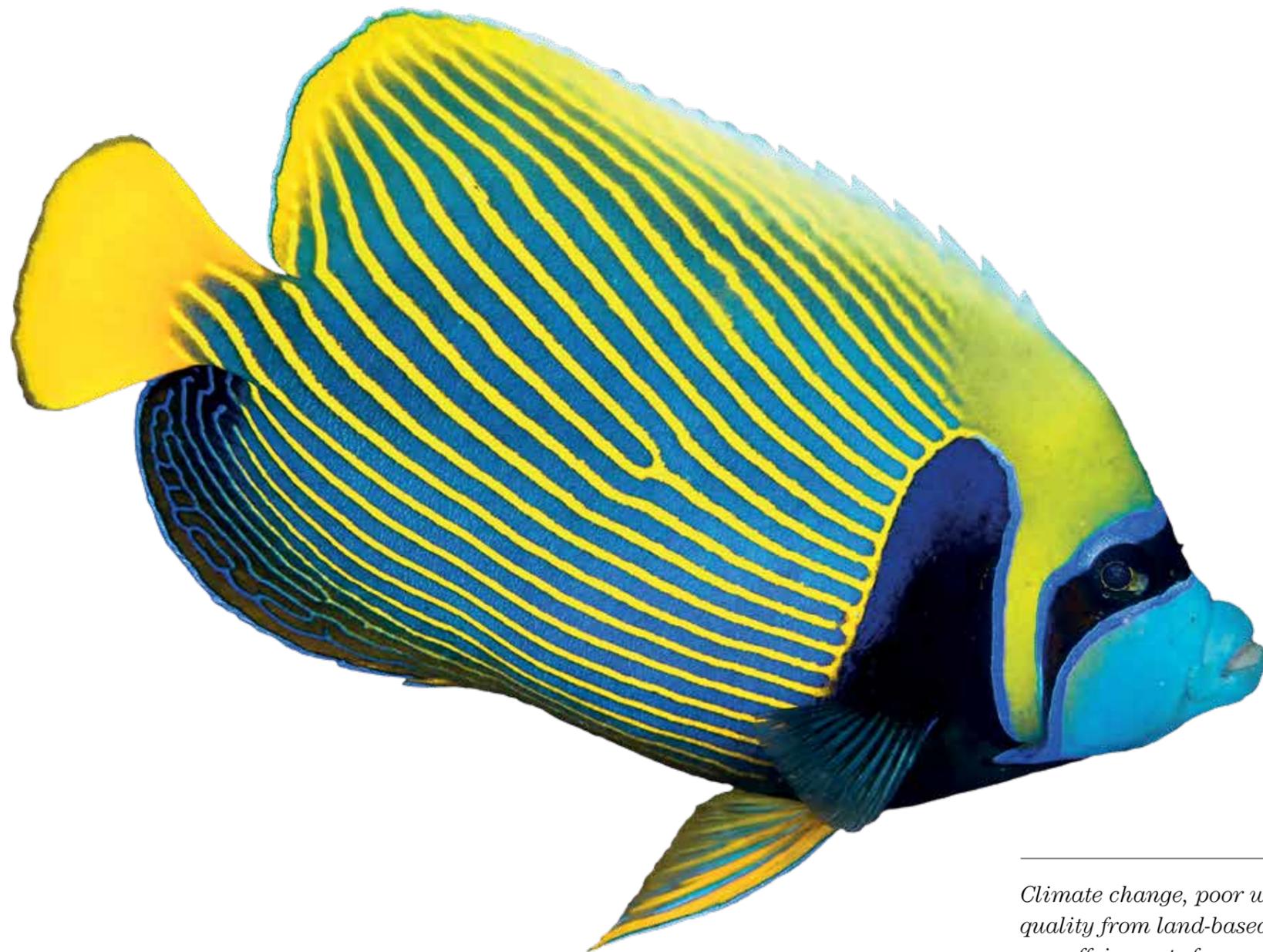




# Annual Review 2014

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# The Great Barrier Reef is beautiful and diverse: we must preserve it.

The Great Barrier Reef Foundation is fostering a resilient Reef for all generations by catalysing and funding science that informs, encourages and inspires.

*Climate change, poor water quality from land-based run-off, impacts from coastal development and some remaining impacts of fishing remain the major threats to the future vitality of the Great Barrier Reef. Even with the recent management initiatives to reduce threats and improve resilience, the overall outlook for the Great Barrier Reef is poor, has worsened since 2009 and is expected to further deteriorate in the future*

Great Barrier Reef Outlook Report 2014

## About us

The primary purpose of the Great Barrier Reef Foundation is to support the protection and enhancement of tropical reefs (especially the Great Barrier Reef) and adjoining coral coasts, for the benefit of the world community, including through the funding and provision of research, information and education.

Established in 2000 in accordance with Article 17 of the World Heritage Convention, the Foundation is the only independent, not-for-profit organisation in Australia dedicated solely to raising funds for scientific research into preserving the Great Barrier Reef.

