ZooX Fund Investor Progress Report

October 2010

GREAT BARRIER REEF
foundation

Introduction

The past nine months have been intensely busy for the Foundation with the development of its Research Portfolio and strategies to fund the Portfolio as well as the ongoing management of existing investments.

This update will provide investors with an overview of activities to date and plans for the remainder of 2010.

GBRF Research Portfolio

The two working groups GBRF had convened delivered their final milestone at their joint meeting on July 23rd - a prioritised set of research concepts aligned with the research vision of the Foundation *"a resilient Reef successfully adapting to climate change".* This milestone is the culmination of 18 months of work - a process which has drawn on the collective expertise of more than 40 prominent individuals from science, business and government.

This set of research concepts, together with a suite of critical enabling infrastructure and integration projects, will become the *GBRF Research Portfolio*.

The Portfolio is presently being independently reviewed by a number of global experts to ensure it is robust and will deliver on the vision.

This Portfolio represents an exciting new phase for the Foundation, and will drive a focused and strategic research agenda that aims to enhance the resilience of the Great Barrier Reef in the face of climate change.

Once finalised and launched in late 2010, the Portfolio will represent the strategic research priorities for the Foundation and direct much of its future investment.

Importantly, the Portfolio builds upon the significant investment provided by investors in the ZooX Fund and will substantially expand the scope and scale of existing ZooX research activities.

Research Investment Progress

Existing research investments by the ZooX Fund have also made great progress over this time.

i. Smart State Fellowship Co-Funding

In May 2008, Professor Ove Hoegh-Guldberg was awarded the prestigious Premier's Smart State Fellowship to conduct research into the impacts of climate change on the Great Barrier Reef. GBRF is a significant co-sponsor of the Fellowship through the ZooX Fund over the 5 years of the Fellowship.

The progress of projects currently funded by GBRF under this Fellowship can be summarised as follows:

- *Distribution of Zooxanthellae across thermal environments* – This project, now in its third and final year, investigates the genetic variation

in symbiotic zooxanthellae[1] across different conditions, particularly thermal environments. The research has identified 85 different types of zoothanthellae, with the resulting large data set being incorporated into a new GBR management tool. By identifying the distribution and abundance of different types of zooxanthallae and their tolerance ranges across a wide range of sites along the GBR, it will be possible to develop and optimise better management strategies to minimise the impacts of climate change.

- *Impact of Water Clarity and light*: This project has harnessed daily NASA satellite data, validated by field measurements, to measure water clarity at small scale resolution across the GBR. Further analysis of historical water clarity data has allowed researchers to:

    - Establish benchmark water clarity values across the GBR;
    - Identify how events (e.g. cyclones, ocean current eddies) drive changes to water clarity; and
    - Identify specific areas of the Reef that may be more vulnerable.

ii. Assisted Migration and Colonisation

Dr Madeleine van Oppen and her team from the Australian Institute of Marine Science have continued their ZooX Fund supported research of the "genetic coral variances" and "assisted migration". Recent progress is summarised below.

- *Genetic Variance*: Whilst it is well known that variation in susceptibility to bleaching exists within most coral populations, little is known about the genetic basis of such variation in the coral host, and its geographic distribution. The aim of this project is the identification of variation in genes between coral populations that are naturally exposed to warm or cool water temperatures. Some 80 coral samples have been collected from the northern, central and southern GBR and genetically analysed. The research team is presently reviewing the resultant data.

- *Assisted North-South Migration:* It has been hypothesised that moving corals from warm adapted areas to colder locations may assist corals to adapt to climate change. Recent laboratory experiments have demonstrated that translocated corals from warmer (northern) regions of the GBR can interbreed with native corals. However the fitness of the resulting hybrid corals appears to be less robust than that of the purebred corals. As the reproductive success of these laboratory experiments was low the research team will repeat experiments in the coming spawning season to validate their data.

iii. eReefs

eReefs is an ambitious and visionary project which aims to integrate and visualise GBR related data and models spanning the paddock, catchment, estuary, lagoon and ocean, into a unified framework. This $25m project will provide the most comprehensive picture of the Reef as it is, has been and will be in the future, significantly enhancing the decision making capabilities of Reef managers and policy makers.

[1] Microscopic photosynthetic organisms that live in coral and provide energy for the coral

A pilot project, funded by a partnership between the Foundation, Telstra, the Queensland Government and CSIRO commenced in May, focussed on demonstrating the importance and value of two of the key work packages which make up the larger eReefs project. The pilot will deliver:

- The visualisation platform required for the larger eReefs project.
- Application of the visualisation technology to two key river catchments (Burdekin and Barron) for a set of historical events.
- A prototype of the integration of key models (catchment, estuarine and lagoon) for the Fitzroy River.

The eReefs project team have completed the visualisation platform and are making good progress on the data integration framework with a view to completing the pilot by 31 October.

