

GREAT BARRIER REEF FOUNDATION REEF RESTORATION FUND



Great Barrier
Reef Foundation

CONTEXT

Coral reefs, like the Great Barrier Reef, cannot adapt fast enough to warming ocean temperatures, which trigger mass bleaching events, making coral reefs the most vulnerable ecosystem on the planet. Alongside emissions reductions, we must urgently scale coral restoration efforts globally. There are no existing restoration initiatives on the planet delivering at the pace and scale required to safeguard coral reefs. But we can change this.

In the past five years, we have made more advances in coral reef restoration science than we have in the past five decades to prove we can plant corals with increased heat tolerances at scale. This technology is ready to come out of the labs and into the water.

This ambitious undertaking requires not only our best minds working in partnership across many organisations and fields of expertise, but importantly, the input and support of Traditional Owners, reef communities, industries and the wider Australian public.

THE CHALLENGE

Historically in water coral reef restoration activities have been delivered as standalone projects focused on a single technology solution and at a very small scale. However, our early pilots have demonstrated that:

- local communities, the tourism sector and Reef Traditional Owners, want holistic restoration solutions that best adapt to and integrate with their local situations and capabilities, and
- taking a whole-of-system approach is the key to replication and scale, required for an ecosystem the size of the Reef.

THE SOLUTION

Through the establishment of the Reef Restoration Fund, we will fund the scaling of locally led coral reef restoration in Australia – delivering holistic and whole-of-system impacts. The fund will focus on removing obstacles to scaling with a particular focus on capacity, technology and funding. The Fund will be built around the following components:

- **Technology transformation:** filling critical scientific knowledge gaps with a particular focus on automation of coral production facilities and design of guidance and monitoring systems for remote deployment of enhanced corals.
- **Corals for Today:** partnering with locally led restoration activities currently underway in key Reef centres (the Whitsundays, Cairns and Port Douglas) to build local capacity, prove and scale latest restoration tools, and foster a bridge between R&D and in-water restoration activities.
- **Corals for Tomorrow:** supporting the scaled deployment of corals with increased thermal tolerance via a network of portable micro-nurseries and fostering a cohort of Indigenous and tourism trainers, to support locally-led restoration in Australia. This component will also support the progression of sustainable financing pathways including marine biodiversity and blue carbon.



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The following projects have been selected as beneficiaries of the first two years of the Fund.

Boats4Corals

Boats4Corals is helping scale up reef restoration on the Reef by harnessing the power of local skills, vessels and passion. Researchers have developed an approach to safely and effectively bring many hands-on deck to deliver more coral babies to more reef areas. Local tourism operators and Traditional Owners are being trained in the Coral IVF method; from identification of spawning slicks, to releasing coral larvae from floating nursery pools onto the Reef.

The Fund will support further scaling of Boats4Corals into other key Reef locations.

Coral Nurture Program

The Coral Nurture Program is a unique partnership between Researchers and Tour Operators to develop novel “stewardship” based management of economically high value Great Barrier Reef locations, with the goal to transform both ecological and social resilience to environmental change. At its core, this program is about collecting, propagating, growing and planting coral, to replenish reef sites and enhance the reef’s resilience.

The Fund will strengthen tourism research partners in the Cairns region, and focus on novel coral fragmentation planting methods at high value reef sites. Operators and scientists will work together to optimise planting methods and decrease unit costs to build more scalable approaches, supporting the transition to a sustainable model after 3 years.

Reef Restoration Adaptation Program (RRAP)

RRAP is creating new solutions that will help coral reefs resist, adapt to, and recover from warming ocean temperatures. RRAP is a consortium of leading Australian research institutes, universities, and Traditional Owners contributing in-depth knowledge to help protect the Reef and share this knowledge with the world. It is the largest collective and integrated effort in the world - since launching in 2020, our team of experts is 350+ strong, including Biologists, Data Scientists, Ecologists, Engineers, Geographers, Mathematicians, Project Managers, and Social Scientists.

The Fund will support technology transformation to accelerate delivery, increase volume and impact while reducing cost, making coral reef restoration and adaptation an inherently sustainable and scalable activity. Focus areas include the design of rugged and semi-automated AI-based monitoring platforms as well as automated coral reproduction, propagation and deployment systems. This will enable uptake of these new technologies by a broad range of industry, community and Traditional Owner groups.

Reef Seed

Reef Seed, an initiative of the Australian Institute of Marine Science, are portable coral aquaculture facilities housed in shipping containers. Underpinned by the most advanced science, modular in design and scalable by nature, each container can grow and plant 100,000 corals annually. These portable, rugged and scalable facilities are perfectly suited to isolated and harsh conditions.

The Fund will support the engagement of Traditional Owners and Tourism operators in the first container on the Great Barrier Reef.