With a focus on innovative thinking, and underpinned by rigorous governance processes, we work in partnership with both the private and government sectors to promote a strategic, collaborative and coordinated approach to Reef research.

This approach enables us to increase the pool of funding available to investigate and address the threats facing the Reef.

In the past 10 years, the Foundation has raised more than \$40m to fund vital research to preserve the Great Barrier Reef.

## Our Great Barrier Reef

Intensely beautiful and diverse, the Great Barrier Reef is home to millions of species of plants and animals, including more than 600 types of corals and 1600 species of fish. It's the world's largest coral reef system, so

large it can be seen from space. Made up of 2,900 reefs, it stretches along 2,300km of Queensland's coastline. It contributes an estimated \$6 billion annually to the Australian economy and generates around 70,000 jobs.

# Chairman's Message



## Dr John Schubert AO

The Great Barrier Reef maintained a high profile in 2014, both in Australia and internationally. A significant focus was the issues of concern to the World Heritage Committee.

2014 saw the release of major reports about the state of the Reef and its management. The Great Barrier Reef Outlook Report 2014 and the Great Barrier Reef Strategic Assessments preceded the Governments' release of the draft Reef 2050 Long Term Sustainability Plan (Reef 2050 Plan) for comment. The final version, published in early 2015, provides the overarching framework for protecting and managing the Great Barrier Reef from 2015 to 2050.

The work of the Foundation is clearly aligned with and supports the Reef 2050 Plan framework. Our role in funding pioneering research that will help reef managers, users and policy makers to make informed decisions within that framework is crucial. The Foundation is uniquely placed to lead the way in catalysing support and cooperation across all sectors – business, science, government and philanthropy – to achieve our vision of a resilient Reef. Everyone has a role to play in preserving our Reef for future generations.

Throughout the year the Foundation's research investments highlighted cutting-edge technology and innovative thinking in responding to the challenge of delivering important new reef information and management tools. Innovations included installing a water acidification sensor on a second marine vessel traversing

the Reef, coral DNA sequencing, satellite imaging areas at risk from coral bleaching, using autonomous underwater vehicles, and combining advanced modelling techniques with real data to predict future impacts on the Reef.

The private sector played an important role in helping us achieve these and other innovations. Through the Chairman's Panel, many of Australia's leading CEOs and Chairs supported the Foundation's work both financially and by engaging and informing their employees and customers about the importance of our work. At the Chairman's Panel weekend in May, we successfully brought reef science into the boardroom with hands-on reef experiences and scientists sharing updates on the latest Great Barrier Reef research.

Clearly, the task of preserving this irreplaceable natural wonder is a responsibility that we all must share. To those who support the Foundation's vision and commitment – my fellow Board members, staff, investors and partners across research, business, government and philanthropy – I thank you. I look forward to continuing our collaboration as we work towards a resilient Reef for all generations.

A handwritten signature in black ink that reads "J. Schubert".



Our role in funding pioneering research that will help reef managers, users and policy makers to make informed decisions within the Reef 2050 Plan framework is crucial.

