



Australian Government
Great Barrier Reef
Marine Park Authority

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ISSN 1834-6774

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Research reveals rapid reef recovery



Reefs in the Keppels have recovered (left) from coral bleaching in 2006 (right) – photographs courtesy of Dr Guillermo Diaz-Pulido

Research has uncovered spectacular recovery of coral reefs in the Keppel Bay area of the Great Barrier Reef Marine Park after they were severely affected by coral bleaching in 2006.

A lucky combination of rare circumstances enabled these reefs to recover from damage caused by severe bleaching and being smothered by seaweed that year.

The recovery is linked to an exceptional combination of previously-underestimated ecological mechanisms and the benefits of a well-protected marine area.

Great Barrier Reef Marine Park Authority (GBRMPA) Chairman Russell Reichelt welcomed the research that showed good coral recovery from bleaching.

"This research confirms marine protected areas are beneficial in building the health of the Reef against the impacts of climate change," he said.

"While this research brings good news, we are certainly not underestimating the damage climate change can cause.

"We cannot afford to be complacent and we are continuing to look at ways to build the health of the Reef in all areas so that it is able to withstand the impacts of climate change."

The research pinpointed three main factors for the coral recovery.

Exceptionally high re-growth of surviving coral tissue fragments combined with unusual seasonal dieback in the seaweeds and the presence of a highly competitive coral species that was able to out-grow the seaweed.

The research was funded by GBRMPA, ARC Centre of Excellence and a Pew Fellowship in Marine Conservation awarded to Dr Laurence McCook from the GBRMPA.

Laurence, one of the research authors, said understanding the different mechanisms of resilience was critical for reef management under climate change.

"Diversity in processes may well be critical to the overall resilience and persistence of coral reef ecosystems globally," he said.

"This combination of circumstances provided a lucky escape for the coral reefs in Keppel Islands, but is also a clear warning for the Great Barrier Reef.

"As climate change and other human impacts intensify, we need to do everything we possibly can to protect the resilience of coral reefs."

The research was published in the paper "Doom and boom on a resilient reef: Climate change, algal overgrowth and coral recovery", in the journal PLoS ONE, by Guillermo Diaz-Pulido, Laurence J. McCook, Sophie Dove, Ray Berkelmans, George Roff, David I. Kline, Scarla Weeks, Richard D. Evans, David H. Williamson and Ove Hoegh-Guldberg.



There is no doubt this past summer saw mixed blessings for the Reef. However, this month's front page Searead shows that the Reef does have the amazing ability to bounce back under the right circumstances.

A joint research project between the Great Barrier Reef Marine Park Authority (GBRMPA), ARC Centre of Excellence and Pew Fellowship has found coral reefs in the Keppel Bay area have recovered in remarkable fashion since being severely affected by coral bleaching in 2006.

While this is welcome news it should be remembered that this recovery was due to a very lucky combination of rare circumstances which cannot be relied upon to occur in future years.

It is more important than ever to ensure we have a healthy and resilient ecosystem to give the Reef the best possible chance to resist and/or recover from the cumulative impacts of climate change. Good water quality is essential for the proper functioning of the Reef's ecological systems if it is to have any chance of enduring the impacts of climate change.

While we managed to avoid the catastrophic heating that was predicted at the start of summer, the heavy monsoonal conditions that averted severe heating brought other stresses to the region in the form of

extensive and persistent flooding of rivers.

Research currently being undertaken suggests these floodwaters appear to have combined with moderately high water temperatures to cause localised bleaching, especially in shallow inshore reefs between Townsville and Cairns.

Cyclone Hamish has also played into the suite of summer stresses, causing damage to many reefs in the southern Great Barrier Reef.

We continue to work closely with our partner organisations, including the Queensland Department of Environment and Resource Management, Australian Institute of Marine Science, James Cook University and the Marine and Tropical Science Research Facility to determine the combined impacts of these events. We will bring you more information on this research as it comes to hand.

In other news, I was pleased to be invited to speak to the members of the Board of Mackay Canegrowers recently and to hear about some of the innovative practices being adopted by canegrowers in their region to help improve the quality of water flowing to the Great Barrier Reef. Similarly, I welcome the initiatives by the grazing industry profiled in this edition of Searead. It

is great to see canegrowers and graziers embracing the Australian Government's Reef Rescue Package.

There has been some recent media about a proposal to close the Coral Sea to fishing. I would like to clarify that the GBRMPA is not responsible for management in the Coral Sea. The Coral Sea falls within the Australian Government's marine bioregional planning process and is a matter for the Minister for the Environment, Heritage and the Arts. There have been suggestions in the media that this proposal will reopen the Great Barrier Reef Marine Park Zoning Plan. There are no plans to reopen the Zoning Plan. The Act states that the Minister cannot approve a review of a zoning plan until the plan has been in operation for at least seven years. In the case of the current Zoning Plan, while a review could not occur before July 2011, it is not a mandatory requirement after this date and there are no plans to reopen the zoning process.

Regards

Reef health on Mackay Canegrowers radar

The members of the Board of Mackay Canegrowers Limited (MCL) welcomed Great Barrier Reef Marine Park Authority (GBRMPA) Chairman Russell Reichelt to their Board meeting recently.

MCL Chairman Paul Schembri said Board members were very keen to hear what Russell had to say.

