2018 YEAR IN REVIEW

IYOR 2018
INTERNATIONAL YEAR OF THE REEF

Great Barrier Reef Foundation

The Great Barrier Reef Foundation acknowledges both the Turrbul people and the Yugara (Jagera) people and their Elders, past, present and emerging, as the custodians for the land and waters upon which the Brisbane office stands. We extend our deepest respect and recognition to all of the Traditional Owners of the Great Barrier Reef as First Nations Peoples holding the hopes, dreams, traditions and cultures of the Reef.

2018 YEAR IN REVIEW

OUR MISSION

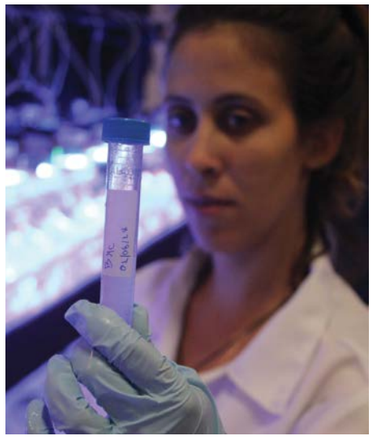
We bring together the best minds and technologies to help solve the challenges facing the *Great Barrier Reef.* And we challenge everyone—from the boardroom to the beach—to stand up, unite, and take an active part in its conservation.

CONTENTS

Photography: Gary Cranitch, Queensland Museum

OUR STORY

This is our manifesto – a call to action for everyone to do all they can for one of the seven wonders of the natural world.



RIGHT NOW.
Over six hundred species of coral rely on our Great Barrier Reef — one of the planet's richest ocean habitats.

RIGHT NOW.
Our Reef sustains 3000 species of mollusc, more than 1600 species of fish, and six of the seven species of marine turtles.

And that's just underwater.

RIGHT NOW.
On land, sea, and sky, it supports a vast array of flora and fauna, it provides over 64,000 jobs in Australia and delights millions from across the globe who visit this natural wonder.

But, **RIGHT NOW.**
Right here on our shores, climate change and increasing environmental threats are putting the future of this irreplaceable ecosystem at risk, making it the challenge of our age.

So that's where we — everyone at the Great Barrier Reef Foundation — are **RIGHT NOW.**
on the beach, in the water, in the boardroom, and in the lab. Bringing together the world's best minds and technologies — scientists, researchers, engineers, traditional owners, investors, innovators, creative-thinkers.

And you.

Because every action we each make **RIGHT NOW.**
from the smallest donation to the loudest stand, is exactly what the Reef needs to survive for generations to come.

INTERNATIONAL YEAR OF THE REEF

"I just cannot bear the idea that future generations may not experience a coral reef. The mission is to start solving the problem, not just to study it.

Vale, Dr Ruth Gates
1962–2018

In 2018 – the International Year of the Reef – the spotlight was truly on the Great Barrier Reef, for all its awe-inspiring wonder as much as for the imminent challenges threatening its future.

The realisation that we are rapidly running out of time to save this natural wonder, and indeed the world's coral reefs, was highlighted by the Intergovernmental Panel on Climate Change (IPCC) Report declaring the loss of the world's coral reefs by 2050 if we do not meet the Paris Agreement targets. Through our projects, our people and our partners, we stepped up to ensure that 2018 was a year that mattered for the Reef.

Signature projects launched

This year we launched two new signature projects and an innovation challenge, separate to the new Reef Trust Partnership with the Australian Government's Reef Trust.

The first, **Resilient Reefs**, is a global coral reefs leadership initiative spanning five World-Heritage listed coral reef sites – Australia's Great Barrier Reef and Ningaloo Coast, Palau's Rock Islands, Lagoons of New Caledonia and the Belize Barrier Reef – to build their resilience in the face of climate change. Working with our partners the BHP Foundation, UNESCO World Heritage Centre, 100 Resilient Cities—Pioneered by The Rockefeller Foundation, and The Nature Conservancy's Reef Resilience Network, this marks a world first – bringing together local communities, reef managers and resilience experts to develop new solutions for combating the effects of climate change.

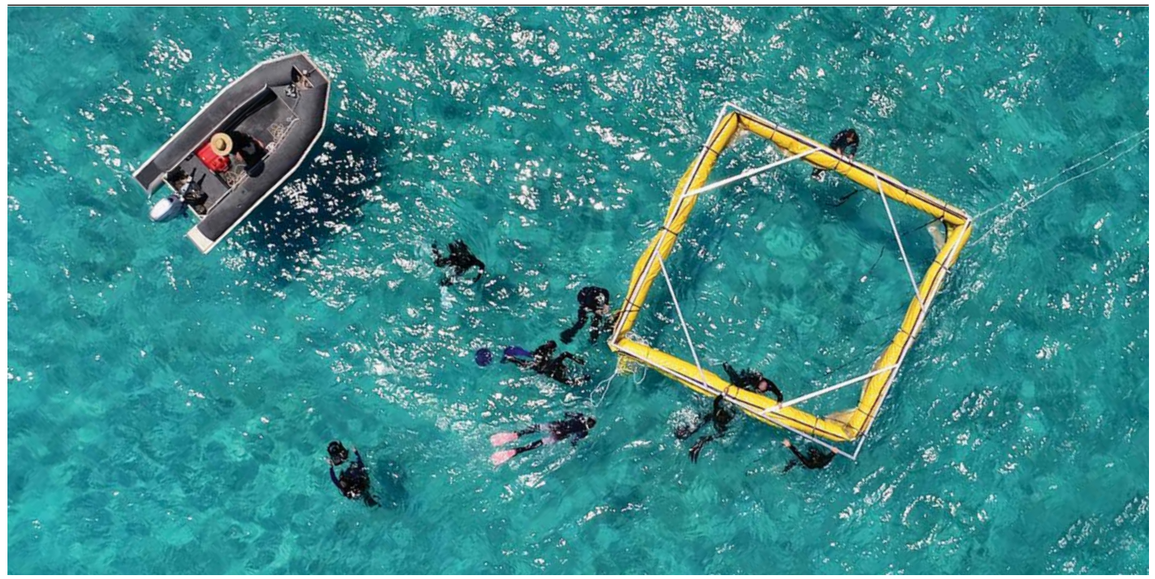
The second is the **Reef Islands Initiative** which is building on the success of the Raine Island Recovery Project – the public / private partnership working to protect and restore the world's largest green turtle rookery and ecosystem on Raine Island. The project is applying that approach to other priority islands on the Great Barrier Reef to build the resilience of these precious land and sea scapes in the face of climate change – essentially creating a series of modern day 'arks'. During the year, on-ground restoration and conservation work commenced on the first island refuge, Lady Elliot Island, known for its amazing array of seabirds, turtles, manta rays, dolphins, sharks and coral reefs. We look forward to supporting more island ecosystems in the future with our project funding partners Lendlease, the Australian and Queensland Governments, and the Fitzgerald Family Foundation.

