

For more information contact the **GBRMPA** on (07) 4750 0700
or email permitenquiry@gbmpa.gov.au