"We were all keen to hear his assessment of the current reef environment," he said.

"MCL growers have been working hard to understand and improve their farming environments and welcome the opportunity to gain a greater understanding of the results of their hard work.

"Mackay growers have responded enthusiastically to the Australian Government's \$200 million Reef Rescue Plan. In fact, the program has been over-subscribed for this financial year."

Russell said the meeting was a great opportunity to help strengthen the relationship between the GBRMPA and the Mackay Canegrowers.

"The GBRMPA believes Mackay Canegrowers have a good understanding of the links between their environment and the Reef and sees improving land management

practices as a win-win for both the Reef and land managers," he said.

"We recognise that many local canegrowers have already adopted on-farm practices that will improve the quality of water entering the Great Barrier Reef.

"The Mackay/Whitsunday cane farming community's involvement in identifying best practices and in leading the development of tools for recording what practices farmers are implementing, has moved us a long way to understanding just what can be achieved.

"We applaud the efforts so far and look forward to working with Canegrowers to foster the widespread uptake of these practices across the industry in the Mackay/Whitsunday region."

Window to the Reef provides glimpse of wild weather impacts

It may not be the real Great Barrier Reef, but the live coral display at Reef HQ Aquarium in Townsville certainly felt the brunt of summer just like its namesake.

The coral at the aquarium suffered from summer's warmer temperatures and heavy rainfall in the same way that these events affected the Great Barrier Reef.

Reef HQ Aquarium Manager Fred Nucifora said Reef HQ Aquarium felt the effect of more than 1500 millimetres of rain in the Townsville area since the start of the summer.

"As the largest display of living coral in the world, our 2.5 million litre coral tank is a partially open system with the surface of the tank exposed to the elements," he said.

"We also use water from Ross Creek to top up our tanks and the unprecedented rain lowered the salinity in the creek, adding to our concerns.

"To help level out salinity in the tank, we added six tonnes of salt over two weeks."

The six tonnes only managed to raise the salinity by one part per thousand, which is like increasing the salinity of a bathtub full of water by one teaspoon of salt.

But this initiative, coupled with a reprieve from the rain, has seen the tank bounce back.

On the real Reef, freshwater flood plumes are extremely stressful to corals and can cause wide scale coral bleaching, death and long-term damage.

This year the Reef was hit by a triple whammy of impacts from stifling heat in December and record rainfall in January and February to destructive winds from cyclone Hamish in March.

Unlike the situation on the Reef, corals at Reef HQ Aquarium made a quick recovery.

This was thanks to the hard work of the 22 staff and 140 volunteers who monitored the tank to maintain control of temperature, salinity, and water quality.

Great Barrier Reef Marine Park Authority (GBRMPA) Chairman

Russell Reichelt said corals at Reef HQ were lucky to have avoided the same levels of damage experienced by the Reef due to their relative protection.

"Keeping sensitive coral alive and well is extremely challenging and Reef HQ has a team of people working constantly to improve environmental conditions and keep the corals as healthy as possible," he said.

"While the real Reef can't receive the same level of intensive care as Reef HQ, there were ways to help build the health of the reef against climate change and extreme weather.

"We can all do our bit to make our homes and businesses as energy efficient as possible and help ensure that the water carried by our creeks and rivers to the Reef is as clean as possible."

At Reef HQ, the team plans to bolster coral health by increasing salinity, controlling temperature, 'feeding' calcium to corals to help them build strong skeletons and using clean, pollutant-free water to refill the tank.

Earth Hour marks the start of life for Lady Elliot Island turtle hatchlings

Many coastal residents know that lights can be distracting to sea turtle hatchlings trying to make their way to the ocean so what better way to kick off life as a sea turtle than in the dark.

This is just what staff and residents at Lady Elliot Island thought when they decided to release 25 turtle hatchlings during Earth Hour recently.

Island manager Wayne Fox said the connection between Earth Hour, coastal lights and the threat climate change poses to turtles made the chosen release time very appropriate.

"Releasing the hatchlings during Earth Hour was symbolic as these little turtles will face a number of challenges in their lifetime," he said.

"We thought it would be a good omen to let them go during a time that symbolised hope for all of our futures.

"At Lady Elliot Island, we are passionate about tackling the threat of climate change and this year we went one better than turning out our lights - we turned off the entire island instead."

The Lady Elliot Earth Hour festivities started at dusk with a tour of the island's new hybrid solar power station followed by a presentation on the island's energy saving initiatives and tips on what people can do to save energy at home.

Next up was a candle-lit barbeque where guests brought torches and cyalume sticks along for the post dinner hatchling release, crab watching, star gazing and some quiet time to listen to the sounds of nature on a coral cay in all its moonlit splendour.

"It was a fantastic experience to have a whole island of people uniting to turn the tide on climate change and to help start a lifetime voyage of the next generation of reef creatures," Wayne said.

"Earth Hour was just one of the many ways we demonstrate our commitment to the spectacularly beautiful coral reef that is right here on our doorstep."

The island's Earth Hour initiatives will continue throughout the year with its focus on sustainability, energy reduction and of course the new solar power station which is affectionately referred to by staff as the 'clean green energy machine.'

This was just one of the many Earth Hour activities that took place within the Great Barrier Reef Catchment - a range of other groups, businesses and individuals also took part.