In 2018, we launched a global search for new ideas and approaches to reef recovery in partnership with The Tiffany & Co. Foundation. The **Out of the Blue Box Reef Innovation Challenge** produced some exciting new concepts and we look forward to reporting the progress of the winning projects – scaling up coral IVF (larval reseeding techniques) and using robotic technology to deliver new life to the reef (dubbed LarvalBot), and probiotics for coral.

Other initiatives

Innovation is also at the heart of the **Reef Restoration and Adaptation Program** announced in January, a partnership to explore novel technologies to assist recovery, repair and build resilience of the Reef through Australia's leading reef research and management organisations.

In April the Foundation, in partnership with the Prince's Trust Australia, hosted a **Leadership Roundtable with His Royal Highness the Prince of Wales** on Lady Elliot Island. Twenty-two leaders across policy, conservation, industry and science shared insights of obstacles and opportunities for coral reefs and unanimously agreedeveryone must do more and do better for the sake of future generations.



Reef Trust Partnership

This year, the Australian Government announced the largest single grant for the Great Barrier Reef's protection in the country's history. An investment of $443.3 million to be managed through the Foundation was a funding step change for Reef health. The Reef Trust Partnership delivers sustained and strategic funding for longer term Reef protection efforts across the critical issues of improving water quality and crown-of-thorns starfish control, harnessing the best science to restore reefs and support reef resilience and adaptation, enhancing Reef health monitoring and reporting, and increasing community and Traditional Owner engagement in Reef protection. It creates a new era of collaboration and partnerships – empowering us all to work together to boost the resilience and health of the Great Barrier Reef.

Through the partnership, we are leading the collaboration of science, business, government, industry, philanthropy and community to amplify the impact of this investment.Ten strategic plans were delivered in 2018, including our strategy to leverage the government grant by raising a further $300M – $400M through Australia's largest environmental fundraising campaign.

In late 2018, we announced the first funding program under the Reef Trust Partnership, with up to $20 million available for projects to improve water quality on the Reef. In early 2019, 11 projects with a proven track record of water quality improvement across regional Queensland were awarded grants totalling over $19 million and commenced work.

Looking ahead

Early 2019 also saw 43 community and Traditional Owner Reef protection projects awarded $3.2 million in funding to contribute to improving Reef health. We look forward to seeing these projects progress in 2019 and beyond.

Detailed 2019-2020 Reef Trust Partnership work plans will be published in July 2019, setting the strategy for investment and implementation for the year ahead.

Separate to the Reef Trust Partnership program, we will continue to work with our broad network of partners on implementing projects such as the Raine Island Recovery Project, Reef Islands, Resilient Reefs and others, and look forward to sharing their progress.

Thanks

So many people contributed to our endeavours in 2018. Sitting on the Foundation's Board and committees are a distinguished group of Australians, each so deeply passionate about this cause that they generously give their time, skills and networks, and we are grateful for their steady support and advice. We are fortunate to have a world class team of staff for whom working at the Foundation is a labour of love and who go above and beyond because they passionately believe in this cause. Our research partners are global leaders and we are honoured to be enabling the work of the brightest minds at James Cook University, Queensland University of Technology, University of Hawaii, Australian Institute of Marine Science, Bureau of Meteorology, CSIRO, Queensland's Department of Environment and Science, and Taronga Zoo this year.

Our achievements in 2018 are a tribute to our many supporters and donors who are taking an active part in conserving the world's greatest coral reef. Your support humbles and inspires us all.

Thank you.

TWO DECADES OF IMPACT

Since 1999, the Great Barrier Reef Foundation has had a proven track record of working with partners to develop projects vital to securing the viability of coral reefs on our planet. Our work has helped understanding of the Reef's condition and its threats, bolstered its resilience, and developed the tools and knowledge needed to protect it into the future.

SAVING TURTLES.

Restoring the world's largest green turtle rookery on remote Raine Island.

RANGER BOT.

An autonomous underwater drone to control coral-destroying crown-of-thorns starfish and check Reef health.

CORAL IVF.

Regenerating damaged reef areas with new coral larvae at unprecedented scale.

SUN SHIELD.

A biopolymer film, one molecule thick, might be a solution to combat local coral bleaching.

REAL TIME DATA.

Developing the tools to monitor Reef health and conditions in real time.

EARLY ALARM.

Detecting stressed corals before they bleach.

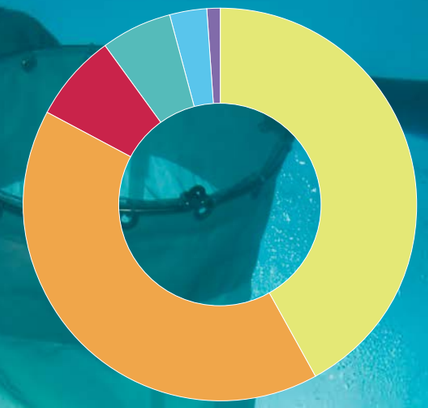
GENE POOL.

Cracking the genetic code of coral.

CLIMATE IMPACTS.

Enabling the world's first integrated project portfolio to tackle the impacts of a changing climate on coral reefs.