Dr John Schubert AO

# Managing Director's report



Claire Hanratty

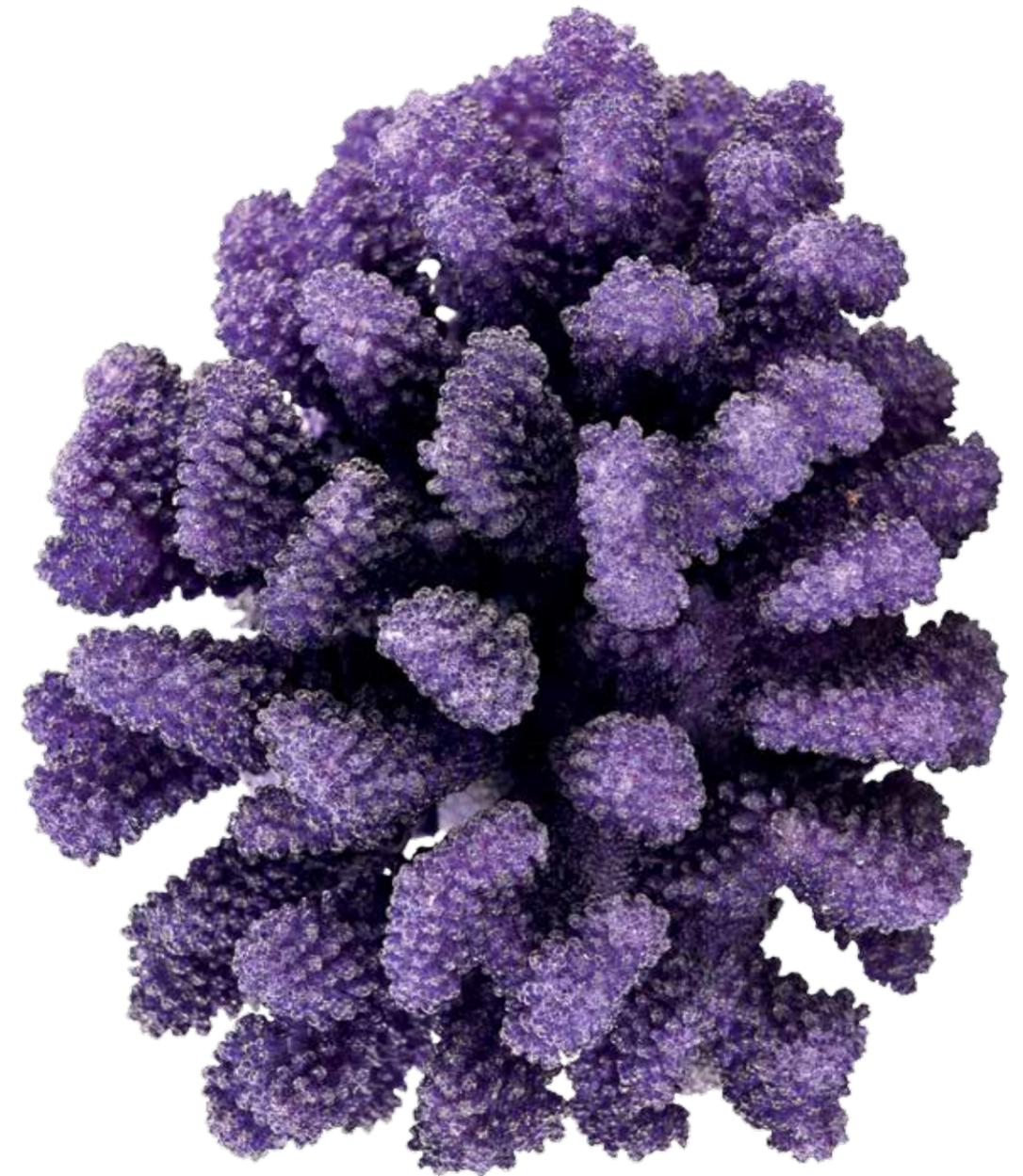
In 2014 the Foundation maintained an unwavering focus on the science going on behind the scenes to deliver knowledge to support the protection of the Great Barrier Reef. We managed a portfolio of 20 priority research investments, totalling more than \$7.7m, which specifically seek to address important Reef management needs.

Research highlights included the installation of an ocean chemistry sensor on the Australian Institute of Marine Science's research vessel (the RV Cape Ferguson) which is providing important new information on ocean acidification risk across the Reef; the sequencing of the first boulder coral genome; the use of underwater autonomous vehicles to map the structural complexity of coral reefs; and the release of the eReefs Marine Water Quality Dashboard which is publicly accessible via the Bureau of Meteorology website.

In addition to funding and managing research, the Foundation continues to strengthen its leadership role in catalysing research and facilitating its adoption by end-users. Over the past year the Foundation developed three new research frameworks in the areas of Ocean Acidification, Reef Connections and Integrated Decision-Making. These frameworks were developed collaboratively with leading national and international experts and reef managers to ensure that the research described within the frameworks will deliver positive outcomes for the Reef.

Harnessing the current high level of interest in the Reef, the Foundation also launched a new engagement initiative called ReefBlitz which provides a real, practical mechanism for people to contribute positively to the Reef's future. The successful pilot event in October saw 400 members of the general public, including more than 250 school students and children, descend on Airlie Beach to learn about the Reef and the threats it faces, discover and document local fauna and flora, and connect with Reef citizen science groups.

All of these achievements are only made possible by the generous and sustained commitment of the Foundation's supporters. Your commitment to the Reef and the vision of the Foundation enables us to fund the research that reef managers, users and policy makers need to protect and preserve this treasure for all Australians and for the world. We thank you and look forward to your continued support in 2015 as we celebrate our 15th birthday.



Over the past year the Foundation developed three new research frameworks in the areas of Ocean Acidification, Reef Connections and Integrated Decision-Making.