A turtle makes its way to the ocean

Bin the butt message to help protect waterways

A Reef HQ Aquarium diver was recently sent on a special mission to fish BIG butts out of the Aquarium's Predator Tank.

Thankfully, they were harmless fake cigarette butts and the exercise was promoting Townsville's role in the national Butt Free City campaign.

Townsville City Council has joined communities across Australia in the annual Butt Free City campaign to rid streets and waterways of the ubiquitous cigarette butt.

A major focus of the Townsville campaign is a call for people to PLEASE BUTT IT, THEN BIN IT®.

The aim is to help reduce the impact of cigarette butt littering on the Great Barrier Reef Marine Park and surrounding beaches.

Townsville City Council's Environment and Sustainable Development Committee chair Cr Vern Veitch said an estimated seven billion cigarette butts became litter every year.

"The Council has a major street cleaning program, but even so, it's estimated that one in 10 butts escape through drains into local beaches and the Marine Park area," he said.

"It's important everyone makes an effort to keep butts off our streets.

"People should also understand that throwing away a cigarette butt in public is littering and can incur a fine."

Great Barrier Reef Marine Park Authority Director of Coastal

Ecosystems and Water Quality Hugh Yorkston commended Townsville on the initiative.

"Townsville City Council has partnered with the GBRMPA through the Reef Guardian Council program to recognise and foster environmental stewardship for the Great Barrier Reef," he said.

"The Butt Free City initiative encourages people to butt and bin it and is a great example of council encouraging best environmental practices within our community."

Butt Free City is an initiative of the Townsville City Council in partnership with the Butt Littering Trust, an independent body established to help local government, business and organisations manage butt littering.

Executive Director of the Butt Littering Trust Wendy Jones said most people weren't aware of the huge and unnecessary impacts a small butt can have on our fragile environment.

"Cigarette butts don't just go away. The filters are made from synthetic fibre and, depending on conditions, can take anywhere from many months and 15 years to break down," she said.

"Our experience shows positive education can help people change their behaviour.

"We congratulate Townsville City Council for recognising butt littering as the serious issue it is, and for addressing it so comprehensively as part of this national effort."

Graziers dedicate land for environmental rehabilitation

Far north Queensland's Green Corridor Project got a boost recently though the generosity of local graziers Mark and Karen Gallo, and assistance from the Australian Government's Reef Rescue Plan.

The Green Corridor Project, started in 2005, aims to rehabilitate the entire length of the Barron River over a 20-year period and recently began undertaking some major works to help improve the quality of water flowing to the Great Barrier Reef.

Green Corridor Manager Penny Scott said Mark and Karen Gallo had dedicated five hectares of their grazing property to environmental rehabilitation.

"Some of the work that will be undertaken includes the redirection of a storm water drain, which has caused major bank erosion, to a natural Bluegum wetland.

"This will contribute to the rehabilitation of the wetland and repair the eroded bank which will be undertaken through engineering.

"These actions, coupled with five hectares of Mabi forest rehabilitation, will produce impressive water quality and biodiversity results."

Mabi is one of Australia's most endangered forest types. Of its original Pre-European extent, less than five per cent remains.

Penny said 11 500 Mabi forest trees would be planted, including approximately 4000 during two community planting days following significant work carried out by volunteers.

"Before we could undertake any planting we had to slash and spray to remove walls of lantana and guinea grass," she said.

"We are now ready to get down to work and replant this Mabi forest that will not only assist water quality outcomes for the Great Barrier Reef but also provide vital habitat for iconic species like tree kangaroo."

Penny thanked the couple for their commitment to this incredible habitat and ecosystem.

Since the Green Corridor Project started almost 70 000 trees have been planted and maintained. The rehabilitation of the Gallo site will take that total to around 80 000 trees.



Reef HQ diver Claire Bisseling collects giant cigarette butts from the Predator Tank

Coastal bird training takes flight

A field training program aimed at ensuring marine managers have the skills to identify and count seabirds in the Great Barrier Reef World Heritage Area took place recently.

Twenty-one participants attended two separate training sessions at key breeding sites in the northern and southern Great Barrier Reef.

It covered everything from bird identification to fieldwork estimating the number of birds in flocks, their age and the stage of nesting.

Course trainer Malcolm Turner from the Field Management Program at the Great Barrier Reef Marine Park Authority (GBRMPA) said observing and recording seabird populations was an important part of understanding overall ecosystem health.

"Given the geographic area of the Marine Park and the need for regular bird counts at priority sites, it is helpful to have a range of people trained with these skills," he said.

"Keeping a close eye on seabird populations is important in helping us get a good understanding of their numbers, any threats and whether protection measures are working.

"Seabirds play an important role in the health of ecosystems on the reef's islands and cays where they are responsible for the dispersal of some plant species and for providing nutrients in their droppings.

"We are particularly concerned with seabirds in the face of threats like climate change.

"Climate change can impact on their ability to find bait fish to feed themselves and their chicks.

"The rise in sea levels could cover the low-lying islands and cays, with the water providing a reduction in the area available for nesting."

The training covered important theoretical elements, with participants then able to put their knowledge to the test during field visits.

"Many seabirds nest at places like Michaelmas Cay that are popular with visitors so it is important to ensure that visitation is having a minimal impact on nesting sites," Malcolm said.