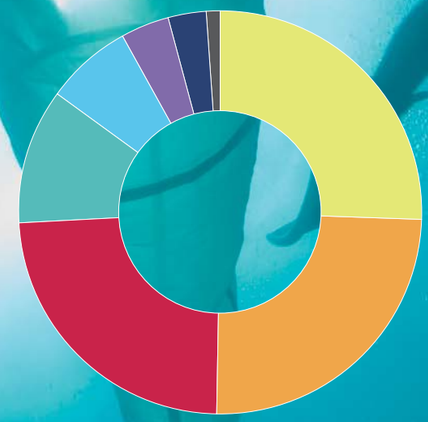
WHERE OUR FUNDS CAME FROM – 2018 REVENUE



- **42%** Corporate Partners
- **41%** Australian Government
- **7%** Queensland Government
- **6%** Donations & Community
- **3%** Pro Bono Partners
- **1%** Other

Source: Great Barrier Reef Foundation Annual Report, Statement of profit or loss and comprehensive revenue for the year ended 31 December 2018

PROJECT INVESTMENTS IN 2018



- **26%** Resilient Reefs - Global Coral Reefs Project
- **25%** eReefs Project - Reef Monitoring Platform
- **24%** Raine Island Recovery Project
- **11%** Reef Islands Initiative
- **7%** Innovation Fund - including Out of the Blue Box Reef Innovation Challenge
- **4%** Future Reef - Ocean Acidification Project
- **3%** Junior Ranger Education Program
- **1%** Other Reef Projects

The Foundation's 2018 Annual Report including audited financial statements is available on the website: barrierreef.org/latest/publications

* Excludes Reef Trust Partnership

WORLD FIRST
GLOBAL CORAL REEFS INITIATIVE

Resilient Reefs

2018 saw the launch of our world first project giving five World Heritage listed coral reef sites their best chance of survival by building resilience in the face of climate change.

The Great Barrier Reef, Ningaloo Coast, Palau's Rock Islands, Lagoons of New Caledonia and the Belize Barrier Reef are part of this truly global initiative.

For the first time, Resilient Reefs is bringing together local communities, reef managers, and resilience experts to develop new solutions for combating the effects of climate change.

This is a bold, new approach that puts people at the centre and embraces learning from global resilience practice to innovate, build capacity and drive a whole-of-community approach to the challenges facing our treasured coral reefs.

The project is empowering long term resilience planning, capacity building and implementation in the five pilot sites. This includes creating and training for a new leadership role — Chief Resilience Officer — in the local reef management authority.

Enabling this innovative approach are our project collaborators the BHP Foundation, UNESCO World Heritage Centre, 100 Resilient Cities—Pioneered by The Rockefeller Foundation, and The Nature Conservancy's Reef Resilience Network and AECOM as implementation partner.

Reef resilience is the capacity of reef ecosystems and the individuals, businesses and communities that depend upon them to survive, adapt and recover from the stresses and shocks that they experience.

> *We have seen how resilience thinking is positioning cities around the world to survive and thrive in the face of challenges such as climate change. We are thrilled to take this next step and partner with the Great Barrier Reef Foundation to apply the 100 Resilient Cities model to coral reef communities.*

Sam Carter, 100 Resilient Cities
Pioneered by the Rockefeller Foundation

UNESCO's World Heritage Marine Program Head, Dr Fanny Douvere launched Resilient Reefs at Our Ocean 2018

CREATING CLIMATE CHANGE REFUGES

Reef Islands Initiative

This initiative builds on the success of another Foundation project – the Raine Island Recovery Project – that's working to protect and restore the world's largest green turtle rookery and its ecosystem. The Reef Islands Initiative is applying that approach to other priority islands on the Great Barrier Reef to build the resilience of these precious land and sea scapes in the face of climate change – essentially creating a series of modern day 'arks'.

During the year, on-ground restoration and conservation work began on the first island refuge announced as part of the initiative, Lady Elliot Island, known for its amazing array of seabirds, turtles, manta rays, dolphins, sharks and coral reefs. The revegetation component of the project was designed specifically to build on and accelerate existing efforts to rid the island of introduced, invasive plants and replace them with native species.

Lady Elliot Island is the first of the planned network of climate change refuges to be established on Great Barrier Reef islands through the Foundation's $14 million, 10-year program that brings together funding partners Lendlease, the Australian and Queensland Governments, and the Fitzgerald Family Foundation with the Great Barrier Reef Marine Park Authority, Queensland Parks and Wildlife Service, island-based businesses and communities, and research and science agencies in implementing the on-ground programs.

Progress in 2018 included:

1.25
hectares total area revegetated

500
invasive trees removed

60%
increase in nursery stocking capacity

Over 900
nursery-grown native seedlings planted

Over 2,600
nursery-grown pisonia cuttings ready to be planted out

REEF ROYALTY AT ROUNDTABLE FORUM

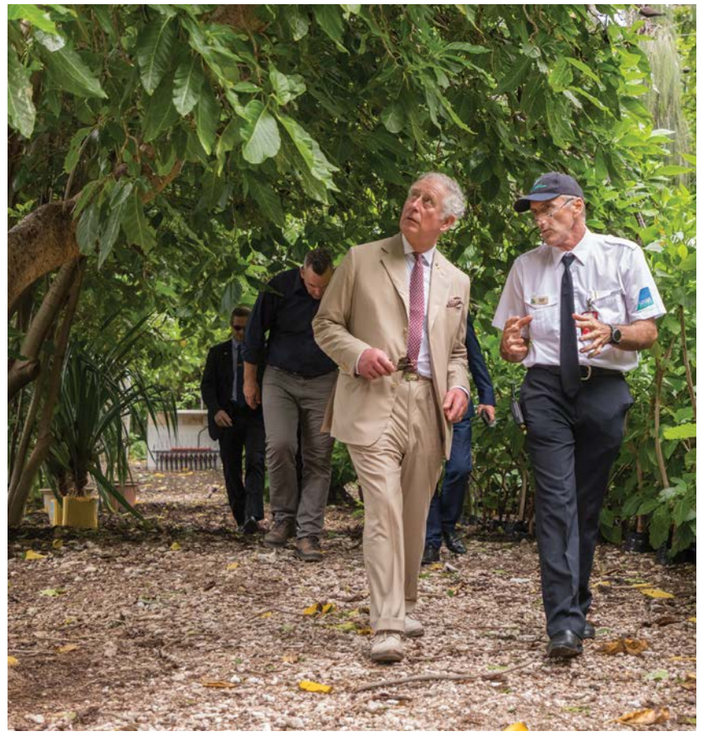
His Royal Highness The Prince of Wales visited the Great Barrier Reef in April to learn firsthand how Australian corporate and government leaders are rallying to address the threats facing coral reefs.

The Prince joined the Reef Roundtable hosted by The Prince's Trust Australia and the Great Barrier Reef Foundation at Lady Elliot Island, meeting leaders from the technology, resources, energy, and property and infrastructure sectors as well as government and not for profit groups.