Claire Hanratty

# 2014 by numbers



**1<sup>st</sup>**

Ocean chemistry data sets along the Reef released



**2<sup>nd</sup>**

Science Forum hosted



**3**

New research frameworks developed



**4**

Coral species DNA sequenced



**5**

New research investments commenced



**8**

Citizen Science Alliance members



**10**

Key research beneficiaries



**20**

Research projects managed



**34**

Corporate, science and government partners



**49**

Chairman's Panel members



**400**

ReefBlitzers at Airlie Beach



**\$7.7<sub>m</sub>**

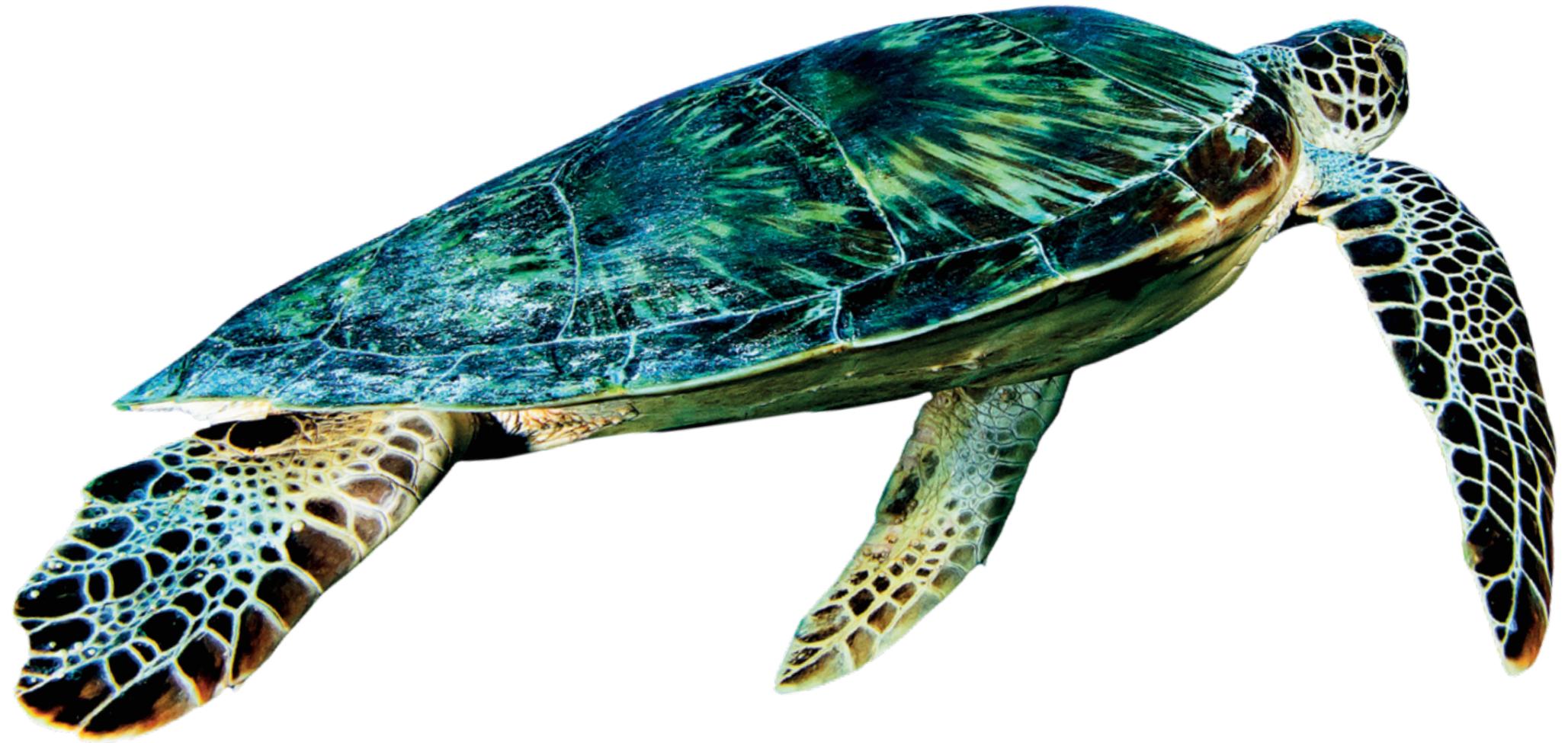
Priority research investments



**\$24.5<sub>m</sub>**

Total leveraged research value

# A year of highlights



## Coral Sea-quence results a world first

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Major gaps in genetic knowledge about coral reefs are closing with the first results from the Sea-quence research project revealing the genetic sequence of four coral species, including the sequencing of the first boulder coral genome.

## eReefs Water Quality Dashboard launched

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A new online tool for reef managers was launched from the first phase of the five year collaborative eReefs project. The eReefs Marine Water Quality Dashboard made a world-first splash onto the Bureau of Meteorology website in 2014, showing a range of visual water quality indicators in near real-time to enable timely reef management decision-making.

## First ocean chemistry data released

---

Providing vital new information about ocean acidification along the length and breadth of the Reef, the first two sets of data collected for the Future Reef MAP project and the Carbon Chemistry project were publicly released. The scientific data was collected from high-tech sensors mounted on board two vessels, Rio Tinto's RTM Wakmatha (travelling along the length of the Great Barrier Reef) and the Australian Institute of Marine Science's RV Cape Ferguson (travelling across the Reef).

## 20 research projects championed

---

The Foundation managed delivery of 20 research project investments in 2014 – five new and 15 continuing – with the Foundation's direct investment valued at over \$7.7m. The research investment value more than trebled to \$24.5m taking into account contributions from the Foundation's research institution partners.

## 3 new research frameworks developed

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The Foundation collaborated with leading national and international experts and reef managers to produce three new research frameworks in 2014. The Ocean Acidification, Reef Connections and Integrated Decision Making frameworks will ensure the Foundation's future research investments continue to be strategic, integrated and directed towards achieving the best possible management outcomes for the Great Barrier Reef.

## ReefBlitz pilot success

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The inaugural ReefBlitz citizen science event in Airlie Beach was staged over two days in October. Around 400 community members took part, identifying and documenting animal and plant species including birds, reptiles, seagrasses and corals. Highlights included sighting a rare intertidal spider generally found in Hawaii, *Paratheuma australis*, and discovering a previously undescribed species of Hoverfly.