"Participants counted about 15 000 birds at this location which suggests it remains an important site for nesting birds."

As part of the training further fieldwork was also undertaken at Heron Island, another key site often visited by Department of Environment and Resource Management Rangers who submit regular reports on the status of the birds.

This latest training assists with ongoing observations undertaken under the GBRMPA's Field Management Program.



Participants counted thousands of seabirds at Michaelmas Cay in the northern part of the Marine Park

Ship master fined for breaching Marine Park regulations

The master of a Hong Kong-registered bulk carrier appeared in the Gladstone Magistrates Court recently for breaching shipping regulations in the environmentally sensitive Whitsunday area of the Great Barrier Reef Marine Park.

The man pleaded guilty to travelling in the Whitsunday's Compulsory Pilotage Area without a pilot on-board and travelling outside the designated shipping lane, breaching mandatory requirements in the Marine Park.

He was charged with offences committed against Section 59B(1) of the Great Barrier Reef Marine Park Act 1975 and received a fine of \$6,500 with \$71.20 court costs.

Australian Federal Police National Manager of Economic and Special Operations Justine Saunders said that the appearance of the master of the ship before the court sent an important message to all owners of bulk carrier ships entering Australian waters that they must take their environmental responsibilities seriously.

"The protection of the Australian environment is an issue the

Australian Federal Police takes very seriously and the AFP has a role in detecting and enforcing laws designed to protect our environment," Commander Saunders said.

GBRMPA Chairman Russell Reichelt said that shipping was a legitimate use of the Marine Park and it was carefully managed to ensure vessels travelling close to coral reefs don't harm the marine environment.

"The Whitsundays are an environmentally sensitive area within the World Heritage listed Great Barrier Reef Marine Park and a popular tourism area. It is important all shipping activities are carried out appropriately and without harm or potential harm to the environment or visitors," he said.

"Fortunately, the action of the master of the ship did not cause major damage to the marine environment on this occasion. However, in the face of threats like climate change, it is important that all reef users comply with regulations to help ensure the Reef remains healthy and is not damaged."

Marine Park regulations stipulate it is mandatory to have a pilot (on-

board vessels above 70 metres long or loaded chemical tankers) in the Whitsunday Island Compulsory Pilotage Area due to the navigational complexity, traffic density, and high environmental value of the area.

The navigational task within the Whitsunday Island regions is demanding because of numerous reefs, including fringing reefs and continental islands.

The principal risks of not having a pilot onboard relate to the potential for ship grounding, ship collision and chemical and oil pollution. A 2001 oil spill risk assessment by the GBRMPA and Maritime Safety Queensland identified the Whitsunday Island region as was one of the four highest risk areas identified in the study.

The Australian Government has a range of requirements in place to aid safe navigation of these vessels and to protect the marine environment.

Ships can access designated Shipping Areas and the General Use (Light Blue) Zone without a permit when transiting the Marine Park. However, to access all other areas, ships require a permit.



First-hand experience to make bright future decisions

Students from two Palm Island schools visited Reef HQ Aquarium recently to get an insight into reef-related careers during a special behind-the-scenes tour of the facility.

The tour was one of several activities planned for the ten students from Bwgcolman Community School and Palm Island Kirwan Campus during a three-day educational trip to Townsville.

Made possible thanks to funding by the Great Barrier Reef Marine Park Authority (GBRMPA), the trip was organised to help students learn about sustainable reef practices and the possible career paths in the environment, tourism and hospitality sectors.

GBRMPA General Manager Peter McGinnity said the trip provided students with a firm base to choose their future career and also provided the students with the opportunity to learn how to look after the Great Barrier Reef.

"We're happy to support the students' trip to Townsville while utilising our partnerships to offer a comprehensive program of valuable activities for them to participate in," he said.

"The students chosen to attend the three-day program were selected by their schools due to their keen interest in developing careers related to the Great Barrier Reef and we were happy to provide them with the information to further develop their career interests."

Over the course of the three days students attended:

- A careers tour at Reef HQ to see first-hand the work that's involved in being an aquarist and marine biologist
- The Barrier Reef Institute of TAFE's Hospitality and Tourism Department for careers advice and a tour of the tourism and hospitality section
- The Australian Indigenous Tourism Conference - Youth Day to learn about the increasing demand for culturally-authentic Indigenous tourism products and development, training and employment opportunities in the tourism sector
- A Reef Check activity to learn how to identify coral under stress and coral damage
- A catchment tour with Townsville City Council staff to learn about water quality and its affect on the marine environment.

Sharing sea country information with students

Traditional Owners and marine park managers shared information about working together to manage sea country with an Innisfail Reef Guardian School.

The students from Innisfail State High School legal studies class heard about the development of the Traditional Use of Marine Resources Agreement (TUMRA) for Mamu Traditional Owners.

They also heard how the TUMRA program brings benefits for all stakeholders.

The presentation followed a special request from the class teacher to coincide with a curriculum unit on legal issues such as Native Title and conservation.

Tony Kyle from the GBRMPA said it was particularly relevant for the students to hear about the Mamu TUMRA given it relates to the sea country near Innisfail.

"We have developed a close partnership with many Traditional Owners along the coast and it's great to be able to share our experience with school students," he said.