A key focus of discussions was the successful collaboration of companies and government, working together to build the resilience of the Great Barrier Reef to a changing climate, and learning about the projects that are having an impact.

Organisations attending included Lendlease, BHP, Qantas, Boeing, Australia Post, The Star Entertainment Group, The Walt Disney Company, Affirmative Investment Management, Virgin Australia, Australian Institute of Marine Science, Great Barrier Reef Marine Park Authority, University of Queensland, World Wildlife Fund (WWF) International, Greening Australia, Greenfleet Australia, Australia Zoo, Citizens of the Great Barrier Reef, The Prior Family Foundation, The Prince's Accounting for Sustainability Project, Australian Government and Queensland Government.

Dr Russell Reichelt, former GBRMPA Chair and CEO, HRH The Prince of Wales, Foundation's Anna Marsden and Michelle Walter from Qantas



Lady Elliot Island's Peter Gash shows HRH The Prince of Wales the island nursery and revegetation progress

SAVING ENDANGERED SPECIES

Remote Raine Island is one of the most highly protected areas in the entire 348,000 square kilometres of the Great Barrier Reef World Heritage Area. For good reason...

Raine Island Recovery Project

Raine Island is the largest remaining green turtle rookery in the world – the focal point for one of the greatest animal migrations on the planet. As many as 20,000 green turtles can attempt to nest there in a single night in peak seasons.

It's also the Reef's most important seabird nesting area, with 84 bird species recorded there. The 27-hectare island sanctuary, 620 km north west of Cairns, has been a significant cultural and story place for the Wuthathi and Kemerkemer Meriam Nation (Ugar, Mer, Erub) Traditional Owners for over 60,000 years.

But research and monitoring over the last 30 years shows the northern Great Barrier Reef green turtle population is declining and Raine Island has been failing as a turtle rookery since the late 1990s. Shallow and dry sand, flooded nests and unsuitable nesting substrate are some of the issues identified.

That's why the Raine Island Recovery Project – a 5 year, $7.95M collaboration between BHP, the Queensland Government, Great Barrier Reef Marine Park Authority, Wuthathi and Kemerkemer Meriam Nation (Ugar, Mer, Erub) Traditional Owners and the Foundation – is restoring and maintaining Raine Island as a successful nursery for endangered green turtles and seabirds to breed and thrive along with other dependent species.

2018 PROJECT HIGHLIGHTS

Traditional knowledge

Raine Island's Traditional Owners are connecting with and caring for Country, participating in every project field trip in 2018.

Tracking turtles

21 adult female green turtles were fitted with high tech satellite tracking devices to reveal details of their nesting patterns and migration to feeding grounds – often thousands of kilometres away. James Cook University researchers are closely monitoring the turtles whose tracks can also be viewed on seaturtle.org

Preventing turtle deaths

The team installed 250 m of fencing to prevent adult turtles from deathly cliff falls – bringing the total amount of fencing on the island to 1.75 km. In the nesting season from late 2018, just one cliff fall death was recorded. The project team was also on site to rescue stranded turtles and return them to the ocean, ensuring they can nest again and produce more turtle hatchlings.

Building up the turtle 'nursery'

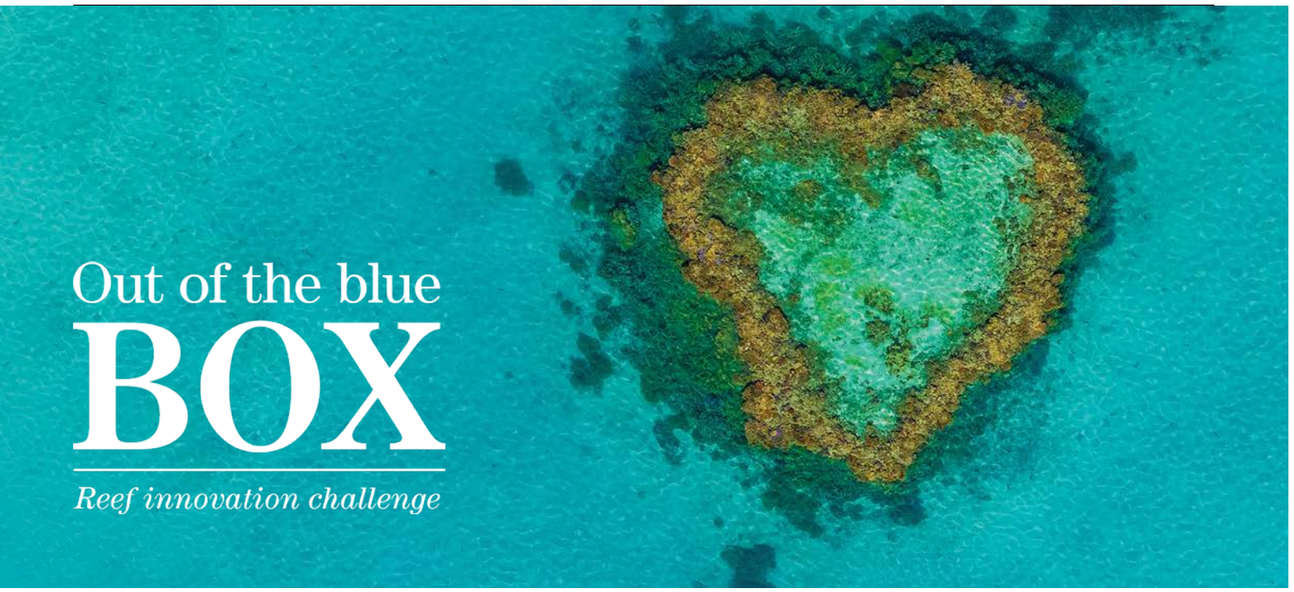
After repositioning 15,000 cubic metres of sand in 2017 to give turtles and their eggs the best chance of survival, in 2018 the re-profiled areas showed signs of greater nesting success than the unchanged beaches.

Studying nests

Throughout the year, University of Queensland researchers took a deeper look inside the turtles' nests to see how this environment affects whether eggs hatch successfully. The clues they find in the oxygen and carbon dioxide levels, temperature, water content, salinity and microbial load will inform the project team's next steps.

Endangered birds tracked

In 2018, 24 endangered adult Herald petrels were recorded on the island. Geolocators placed on 18 will reveal insights into their movements over 12 months when they're removed in 2019. Researchers were also encouraged to see the nesting boxes they installed being used for the first time in 2018 by threatened Red-tailed tropicbirds.