## 5 new research investments

---

The Foundation's research portfolio added five new investments that encompass innovative and diverse research topics: coral DNA across different temperature zones; understanding the complex connections across Reef environments; creating a Reef Resilience Index; the ReefBlitz citizen science initiative; and integrating economic and social values, also termed natural capital, into Reef management decisions. The new 'Coral Genomics Along Environment Gradients' project is one of only nine to also receive funding via the Queensland Government's new Accelerate Queensland Science and Innovation Partnerships Program. Tapping into the latest DNA technology, it's investigating the genetic differences of corals under different environmental conditions.

## Unique collaboration

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The Foundation brought together more than 70 leading lights in business, science and philanthropy to create a diverse community united in its support of a resilient Reef. In 2014, 17 research collaborators and more than 60 corporate, philanthropic and government partners and members contributed over \$5.8m to support the Foundation in fostering and catalysing vital scientific research.

## Citizen Science Alliance website launched

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Boeing's partnership with the Foundation enabled the development and launch of the Great Barrier Reef Citizen Science Alliance website detailing citizen science activities taking place on the Reef and how local communities can get involved. [greatbarrierreefcitizenscience.org.au](http://greatbarrierreefcitizenscience.org.au)

## Bommies Award winner

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James Cook University's Kirsty Nash won the Foundation's Bommies Award from 11 other contenders for her 'Big Fish, Small Fish' video that explores the impacts of climate change on reef fish. A humorous take on the plight of 'Herman the Sea Cucumber' took out the People's Choice Award.

## 2nd Science Forum

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Hosted in KPMG Brisbane's offices in August, the second annual Science Forum attracted an audience of more than 70 from the science, corporate and government sectors to the science showcase. Four of the Foundation's major projects featured together with a presentation from Bommies award winner, Kirsty Nash.

# Innovations in science

Applying new technologies and innovative problem-solving techniques to the science that's needed to preserve the Great Barrier Reef has yielded significant results this year. From DNA sequencing and fitting water chemistry sensors to a 54,000 ton ship, to using satellite imagery and autonomous underwater vehicles, the Foundation has invested in research that is expanding the boundaries of the science going on behind the scenes to deliver knowledge that will help preserve the Great Barrier Reef.

## Future Reef MAP

*An ocean chemistry collaboration between the Foundation, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and Rio Tinto Alcan*

Science, industry and innovation converge in this million dollar initiative to deliver vital information about how the ocean chemistry is changing across the length of the Great Barrier Reef.

Installing a custom-built sensor onto the Rio Tinto vessel RTM Wakmatha is offering never-before-seen insights into where and when ocean acidification is impacting the Reef. The sensor collects data along the length of the Great Barrier Reef, sampling the surface water every one to two minutes and enabling carbon dioxide, pH, temperature, salinity and dissolved oxygen measures to be taken.

*Why it's important:* Rising ocean acidification from increasing levels of carbon dioxide filtering into the oceans threatens the Reef's survival. It makes it harder for coral to grow and maintain strength which in turn jeopardises the Reef's entire ecosystem which is supported by coral reefs. Having timely information about changing ocean acidification will enable Reef managers to more accurately assess the threat and to act with a view to preserving the Reef.

## eReefs Marine Water Quality Dashboard

*eReefs is a collaboration between Australia's leading operational and scientific research agencies, government, corporations and Reef managers*

The new Marine Water Quality Dashboard – the first of the eReefs tools – was published live and made publicly available on the Bureau of Meteorology website in 2014. It gives access to a range of water-quality indicators for the Great Barrier Reef which can be viewed in map, table and chart format and downloaded for detailed analysis.

This is the first online resource produced by the overarching eReefs project, an ambitious \$25 million, five year project using cutting-edge technologies to combine real data about the Reef with new and integrated modelling tools. The result will be a whole suite of highly visual and practical online tools that Reef managers can use to accurately assess and predict the cumulative effects of major Reef stressors such as climate change, floods, cyclones, and land run-off.

*Why it's important:* In the same way that weather forecasting tools enable us to prepare for the impact of severe weather events and make decisions to preserve life and property, so too

will the eReefs suite of online tools enable Reef managers to visualise and predict the impact of different events on the Reef and respond accordingly. Having this information available proactively is essential for the Reef's long-term preservation.

The project collaborators: Bureau of Meteorology, Commonwealth Scientific and Industrial Research Organisation, Australian Institute of Marine Science and the Queensland Government, supported by funding from the Australian Government's Caring for our Country Initiative, the Queensland Government, BHP Billiton Mitsubishi Alliance and the Science Industry Endowment Fund.



## Sea-quence

*A ReFuGe2020 initiative supported by Rio Tinto and Bioplatforms Australia*

Harnessing the latest DNA technology, this world-first project is revealing the secrets of 10 reef-building corals by sequencing their genomes and their associated microbes and algae.

Four coral species were successfully sequenced in 2014 as were two associated coral algae. This included DNA sequencing of the first boulder coral genome.