"This helps them begin to form an understanding of cultural values.

"In particular, we were able to provide these students with information on matters relating to the accreditation of TUMRAs and other legal issues such as Native Title in the Marine Park area.

"TUMRAs are just one of the ways that marine managers and Traditional Owners work together and it's an effective way to ensure the Marine Park is used sustainably."

TUMRAs are a suite of management arrangements, developed by Traditional Owners in consultation with GBRMPA, to ensure traditional use of marine resources is ecologically sustainable and cultural practices can continue.

There are currently four accredited TUMRAs with the Giringun, Mamu, Woppaburra and Wuthathi Traditional Owners.



Students from Bwgcolman Community School and Palm Island Kirwan Campus attend the Australian Indigenous Tourism Conference - Youth Forum in Townsville



New water wise project reaping rewards

St Frances Catholic Primary School at Tannum Sands is taking an innovative approach to being water wise by using collected stormwater to irrigate their school grounds.

The Reef Guardian School is collecting stormwater from the 30-hectare catchment encompassing run-off from their school and adjacent land to irrigate their oval.

By collecting and reusing run-off, the school is expected to save 275,000 litres of reticulated water and several hundred dollars each year.

School Principal Andy Nicholls said the environmental benefits were a great spin-off from this educational initiative.

"We're really proud of being able to help ensure the efficient use of stormwater flows while ensuring the flow of clean water into the Boyne River system and the Reef," he said.

"The students are having a great time seeing this project unfold and in the process are learning a lot about the benefits of on-ground environmental projects.

"Not only are we saving water but we're also saving money on the cost of irrigating our grounds and in the long-term this is going to be quite a substantial cost saving.

"It will also mean in times of drought that there will be enough water to fully irrigate the oval and surrounding gardens for one year.

"There will also be benefits for the natural environment as the water flowing to swamps and rivers will be cleaner."

The water is collected in a main drainage area that has two 900mm diameter pipes running the full length of the school property and flowing into a three mega-litre storage area.

The water storage area consists of trapezoidal structure 85 metres long, 1.2 metres deep with a weir and crossing.

They will store 300,000 litres of water at any one time and still allow stormwater flows to run in to natural water system via an earth drain into the mangroves and Boyne River.

The weir is designed to accommodate a flowing structure that allows continual filling during storm and rain.

The water in storage is automatically pumped into a system of ten 22,000 litre tanks and a series of pipes and filters will process the water in the remainder of the system.

The cost of this water conservation is \$80,000, made possible thanks to a range of Australian Government water grants.

St Frances Catholic Primary School has been recognised for their environmental ingenuity by winning the Reef Guardian School's Bright Sparks Award from the Great Barrier Reef Marine Park Authority for this project.

Reef Guardians in action

Our Reef Guardian Schools are doing some fantastic work in their school communities to help protect the Reef. We are so inspired by their efforts that we decided to start showcasing their good work.

Reef Guardian Schools program is an education initiative of the Great Barrier Reef Marine Park Authority. Currently in its seventh year, over 60 000 students in more than 150 schools across Queensland are involved in the program.

Habitat heroes in Hermit Park

The grounds of Hermit Park State School in Townsville have undergone a makeover as part of the school's innovative approach to environmental education.

The Reef Guardian School is doing some great work in transforming their school grounds into habitat sanctuaries for native wildlife.

Not only is this beautifying their surrounds, but it's providing new habitat for the iconic native bush stone-curlew that calls the area home.

The school is working in partnership with Townsville City Council and Greencorp volunteers to restore curlew habitat at the back of the school.

Native bush stone-curlews were previously very common throughout Australia but have declined in many areas due to habitat loss and predation by feral cats.

Projects like this that restore habitats are very important for the health and protection of catchments and the Great Barrier Reef.

Hermit Park School also maintains a butterfly enclosure that houses Australia's largest butterfly, the Cairns birdwing butterfly, and the school has a native frog pond.

This school is setting an excellent and inspiring example of how we can all do our bit to help the environment.



Students showcase their project

Lessons from the Great Barrier Reef could help other precious corals



Coral reefs around the world are set to benefit from a partnership between the Great Barrier Reef Marine Park Authority and the International Union for Conservation of Nature (IUCN).

The partnership aims to help the world's reefs cope with climate change by sharing information and experience across continents.

Dr Ameer Abdulla from the IUCN is a conduit between Australia's world-leading marine managers and their counterparts in developing countries.

Having grown up on the Egyptian coast and completed a PhD in coral reef ecology in Australia, Ameer is well-placed to work across cultures and is aware of what Australia has to offer the world's reef managers.

"In this race against time, many countries are struggling to keep up with the growing threats to their coral reefs and learning from marine managers in Australia could be instrumental in helping to protect the world's reefs," he said.

"The world has already lost 19 per cent of its reefs since 1950 and stands to lose another 35 per cent in the next 40 years.

"Most coral reefs occur in developing countries and these reefs face the most uncertain future.

"Australia's Great Barrier Reef, on the other hand, is the largest and healthiest reef system in the world.

"We hope to use lessons learned on the Great Barrier Reef to develop strategies to manage the impacts of climate change where they are needed most."

Great Barrier Reef Marine Park Authority Director of Climate Change Dr Paul Marshall believes that Australia is well-placed to assist

reef managers around the world and welcomes the partnership with IUCN.