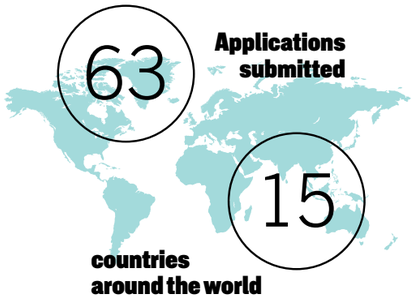


Out of the blue BOX

Reef innovation challenge

INNOVATION CHALLENGE

With business as usual approaches no longer enough, the Foundation issued a global call for new ideas to bolster the Great Barrier Reef's future resilience. With the support of longstanding worldwide coral conservation supporter The Tiffany & Co. Foundation, the Out of the Blue Box Reef Innovation Challenge called for innovations in finance, technology and social science to ease pressures on the Reef and allow it to recover.



THE WINNING CONCEPT

Coral IVF and LarvalBot

An idea to match-make coral on a grand scale and deliver new coral 'babies' onto the Reef using robotic technology won the 2018 challenge and secured $300,000 to bring the idea to life.

Just six weeks after winning the Challenge, Southern Cross University's Professor Peter Harrison and QUT's Professor Matthew Dunbabin trialled the ground-breaking initiative on the Great Barrier Reef near Cairns during the annual mass coral spawning event in November.

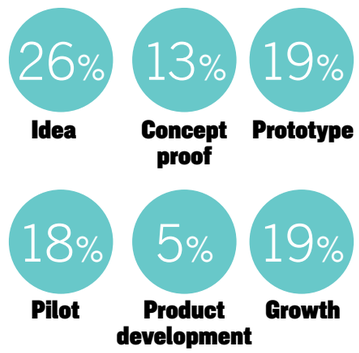
The winning proposal combines and builds on two previous innovations piloted through the Foundation – Professor Harrison's 'larval reseeding' technique and Professor Dunbabin's pioneering reef protector RangerBot that was engineered into LarvalBot specifically for this coral restoration initiative.

Scientists captured millions of coral spawn from the corals that survived the recent mass coral bleachings, and reared them into 'baby corals' in mass quantities inside large floating enclosures.

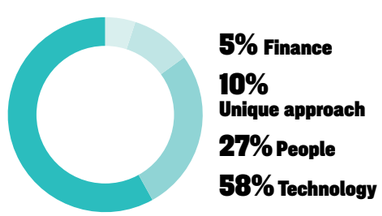
LarvalBot then played 'stork', delivering some of the tiny baby coral larvae out onto reefs.

Following this initial trial in 2018, the researchers plan to fully implement their challenge-winning proposal in 2019, building even larger mega spawn-catchers and solar powered floating larval incubation pools designed to rear hundreds of millions of genetically diverse, heat-tolerant coral larvae to be settled on damaged reefs through a combination of larval clouds and LarvalBots.

Stage of Development



Challenge Split



> *"Winning the GBRF's Reef Innovation Challenge meant that we could increase the scale of the work planned for this year using mega-sized spawn catchers and fast track an initial trial of LarvalBot as a novel method of dispersing the coral larvae out on to the Reef.*
>
> Professor Peter Harrison, Southern Cross University

PEOPLE'S CHOICE WINNER

Coral Probiotics

A dose of good bacteria could prevent Great Barrier Reef corals from bleaching, with an innovative project winning $150,000 to fund the research.

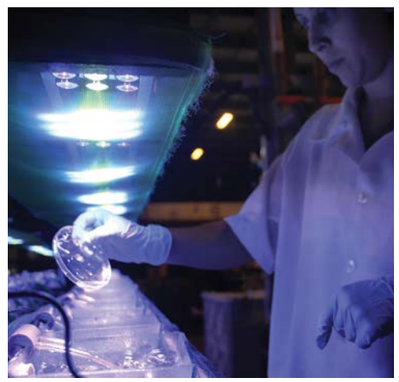
Brazilian scientist Professor Raquel Peixoto's coral probiotics idea secured the most public votes to win the People's Choice Award.

The idea of giving probiotics to corals to improve their health is like people taking probiotic yoghurts full of good bacteria to counter the negative effects of antibiotics when treating an infection.

This project is giving corals the specific beneficial bacteria they need to boost their resilience in times of stress and help them cope with environmental changes.

Lab testing by the Federal University of Rio de Janeiro researcher has already shown promise for the probiotics preventing bleaching in heat-stressed corals in an aquarium environment. With the new funding, Professor Peixoto and her team will be able to accelerate the research and investigate new ways to scale up the application for use on coral reefs.

Support of the Innovation Challenge was made possible through a grant to The University of Queensland in America Inc.



REEF TRUST PARTNERSHIP

Through a landmark Commonwealth grant of $443.3 million – the largest single grant to the Reef in Australia's history – the Foundation formed a six-year partnership with the Australian Government's Reef Trust to improve the health of the Great Barrier Reef and deliver on the goals of the Reef 2050 Long-Term Sustainability Plan (Reef 2050 Plan).

The principal objective of the Partnership is to achieve significant improvement in the health of the Great Barrier Reef World Heritage Area.

DELIVERED IN 2018

10

10 plans
outlining the framework, governance and strategic focus of the six-year partnership:

1. Investment Strategy
2. Collaborative Investment Strategy
3. Communication and Engagement Plan
4. Monitoring and Evaluation Plan (Stage 1)
5. Governance Arrangements including Partnership Management Committee
6. Investment Strategy Annual Work Plan Consultation Plan
7. Activity Gantt Chart 2018/2019
8. Risk Management Plan
9. Fraud Prevention Plan
10. Resourcing Plan