With around 40% of the project's targets already sequenced, the Great Barrier Reef's rare double spawning events in October and November provided a unique opportunity for the project's scientists to gather critical samples from the other key coral species for future analysis.

*Why it's important:* This information is vital to help address the significant knowledge gap about coral resilience and capacity to adapt to change. With 550 coral species living on the Great Barrier Reef, this project is delivering vital new knowledge about 2% of the Reef's corals, leaving 98% still to uncover.



## ReefBlitz engages communities in science

The Foundation launched this new community science engagement program in 2014 to expand its burgeoning citizen science program.

The inaugural ReefBlitz event, held at Airlie Beach in October, allowed community members to become citizen scientists charged with discovering and documenting important plant and animal species whilst also contributing meaningful data and information.

Around 400 people of all ages, including local school students, experienced hands-on science in the two-day ReefBlitz event. They carried out 23 biodiversity surveys making 656 observations, identified and documented 191 different species including birds, reptiles, insects, seagrasses and coral, and took part in a beach clean-up.

Highlights of the event included the sighting of a very rare intertidal spider and the discovery of a previously undescribed species of Hoverfly.

ReefBlitz was supported by the Queensland Government, Qantas, Earthwatch, local community groups and the Queensland Museum.

## Citizen Science Alliance

Boeing's partnership with the Foundation to build the Citizen Science Alliance initiative created new opportunities for engaging the community in the protection and preservation of the iconic Great Barrier Reef.

In 2014 this program:

- Launched a Citizen Science Alliance website detailing citizen science activities on the Great Barrier Reef and adjoining areas and how to get involved;
- Expanded the Alliance from five to eight citizen science groups, with more than 5,000 members collectively;

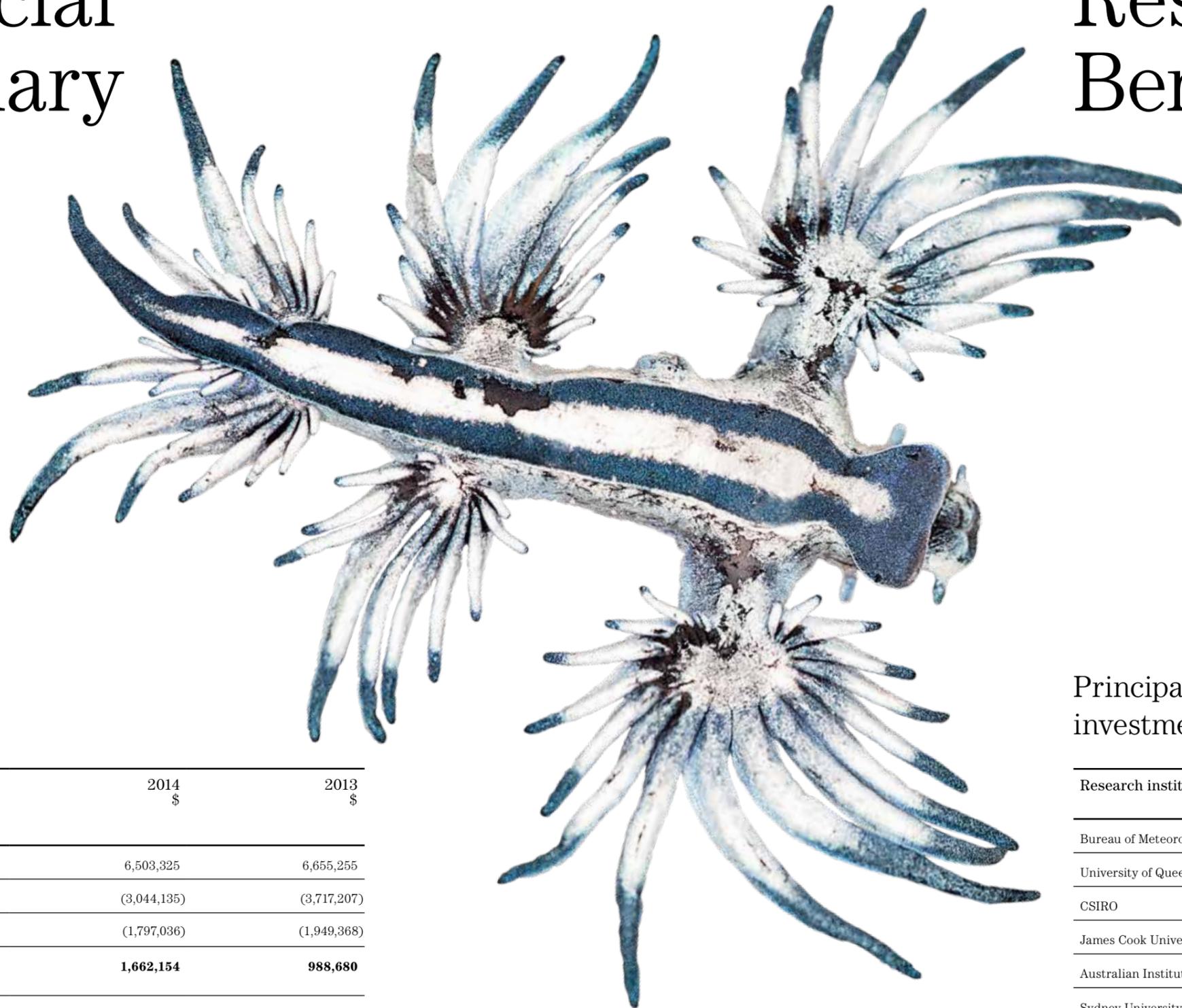
- Hosted a Reef Citizen Science day with events held along the length of the Reef engaging more than 2000 from the local community;
- Sparked the inaugural ReefBlitz event at Airlie Beach that engaged more than 400; and
- Developed a social media module as part of a Great Barrier Reef citizen science toolkit.