"Over more than 30 years of managing the Great Barrier Reef, we've had wins and losses but overall we learned important lessons that now position us at the forefront of coral reef management," he said.

"If we can transfer tools and expertise from Australia to other nations, we may be able to help the world's reefs avert the worst case scenarios predicted under climate change."

For places like the Indian Ocean which lost 50 to 90 per cent of their reefs in 1998, time is of the essence.

In the Red Sea many countries rely on coral reef tourism as a major contribution to their economy, with individual reef sites attracting up to 300,000 visitors each year.

"These countries are dealing with some very serious pressures and at the same time are also responsible for managing some of the world's most unique coral reef systems," Ameer said.

"For example, the Red Sea is particularly special because the corals there have evolved to tolerate the highest temperatures known for coral survival in nature."

Ameer believes that many of the coral reef systems the IUCN are focusing their efforts on are of international significance for conservation.

He intends to feature GBRMPA climate change initiatives like coral bleaching monitoring protocols, adaptation strategies, vulnerability assessments, volunteer observer programs, sustainable tourism initiatives, and sea temperature monitoring systems as existing tools for developing countries to quickly tackle climate impacts on reefs.

Recent graduates get hands on skills in marine management

For the first time, the Great Barrier Reef Marine Park Authority (GBRMPA) has welcomed four recent university graduates to the organisation as part a formalised graduate program.

The graduates with qualifications in environmental studies, marine science and law will undertake a structured work based learning and development program.

GBRMPA Chairman Russell Reichelt said the program aimed to assist the graduates with making the transition from study into the workforce.

"It's great to have these graduates on-board and be able to help them gain useful experience in the varied aspects of marine management," he said.

"Our aim is to give them the opportunity to gain practical work experience that will assist with building their skill base in marine management.

"GBRMPA is internationally-recognised as a leader in marine conservation so this experience will see them well-placed to continue a career in this field."

The program was designed to build management and future leadership capability by developing the knowledge, skills and networks of the graduates.

The graduates will undertake a 24-month work based learning and development program.

This includes work based learning through four six-month rotations with various work groups within the agency, providing mentoring, and structured learning and development.



Elise Godwin, Jake Hennessey, Lisa Perrett and Zoe Robinson

Recognising achievements

The Honourable Virginia Chadwick AO received an Honorary Doctorate at James Cook University's graduation ceremony recently.

The former Chair of the Great Barrier Reef Marine Park Authority was recognised for her outstanding service to the community and for her commitment to the conservation of the Great Barrier Reef with an Honorary Doctorate of Science.

Following her retirement from politics, Virginia was Chair of the GBRMPA from 1999 – 2007. During this time, she instrumented and directed the implementation of the Great Barrier Reef Marine Park Zoning Plan (RAP).

The project involved two of the largest community consultation efforts ever conducted in Australia and set international benchmarks in marine conservation.

Grazier signs up for Reef Rescue

A young grazier is one of the first in the Bundaberg area to sign up to the Australian Government's new Reef Rescue Plan.

Twenty-eight-year-old Joe Lyons operates a 980 hectare grazing and cropping property adjacent to the Burnett River at Pine Creek, 25km south-west of Bundaberg.

After growing up near Glenmorgan in Queensland's Western Downs and completing university study, in 2002 Joe and his parents moved to the Pine Creek property known as 'Fig Tree Park'.

Joe said grazing was an important part of the farming operation.

"We run about 250 head of Brahm cross cattle, and grow about 200 acres of fruit trees including bananas, macadamias and avocados," he said.

He said the property had around two kilometres of direct frontage to the Burnett River and that cattle had caused erosion problems in the past.

"There's no doubt cattle can have an impact on water quality in the river," he said.

"The steep river banks are very prone to erosion and the cattle tracks get quite boggy, so you get extra sediment and nutrient in the water."

Under the Reef Rescue grant, over two kilometres of fencing will be installed to prevent direct stock access to the river, and alternative watering points will be created.

Joe said a property management plan would also be prepared to help with strategic weed and fire management.

"There's a big problem with noxious water weeds in the river like water hyacinth and salvinia," he said.

"Once we restrict the cattle, it will reduce the chance of these weeds getting into our stock dams."

In time, the steep banks of the river will recover.

"Once the ground cover comes back, they should hold well and help reduce the sediment and nutrient load," he said.

"That has to help the river and ultimately the Great Barrier Reef – it's all about sustainability."

New faces at Reef HQ

Training is now underway for the new recruits who have joined the volunteer contingent at Reef HQ Aquarium in Townsville.

Over 60 people applied for this year's intake, and 42 successful applicants are now undergoing training to become official Reef HQ Aquarium volunteers.

The new intake of volunteers will officially graduate in June this year.

Reef HQ Manager Fred Nucifora said it was great to see so many enthusiastic volunteers joining the program.

"Volunteers are essential to the running of Reef HQ Aquarium and we are really privileged to have great people involved in our program," he said.

"The new volunteers are very keen and their enthusiasm helps ensure visitors to the Aquarium have a great experience."

The basic training course runs for seven weeks part-time.

It covers how Reef HQ Aquarium was constructed, how reefs are formed, as well as interactive workshops on fish, corals, invertebrates and marine reptiles.