20

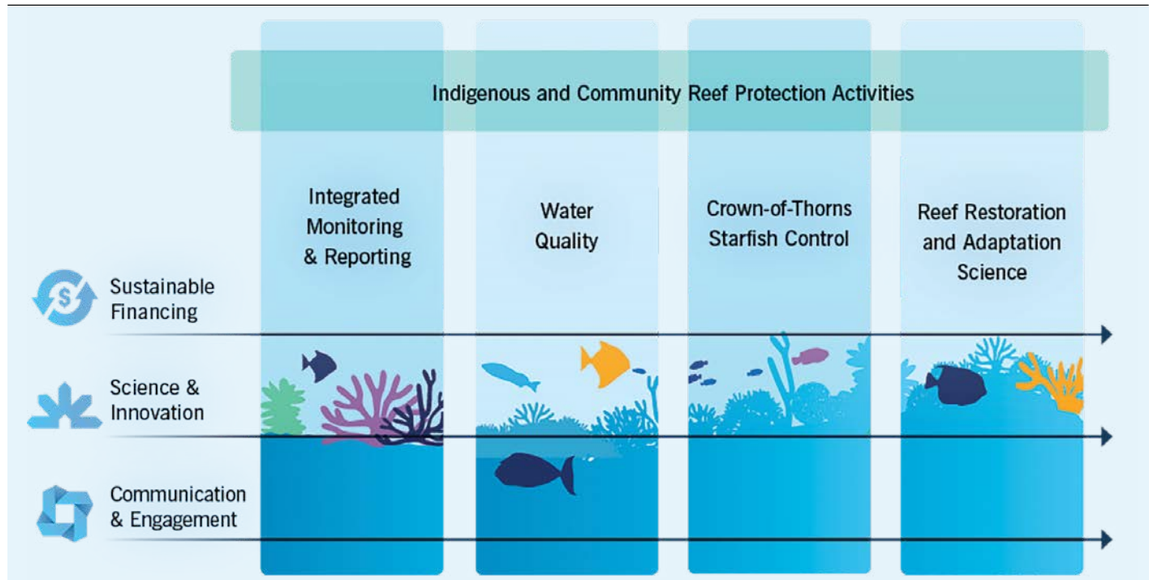
Up to $20 million
in grants announced to improve water quality on the Great Barrier Reef

$

$700,000 funding
announced for the first round of community Reef protection grants to support citizen science Reef monitoring projects

Partnership Management Committee appointed
comprised of science, research, marine and project management experts who are charged with overseeing the investment and tracking progress over the six-year program

Traditional Owner Working Group formed
for the Reef Trust Partnership



The Reef Trust Partnership portfolio has cross-cutting themes

Investment Strategy

The Investment Strategy provides a road map for investing in five areas to improve Reef health:

1. Water Quality

Improve water quality through changed farming practices such as reduced fertiliser use and adopting new technologies and land management practices.

2. Reef Restoration and Adaptation Science

Harnessing the best science to implement reef restoration and support Reef resilience and adaptation.

3. Crown-of-thorns Starfish Control

Expand the fight against the coral-eating crown-of-thorns starfish.

4. Integrated Monitoring and Reporting

Enhance Reef health monitoring and reporting to track progress and inform better management.

5. Traditional Owner and Community Reef Protection

Support Indigenous and community Reef protection activities to increase Traditional Owner and broader community engagement on the Reef, including Indigenous sea country management, coastal clean-up days and awareness raising activities.

The whole is greater than the sum of its parts

Bringing five important components together into one portfolio means the portfolio is being designed and delivered in an integrated way, maximising the co-benefits and providing efficiency dividends as outcomes from one component can inform and strengthen the outcomes of others.

Traditional Owner investment

Through the Investment Strategy, the Foundation is delivering the largest single investment for Traditional Owner Reef protection with $42 million, or 10% of the total Partnership funding, allocated to Reef activities with Traditional Owners to build on and scale up the work already being done by more than 200 Indigenous Rangers and 70 Sea Country groups within the Reef catchment.

Biggest environmental fundraising campaign

In October, the Foundation announced the nation's biggest environmental fundraising campaign to grow the record government investment in the Reef Trust Partnership by an additional $300 million to $400 million with the Collaborative Investment Strategy outlining the overarching fundraising plan across the six-year partnership.

REAL TIME MONITORING

eReefs' Eureka moment

The online 'toolkit' that monitors Reef health and conditions in real time – for the entire Great Barrier Reef from land catchments and rivers to ocean – achieved finalist status in the 2018 Eureka Awards, affectionately known as the Oscars of Australian science.

More than six years in the making, eReefs is like a diagnostic tool for the 'doctors' of the Reef. It combines and links complex global marine and weather models and real-time satellite images, and transforms these into visualisation, reporting and decision support tools for the Reef – tools that can understand and even predict things like the location of potentially damaging heat waves that can cause coral bleaching; the path of cyclones and how they mix the water; the ocean currents that disperse larvae of corals and crown-of-thorns starfish; and track the fresh water plumes from flooded rivers that can damage inshore reefs.

eReefs is used by the Queensland and Australian Governments to develop the official Great Barrier Reef Report Card. The breakthrough technology was made possible through a wide scale collaboration between the Foundation and the Bureau of Meteorology, CSIRO, Australian Institute of Marine Science, Queensland Government, Australian Government and BHP Billiton Mitsubishi Alliance.

Next gen enhancements

In 2018, the eReefs system was significantly enhanced with:

- Next generation water quality model delivering an improved water quality metric for the Reef 2050 Plan Report Card;
- High resolution river flow and water quality models achieving integration with marine models; and
- New generation Sentinel satellites used to improve real-time Reef condition understanding and modelling.

MEET OUR CHIEF SCIENTIST

"There has never been a more important or exciting time to contribute to managing the Great Barrier Reef. The science is clear that healthy reefs need serious action both at the local scale as well as in coordinated and ambitious climate policy.

Professor Peter Mumby, international marine and coral reef expert and head of The University of Queensland's Marine Spatial Ecology Lab, was appointed GBRF Chief Scientist in July.

OTHER HIGHLIGHTS

Innovation to combat coral killers with chemistry

A novel approach using chemistry to attract coral-destroying crown-of-thorns starfish (COTS) is being developed by researchers at the University of Queensland, following the creation of the GBRF Innovation Fund in 2018 with founding partner Orica.

The project is tackling a key threat to coral reefs by combining chemistry, genomics and other areas of science to develop the underwater equivalent of fly paper to lure the coral-killing starfish with species-specific attracters so they can be captured and removed. Although COTS occur naturally on the Great Barrier Reef and are an important part of the ecosystem in normal numbers, in outbreak proportions they pose a deadly risk to coral survival. This project is the first to be funded through the Innovation Fund which aims to fast-track novel solutions that address the key challenges facing the Reef.