With Boeing's ongoing support in 2015, the Foundation looks forward to growing this program.



# Financial summary

# Research Beneficiaries



Statement of profit or loss and other comprehensive income For the year ended 31 December 2014	2014 \$	2013 \$
<b>Revenue</b>	6,503,325	6,655,255
Science investments	(3,044,135)	(3,717,207)
Operating expenses	(1,797,036)	(1,949,368)
<b>Operating surplus before income tax</b>	<b>1,662,154</b>	<b>988,680</b>
Income tax expense	-	-
<b>Operating surplus for the year</b>	<b>1,662,154</b>	<b>988,680</b>
Other comprehensive income for the year	-	-
<b>Total comprehensive income for the year</b>	<b>1,662,154</b>	<b>988,680</b>

## Principal beneficiaries of research investments over \$100,000 in 2014:

Research institution	Investment \$
Bureau of Meteorology	500,000
University of Queensland	475,284
CSIRO	382,672
James Cook University	359,997
Australian Institute of Marine Science	300,000
Sydney University	250,000
Griffith University	230,000
Australian National University	110,000

# Our partners



Protecting and preserving the Reef for the benefit of the world community and future generations requires teamwork, partnerships and collaboration.

The Foundation is privileged to work with an outstanding group of valued partners, research investors and donors. We thank them for their generous contributions and support. We couldn't do it alone.

The projects in which the Foundation invests are determined by the International Science Advisory Committee, not by investors or donors. The Foundation does not engage in contract research.

## Pro Bono Partners

In 2014, pro bono partners provided expert services and advice valued at more than \$386,000.



## Government Partners



## Research Investors



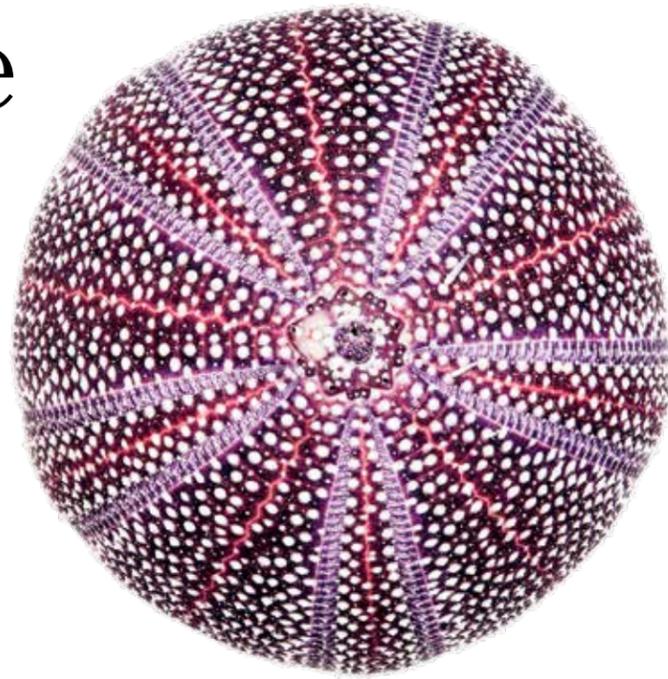
## Donors



## Research Partners



# Governance



# Chairman's Panel

## Board of Directors

*The Board of Directors comprises representatives from Australian business, science and philanthropy. This reflects the charter of the Foundation to bring all three sectors together through investment in research initiatives that aim to maximise the sustainability of the Reef for the benefit of all Australians and the world community.*

**John Schubert AO**  
Chairman

**Ian Buchanan**

**Michael Cameron**  
Chair, Audit and Compliance Committee

**Stephen Fitzgerald**

**Kerry Gardner**  
resigned 17/5/2014

**Paul Greenfield AO,**  
Chair, International Scientific Advisory Committee

**Claire Hanratty**  
Managing Director

**Amanda McCluskey**

**John Mulcahy**

**Russell Reichelt**

**Phillip Strachan**

**Keith Tuffley**

**David Turner**

**Peter Young AM**

## International Science Advisory Committee

*The role of the International Scientific Advisory Committee (ISAC) is to provide expert advice to the Foundation's Board and management on the direction of the science and the progress of science investments.*

ISAC members are leaders in research and management of the Reef under whose leadership and governance the Foundation's research program is developed, delivered and quality assured.