Additional training sessions are also provided for volunteers in customer service, public speaking and how to interpret Reef HQ Aquarium's exhibits to visitors.

Since its inception in 1987, the Reef HQ Volunteers Association has trained over 1000 volunteers.

They have collectively contributed over 285,000 hours of voluntary service, which is valued in excess of \$4 million dollars.

Volunteers are aged 20 to 84 and are from a variety of backgrounds, including international university students and retirees.

Some volunteers from the first volunteer intake in 1987 are still volunteering with Reef HQ Aquarium, 22 years on.



reefHQ
AQUARIUM

Thank you to past volunteers

Fifty-two Reef HQ Volunteers enjoyed a themed dinner with in Reef HQ Aquarium recently as part of a thank you for their voluntary contribution over the past year.

Hosted by Reef HQ staff, the themed evening included a dinner and entertainment by Reef HQ staff and is part of an annual event to show appreciation for the contribution of volunteers.

As part of the evening, individuals were recognised for milestones in their voluntary service hours. Volunteers are recognised at 200, 500, and 1000 hours and every 1000 hours onwards.

Each year, the 140 Reef HQ volunteers collectively contribute on average 12,500 hours of voluntary service to Reef HQ Aquarium.

Volunteers hit the beach for another clean-up

A war will be waged on rubbish as Conservation Volunteers Australia take to the beaches near Mackay over the coming months.

The clean-ups are part of a series of beach projects initiated by the Great Barrier Reef Marine Park Authority's regional office in Mackay.

The group will target beach areas near Salonika and Louisa Creek as part of coordinated clean-ups that began last year.

Conservation Volunteers Australia Regional Manager Wendy Eiteneuer said they were looking forward to hitting the beach and giving it a makeover.

"Our volunteers are passionate about the environment and are pleased to be able to help clean-up their own backyard," she said.

"The group began their clean-ups last year and, thanks to their efforts, various types of rubbish has been removed from our environment.

"Some of the unusual things volunteers collected in their last clean-up near Christmas included a discarded Christmas tree and electrical appliances.

"We hope these clean-ups set a good example and encourage the rest of the community to dispose of their rubbish carefully and collect any rubbish they come across."

Conservation Volunteers Australia is a national organisation that has approximately 10,000 volunteers involved in 2000 conservation programs nationally.

The volunteers' good work for the up-coming projects will be supported through Conservation Volunteers' partnership with BMA Hay Point Services.

The next clean-up is scheduled for 15 and 17 June 2009. Anyone interested in participating in these projects can contact the Mackay office by on (07) 4951 0933 or email mackay@conservationvolunteers.com.au.

Play it safe - report but don't touch dead fish

An investigation is underway following the discovery of two dead grunter in Trinity Inlet found to have a blood poisoning disease.

Primary Industries and Fisheries Biosecurity Queensland general manager Allison Crook said it was too early to say if a link existed between the grunter and the Queensland gropers found dead last year.

"We're appealing to members of the public to let us know immediately if they find sick or unhealthy fish washing up on the beaches or in waterways of north Queensland," she said.

"This includes any anglers who see or catch an unhealthy fish.

"We need to retrieve the freshest tissue samples possible from dead marine fin fish so we can successfully analyse them. Fish that are too decayed will not be suitable for sampling."

Queensland Health advises it is safe to catch and eat grunter and other fish in the area as long as the fish were cooked properly.

Queensland Health reminded fishers to take care with any cuts, abrasions and penetration wounds from fish spines they received when handling fish. These wounds could become infected.

All wounds should be cleaned promptly and thoroughly and an antiseptic solution applied if available.

It is not wise to touch the dead fish, especially if they are decomposed - just call Biosecurity Queensland as soon as possible on 13 25 23.

Reef fish working group formed to assist industry

Queensland Government Primary Industries and Fisheries Minister Tim Mulherin recently announced a working group to look at fisheries issues post cyclone Hamish.

The group has been established to assist the commercial fishing industry in the wake of damage caused to reefs, and in turn fish populations, by cyclone Hamish.

"Industry is telling me that there has been a reduction in the catch of coral trout from Bowen south," he said.

"This is expected to persist for 12 to 18 months.

"The Working Group will include representatives from Primary Industries and Fisheries, the Great

Barrier Reef Marine Park Authority, Queensland Seafood Industry Association, marketers, and affected fishers.

"This group will look at short and long term initiatives to assist the industry.

"These will be developed and refined over the coming weeks.

"This particular event has not triggered the Natural Disaster Relief Arrangements under the joint state/commonwealth scheme."

That scheme focuses on the loss of public and private infrastructure such as that which occurred in the Victorian bushfires and the Gulf floods.

Interesting Facts

Whales are iconic species that hold a special significance for many users of the Great Barrier Reef. For some Aboriginal and Torres Strait Islander people, such as the Woppaburra people of the Keppel Islands, the whale (Mugga Mugga) is the clan totem that connects them to their ancestral land and sea country as well as to their ancestors.

Whales will soon be sighted in the Great Barrier Reef Marine Park as they make their annual migration from the colder southern oceans to warmer northern waters. This presents an excellent opportunity for people to observe these amazing animals, but don't forget to take care around whales and abide by approach distances.

More information is online at www.gbrmpa.gov.au

Doing your bit to look after it!