Scoping novel ways to restore the Reef

Novel technologies to assist recovery, repair and build resilience of the Reef are being explored by Australia's leading research organisations through the Reef Restoration and Adaptation Program feasibility announced in January. The program is a collaboration between the Australian Institute of Marine Science, CSIRO, Great Barrier Reef Marine Park Authority, Great Barrier Reef Foundation, James Cook University, The University of Queensland and the Queensland University of Technology.

The Junior Rangers Turtle Camp and Pormpuraaw rangers brought together 18 students from Pormpuraaw Primary School for a range of on-country activities incorporating both Indigenous and western science knowledge

Junior ranger camps

Junior ranger activities within Queensland's Indigenous Land and Sea Ranger Program groups are being improved and grown with the support of a specialist Junior Ranger Coordinator appointed with funding from our partner Boeing.

Reef stamp series

To mark the International Year of the Reef, Australia Post collaborated with the Foundation to release an educational Great Barrier Reef stamp series of five stamps featuring threatened marine creatures.

Community education and engagement

With the support of our partners including the Queensland Government, Queensland University of Technology and Tourism and Events Queensland, the Foundation took interactive Reef experiences out into the community in 2018 to educate people about the wonders of the Great Barrier Reef, the threats facing it, and the research and projects underway to protect it.

In 2018, we were at

- World Science Festival Brisbane – March
- Commonwealth Games Gold Coast – April
- Royal Queensland Show (The Ekka) – August

Pilot projects soar

Innovative projects piloted by the Foundation successfully applied for funding from other sources in 2018 to continue their important research.

- *Sun shield for the Reef*

A 'sun shield' made from an ultra-thin, biodegradable surface film that shows promise in protecting corals from bleaching received new Queensland Government funding to continue the research.

- *Coral babies providing hope for new Reef growth*

The pioneering larval reseeding ('coral IVF') technique to conceive and settle coral larvae (babies) directly on to reefs was piloted for the first time on the Great Barrier Reef in 2016 through the Foundation's support of the groundbreaking work of Southern Cross University's Professor Peter Harrison. The project continued in 2017 with support from both the Foundation and the Australian Government.

In 2018, the project expanded further with funding from the Australian and Queensland governments and support from other science and community collaborators.

- *3D mapping*

The University of Queensland's project to develop a new way of mapping reef habitats in unprecedented 3D detail was trialled on a section of the Reef with funding through the Foundation. With proof of concept success, in 2018 and beyond the project is progressing with new funding to larger scales using satellite imagery and other data to map the area in detail and at a scale never before possible.

Ocean chemistry check

The Future Reef project is the only project monitoring ocean chemistry along the length of the Great Barrier Reef. CSIRO scientists receive water measurements in near real time from Rio Tinto's RTM Wakmatha vessel that acts as a floating laboratory, collecting and monitoring water measurements using an advanced sensor system.

Freezing the Reef

Since 2016, GBRF has funded the Reef Recovery program to cryopreserve Great Barrier Reef corals, bringing together Taronga Conservation Society Australia, the Australian Institute of Marine Science and the Smithsonian Institute to create the largest bio-bank of frozen corals in the world to potentially help regrow the Great Barrier Reef.

Scientists used 2018's mass coral spawning to create more deposits in this unique bank – for the first time collecting samples from previously bleached areas of the northern Great Barrier Reef.

They also used human fertility techniques to test whether samples collected from the central Great Barrier Reef and banked in 2012, could fertilise fresh eggs from northern region corals collected this year. Scientists reported promising results from the cross-fertilisation experiments carried out at the Australian Institute of Marine Science and are continuing to analyse the data.

OUR SUPPORTERS

The Foundation is privileged to work with an outstanding network of partners in science, business, government, philanthropy and the community who share our commitment to protecting and restoring the Great Barrier Reef and provide financial and pro bono support. *Thank you.*

Research and Delivery Partners

In 2018, we invested in Reef projects with these leading organisations:

Australian Institute of Marine Science

Bureau of Meteorology

CSIRO

Queensland Department of Environment and Science

Queensland University of Technology

Taronga Western Plains Zoo

Taronga Conservation Society

University of Hawaii Foundation

Project Partners

Australian Government

BHP

BHP Foundation

Boeing

Fitzgerald Family Foundation

Lendlease

Orica

Queensland Government

Rio Tinto

The Tiffany & Co. Foundation

Pro Bono Partners

AECOM

Allens Linklaters

Biopixel

Clouding Around

Fundraising Force

Google

KPMG

PwC Australia

Venture Pro

Community Fundraisers

We are honoured to be part of a fabulous community from all over Australia and the world who are committed to caring for this natural wonder by raising funds for the Reef. This year our community fundraisers included girl guides, schools and community events.

- Girl Guides – Oxley, Jindalee, Yeppoon, Burpengary
- Bristow Middle School, USA
- Canberra Girls Grammar
- Cheltenham Girls' High School
- Graceville State School
- Greenwich Public School
- Montville State School
- Nowra Anglican College
- Purdy Elementary School, USA
- Venice High School, USA
- Woodford Festival

GREAT WRAPS FOR GUIDES' REEF FUNDRAISER

Queensland Girl Guides chose the Great Barrier Reef as their 'good turn' for 2018.

The local Oxley chapter in Brisbane made and sold eco-friendly wax wraps to use instead of plastic wrap, even using beeswax sourced locally from Stradbroke Island. As well as making a generous donation from wrap sales, the girls became active recyclers, got involved in clean up days and learned more about the Reef. Guides from the Jindalee group made and sold fish shaped cookies and hosted a family quiz night to raise funds for the Reef.

Chairman's Panel

We thank the members of our Chairman's Panel during 2018 whose contributions enable the Foundation to manage and implement the Reef projects underway this year.