GBRF is also committed to the larger eReefs project and is actively exploring ways to fully fund this project. The Science Industry Endowment Fund (SIEF) has committed $4m to this larger project provided GBRF can raise an additional $4.9m over the next 6 months. These cash contributions will be matched by $6.1m of in-kind contributions from the Australian Institute of Marine Science (AIMS) and the CSIRO.

New Project Investments by the ZooX Fund

i. Seals for the Reef

On World Environment Day 2010, Qantas Airways, in partnership with the Foundation and the Antarctic and Climate Ecosystems Cooperative Research Centre announced its sponsorship of the "Seals for the Reef" initiative. Miniature sensors attached to elephant seals in the Southern Ocean will provide important oceanic data that can improve our understanding of how climate change may impact on delicate marine ecosystems such as the Reef.

This project is funded for 12 months and is supported by a student-focused website, www.sealsforthereef.com.

ii. New Smart State project – Ocean Acidification

A new study on ocean acidification will commence in late 2010 under GBRF's Smart State Fellowship commitment. This project builds on previously ZooX Fund research to explore and define the rates at reef strength and the ability to maintain a three-dimensional structure will break down under climate change.

Clinton Global Initiative

The Great Barrier Reef Foundation was recently been invited to join the Clinton Global Initiative (CGI).

Established in 2005 as a project of the non-partisan William J. Clinton Foundation, CGI describes itself is "an action – oriented community of the most effective Chief Executives, Heads of State, Nobel Prize winners and non-governmental leaders in the world today".

CGI convenes global leaders to devise and implement innovative solutions to some of the world's most pressing challenges. Since 2005, CGI members have made nearly 1,000 'Commitments to Action' valued at upwards of $30 billion to improve more than 200 million lives in over 150 countries around the world.

Membership of CGI culminates in its 2010 Annual Meeting which held from 20 – 23 September in New York City.

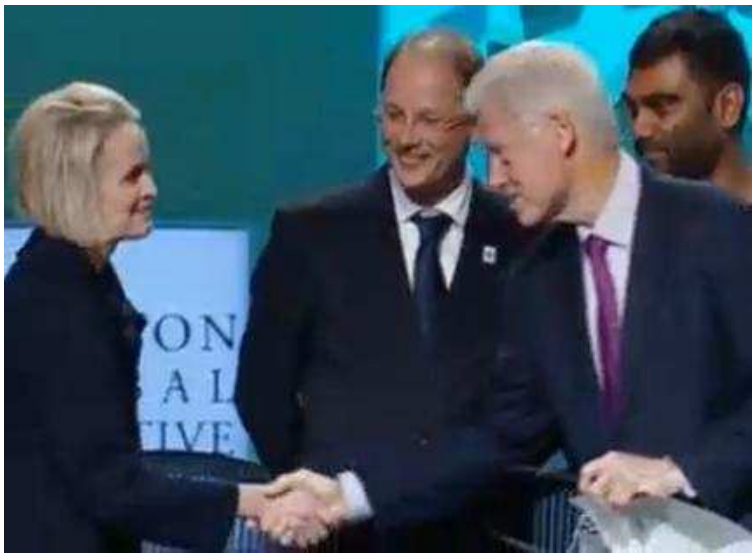
The Meeting takes a "market-place" approach to linking those who have something to offer with those who have resources to give. The initial matching of seekers and donors is facilitated by CGI, which arranges meetings and opportunities for both sides to "connect".

GBRF's Commitment to Action focuses on three areas:

- The research portfolio it is developing, which is nearing completion;
- Its initiative with Goldman Sachs and KPMG to develop a fundraising framework to fund part of this research portfolio, alongside contributions from philanthropy and business and co-investment by research partners;
- A programme of global outreach to take what has been learned through the process of portfolio development and the results of research to other coral reef countries, especially those in the developing world.

The strength and innovative nature of GBRF's Commitment to Action was recognised by CGI and selected from a larger pool of several hundred member commitments as an exemplar approach to addressing challenges in the Environment. Consequently, President Clinton himself announced GBRF's commitment during the Market-Based Solutions Plenary Session.

The CGI opportunity gave GBRF an extraordinary international platform from which to publicise the work it is doing, the partnerships it has forged and the novel means by which it is seeking to achieve its mission.



Next Steps for GBRF and the ZooX Fund

The remainder of 2010 will see the Foundation finalise its research portfolio. Refinements, formal reviews and approvals are being conducted in readiness for an anticipated launch of the Portfolio in late 2010.

Recognising that the Research Portfolio under development will require significant investment, in the order of $100 million, the Foundation will continue to engage in a significant effort with its partners Goldman Sachs and KPMG to develop a financing framework which will operate alongside funding from corporate and philanthropic sources.

Investment in the Portfolio will also be leveraged through contributions from nationally competitive grant schemes such as the Australian Research Council.