Household tips for a healthy Reef

It's easy being green – and often you'll find it's also easy on the hip-pocket. By reducing the amount of energy you use around your home, you can personally contribute to the climate change solution and help build the health of our Great Barrier Reef.

- Replace incandescent lights with compact fluorescent lights – they last longer and are cheaper to run
- Choose energy efficient products
- Turn off TVs, DVD players, stereos, game consoles and other equipment at the wall
- Turn off unnecessary lights around the house
- Set your air-conditioner between 25 degrees
- Wash your clothes in cold water using cold water detergents to save energy on heating
- Hang washing on the line rather than putting it in the dryer – your electricity bill will thank you
- Switch to 'green' electricity produced from renewable sources by contacting your energy provider
- Consider signing up for the Queensland Government's Climate Smart program where, for \$50, a contractor will come to your home to provide advice on and install energy saving devices like light bulbs and a low flow showerhead.

For more environmental tips visit www.gbrmpa.gov.au or www.climatesmart.qld.gov.au



New recruits to local marine advisory committees

A wave of new recruits will help advise the Great Barrier Reef Marine Park Authority (GBRMPA) on marine management and issues affecting the Reef.

Members of the 11 new Local Marine Advisory Committees (LMACs), which span the length of the Great Barrier Reef coastline, officially started their three-year terms last month following the expiration of the previous committees' terms last year.

These voluntary community-based committees were established in 1999 to enable the GBRMPA to get first-hand advice on local issues and ensure local communities have effective input into the management of the Marine Park.

Composition of each LMAC varies depending on local interests and industries, but members are volunteers who have traditionally represented a range of stakeholder groups, including commercial fishing, recreational fishing, government, environmental groups, tourism, and farming.

LMACs provide both an advisory and a communication role between the community and the GBRMPA. To find out more about the LMAC in your region visit www.gbrmpa.gov.au

Creature Feature

Frigatebirds

The Great Barrier Reef Marine Park is home to a range of plants and animals, including unique and interesting seabirds such as frigatebirds that nest on islands.

- Frigatebirds are the most aerial of tropical seabirds, spending most of their time soaring high in search of prey.
- Their alternative name - 'man-of-war' - stems from their habit of chasing other seabirds.
- Frigatebirds never land on the water and feed by snatching up surface marine food and scraps or harassing other seabirds until they disgorge their catch. They are also known to prey on unguarded eggs or young chicks from nesting colonies of other seabirds.
- They nest close to other seabird colonies so they can harass them for food. The nests are untidy, built from sticks, feathers and other material. Both parents build the nest.
- Chicks are naked when born and later covered in grey down. It can take four to five months to fly but the period of dependence on the adult for food may take longer.



Interesting Facts

Sea snakes breathe air and have valved nostrils so that when they dive down they do not get a nose full of water. They usually stay down for about 20 or 30 minutes before coming up for another breath of air.

Community Links

A profile of **Margaret Johnson**

General Manager
Communication and Policy Coordination



It's a long way from a rural cattle property in northern Australia to the nation's capital but Margaret Johnson feels equally at home in these contrasting places.

While the new General Manager for Communication and Policy Coordination now calls Canberra home, she has fond memories of spending time in regional Australia.

"I've lived in Canberra for a number of years now but had a wonderful time growing up on my family's property in Queensland," she said.

"Living in regional areas and large cities has been quite useful in my professional life because it helps me understand the issues confronting Australians from rural and urban backgrounds."

Margaret's family moved to Australia from England when she was just four-years-old and, after spending time on the cattle property, they moved to the Southern Highlands in New South Wales.

The move to Canberra was initially for university, but the city opened many doors for Margaret professionally and led to a challenging career in the public sector.

After a stint living and working in New South Wales, Margaret joined the staff of the then Minister for Education, Training and Youth Affairs, the Hon Dr David Kemp MP, in Canberra.

Margaret spent eight years with Minister Kemp, as he changed portfolios and she changed roles, providing her with a remarkable insight into government.

"I think developing and implementing public policy is an interesting process – it's really about seeing a problem and then working out the most practical options to solve it on the ground.

"I've been fortunate to work for a number of departments and agencies where I've been able to acquire in-depth knowledge of political processes, policy development, program management and government communications."

Before joining the GBRMPA Margaret was the Director of the Commonwealth Environment Research Facilities (CERF) program for the Department of the Environment, Heritage, Water and the Arts.

A major part of the CERF program is the north Queensland-based Marine and Tropical Sciences Research Facility which focuses on improving the health of the Reef, the Wet Tropics and Torres Strait.

"I was attracted to the GBRMPA because I had been involved in some of its activities while I was working in ministerial offices and as Director of the CERF program," she said.

"The Reef is such an amazing natural treasure and when this role came up, I jumped at the opportunity to join an organisation charged with protecting it.

"I enjoy working with like-minded people and taking a strategic approach to managing the Reef for all to enjoy."

Calendar of events

03 – 09 May

International Composting
Awareness Week

15 May

Walk Safely to School Day

22 May

International Day for
Biological Diversity

23 May

World Turtle Day

01 June

Start of National Oceans Month

05 June

World Environment Day

08 June

World Ocean Day

17 June

World Day to Combat
Desertification and Drought

GBRMPA contacts



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