Dr John Schubert AO, Chairman

AECOM – Todd Battley, Chief Executive, Australia New Zealand

Affirmative Investment Management – Stephen Fitzgerald AO, Co-Founder and Chairman

AGL – Brett Redman, Chief Executive Officer

Allens – Richard Spurio, Managing Partner

Amcor Limited – Ron Delia, Managing Director and Chief Executive Officer

ANZ – Shayne Elliot, Chief Executive Officer

Aurizon – Andrew Harding, Managing Director and Chief Executive Officer

Ausenco Limited – Zimi Meka, Chief Executive Officer

Australian Institute of Marine Science – Dr Paul Hardisty, Chief Executive Officer

Bank of Queensland – Jon Sutton, Managing Director and Chief Executive Officer

BHP – Ken MacKenzie, Chairman

Boeing Australia & South Pacific – Maureen Dougherty, President

Boral Limited – Mike Kane, Chief Executive Officer & Managing Director

Brisbane Airport Corporation – Gert-Jan de Graaff, Chief Executive Officer

Cleanaway – Vik Bansal, Chief Executive Officer and Managing Director

ConocoPhillips Australia – Wendy King, President – Australia East

Commonwealth Bank – Matt Comyn, Chief Executive Officer

CSIRO – Dr Larry Marshall, Chief Executive

David Turner

Deloitte Australia – Cindy Hook, Chief Executive Officer

Deutsche Bank – Anthony Miller, Managing Director and Chief Executive Officer

Downer Group – Grant Fenn, Managing Director and Chief Executive Officer

Flight Centre Limited – Graham Turner, Managing Director

GE Australia & New Zealand – Max York

Google Australia & New Zealand – Mel Silva, Managing Director

Grant King

GBRF International Scientific Advisory Committee – Dr Paul Greenfield AO

GWA – Tim Salt

Jacques Nasser AC

James Cook University – Sandra Harding, Vice Chancellor and President

J.P. Morgan – Paul Uren, Chief Executive Officer Australian and New Zealand

Korn Ferry – Katie Lahey, Chief Executive

Lendlease – Steve McCann, Group Chief Executive Officer and Managing Director

Leo Burnett Australia – Melinda Geertz, Chief Executive Officer

Macquarie Group – Nicholas Moore, Managing Director and Chief Executive Officer

Morgans Financial Limited – Brian Sheahan, Executive Chairman

Mulpha Australia Limited – Seng-Huang Lee, Executive Chairman

National Australia Bank – Andrew Thorburn, Managing Director and Group Chief Executive Officer

Orica Limited – Alberto Calderon, Managing Director and Chief Executive Officer

Peabody Energy – George Schuller, President – Australia

Peter Mason

Phillip Strachan

Port of Brisbane – Jeremy Maycock, Chairman

PwC – Luke Sayers, Chief Executive Officer

PwC Strategy& – Tim Jackson, Managing Director Asia Pacific

Qantas Airways Limited – Alan Joyce AO, Chief Executive Officer

QBE – Patrick Regan, Group Chief Executive Officer

Rio Tinto – Stephen McIntosh, Group Executive Growth and Innovation

Shell – Tony Nunan, Managing Director

Stephen Roberts

Suncorp – Michael Cameron, Managing Director and Group Chief Executive Officer

Superloop – Bevan Slattery, Chief Executive Officer

Telstra – John Mullen, Chairman

The Star Entertainment Group – John O'Neill AO, Chairman

University of Queensland – Professor Peter Høj AC, Vice Chancellor

Worley Parsons – Andrew Wood, Chief Executive Officer

"The collaboration forged by the Great Barrier Reef Foundation is important. It not only raises funds for reef projects, it also creates strategic partnerships and teams to work on the cross-disciplinary challenges facing our Reef and, by extension, the world's coral reefs. It gets everyone — science, business, government, universities, non-government organisations and the public — around the table.

Prof. Ove Hoegh-Guldberg, Director Global Change Institute, The University of Queensland

Shop for the Reef Supporters

These retail and consumer businesses lent their support to Reef projects by donating a portion of their sale proceeds in 2018.

- Queensland Tissue Products
- Pacific Coast Eco Bananas
- Qantas Frequent Flyer Program
- Coral Studios X Nike collaboration
- YOOX Net-A-Porter Group collaboration with We Are Handsome
- OROTON
- The Beach People
- BAMKIKI bamboo toothbrushes
- Roofus Australia
- Sarah & Sebastian jewelry
- Emilie O'Connor Homestore
- My Mantra Active with Rocket & Honey
- Solar Bare
- Kerry Sea Designs
- Spark & Burnish
- Above & Below Photography
- Jellyfish Bedding & Mattresses
- Mermaids and Monsters by Meg Green
- Bear Vitamins

BOARD AND COMMITTEES

We gratefully acknowledge the generosity of those who give their time and expertise to the strong governance of the Foundation.

Board of Directors

Representing Australian business, science and philanthropy, the Foundation's directors at the date of this review are:

Dr John Schubert AO, Chair

Anna Marsden, Managing Director

Dr Paul Greenfield AO

Michael Cameron

Maureen Dougherty

Stephen Fitzgerald AO

John Gunn

Cindy Hook

Grant King

Amanda McCluskey

Dr Russell Reichelt

Steven Sargent

Phillip Strachan

Olivia Wirth

International Scientific Advisory Committee

Dr Paul Greenfield AO, Chair

Prof. Aidan Byrne (retired 2018)

Prof. Chris Cocklin

Prof. Bronwyn Harch

Dr Paul Hardisty

Prof. Ove Hoegh-Guldberg (retired 2018)

Anna Marsden

Prof. Peter Mumby (appointed 2018)

Dr Russell Reichelt

Dr Christian Roth

Steve Sargent

Dr John Schubert AO

Audit, Risk and Compliance Committee

Phillip Strachan, Chair

Anthony Rose

Clayton Herbert

Tendai Mkwananzi (from July 2018)

Trevor Mahony

Partnership Management Committee – Reef Trust Partnership

John Gunn, Co-chair

Steve Sargent, Co-chair

Deb Callister

Theresa Fyffe

Dr Geoff Garrett AO

Dr Paul Greenfield AO

Larissa Hale

Prof. Ove Hoegh-Guldberg

Margaret Johnson

Wendy Morris

Elisa Nichols

Traditional Owner Working Group – Reef Trust Partnership

Larissa Hale (Chair), Yuku Baja Muliku Traditional Owner from Cape York

Traceylee Forester, Lama Lama Traditional Owner from Cape York (Port Stewart/Princess Charlotte Bay) and Nywaigi Traditional Owner (Herbert River to Rolling Stone)

Stan Lui, Torres Strait Islander from Erub (Darnley Island)

Malcolm Mann, Darumbal Traditional Owner

Brian Singleton, Yirraganydji Traditional Owner

Foundation staff

Thank you to our dedicated Foundation team – full time and part time – who worked tirelessly to make 2018 a year that mattered for the Reef.

2018 YEAR IN REVIEW

Great Barrier Reef Foundation
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barrierreef.org

IYOR 2018
INTERNATIONAL YEAR OF THE REEF

Great Barrier
Reef Foundation