**Professor Paul Greenfield AO**  
Chair

**Professor Chris Cocklin**  
Senior Deputy Vice-Chancellor,  
James Cook University

**John Gunn**  
Chief Executive, Australian  
Institute of Marine Science

**Professor Ove Hoegh-Guldberg**  
Director, Global Change Institute,  
University of Queensland

**Dr Andrew Johnson**  
Group Executive Environment, Commonwealth  
Scientific and Industrial Research Organisation

**Professor Max Lu**  
Provost and Senior Vice President,  
University of Queensland

**Dr Russell Reichelt**  
Chairman and Chief Executive, Great  
Barrier Reef Marine Park Authority

*Fifty of Australia's leading companies, through their Chief Executives and Chairs, connect with and financially support the Great Barrier Reef through membership of the Foundation's Chairman's Panel. This unique forum brings together business and science in a tangible way to create ambassadors in the corporate sector for the Reef and the science that preserves the Reef.*

Members of the Chairman's Panel during 2014

**John Schubert AO**  
Chairman

**Julianne Alroe**  
CEO and Managing Director,  
Brisbane Airport Corporation

**Gavin Bell**  
Chief Executive Officer, Herbert Smith Freehills

**Michael Cameron**  
Chief Executive Officer and Managing  
Director, The GPT Group

**Megan Clark**  
Chief Executive, CSIRO

**Peter Crowley**  
Managing Director, GWA Group Limited

**Geoff Culbert**  
President and CEO, GE Australia, New  
Zealand and Papua New Guinea

**Geoff Dixon**  
Chairman, Tourism Australia

**Maureen Dougherty**  
President – Australia & South Pacific  
Boeing Australia Holdings Pty Ltd

**Andrew Faulkner**  
Chief Executive Officer, Arrow Energy

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

**Stephen Fitzgerald**  
Chairman, Wilmington Group

**Richard Goyder AO**  
Managing Director, Wesfarmers Limited

**Paul Greenfield AO**  
Chair, Great Barrier Reef Foundation  
International Scientific Advisory Committee

**John Grill**  
Chairman, WorleyParsons

**Stuart Grimshaw**  
Chief Executive Officer, Bank of Queensland

**Matthew Grounds**  
Chief Executive Officer, UBS Australasia

**John Gunn**  
Chief Executive Officer, Australian  
Institute of Marine Science

**Claire Hanratty**  
Managing Director, Great Barrier Reef Foundation

**Sandra Harding**  
Vice Chancellor and President,  
James Cook University

**Lance Hockridge**  
Managing Director and CEO, Aurizon

**Peter Høj**  
Vice Chancellor, University of Queensland

**Greg Hywood**  
Chief Executive and Managing  
Director, Fairfax Media Limited

**Tim Jackson**  
Chairman ANZSEA, Strategy&

**Alan Joyce**  
Chief Executive Officer, Qantas Airways Limited

**Gail Kelly**  
Chief Executive Officer and Managing  
Director, Westpac Group

**Harry Kenyon-Slaney**  
Chief Executive, Energy, Rio Tinto

**Grant King**  
Managing Director, Origin Energy Limited

**David Knox**  
Chief Executive Officer and  
Managing Director, Santos

**Seng-Huang Lee**  
Executive Chairman, Mulpha Australia Ltd

**Alan Liebman**  
Chief Executive Officer, Kerzner International

**Andrew Liveris**  
President, Chairman and CEO,  
The Dow Chemical Company

**Andrew Mackenzie**  
Chief Executive Officer, BHP Billiton Limited

**Ken MacKenzie**  
Managing Director and CEO, Amcor Limited

**Steve McCann**  
Group Chief Executive Officer and  
Managing Director, Lend Lease

**Charles Meintjes**  
President Australia, Peabody Energy

**Zimi Meka**  
Chief Executive Officer, Ausenco

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

**Ian Narev**  
Chief Executive Officer, Commonwealth  
Bank of Australia

**Grant O'Brien**  
Chief Executive Officer and Managing  
Director, Woolworths Limited

**James Packer**  
Chairman, Consolidated Press Holdings

**Simon Rothery**  
Chief Executive Officer, Goldman Sachs

**Ian Smith**  
Managing Director and CEO, Orica Limited

**Michael Smith OBE**  
Chief Executive Officer, ANZ  
Banking Group Limited

**Keith Tuffley**  
Founder & CEO, NEUW Ventures SA

**David Turner**  
Chairman, Commonwealth Bank of Australia

**Gary Wingrove**  
Chief Executive Officer, KPMG

**Andrew Wood**  
Chief Executive Officer, WorleyParsons

**Peter Young AM**  
Chairman, Australia, Barclays



Let us be good stewards of the Earth we inherited. All of us have to share the Earth's fragile ecosystems and precious resources, and each of us has a role to play in preserving them. If we are to go on living together on this earth, we must all be responsible for it.

Kofi Annan



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Reef Foundation**

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Queensland Australia

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