

# SeaRead

Marine Park news from catchment to coral

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Australian Government

Great Barrier Reef  
Marine Park Authority

## What's inside

- Watch out for whales  
when on the water 3
- Reef HQ turtle hospital  
update 4
- Leopard sharks journey  
to a new home 5
- Carbon emissions  
threaten fish  
populations 6
- Glenella State School  
takes out recycled art  
competition 8

## Future leaders travel from Cape York and Palm Island to learn about the Reef



Rosemary from Reef HQ Aquarium shows Tariq, Joshua and Kathleen one of the Aquarium's tanks

More than 30 school children from Indigenous communities in Cape York and Palm Island travelled to Townsville in June for an action packed program of workshops and activities focussed around marine conservation.

The students in years four through to seven called Reef HQ Aquarium home for three nights in a 'sleepover' education program which is part of the Great Barrier Reef Marine Park Authority's Reef Guardian Schools and Sea Country Guardians programs.

Reef Guardian Schools Program Manager Megan Sperring said the visit provided an opportunity for students to learn about environmental projects that can be taken back and initiated in their communities.

"The project exposed students to a range of people, ideas and opportunities to assist them with developing a sustainable future for themselves and their communities," she said.

During the visit to Townsville students linked modern science with traditional knowledge to gain a broader understanding of some of the plants and animals of the Great Barrier Reef.

Activities included turtle research during a visit to Reef HQ's Turtle Hospital, and a dugong workshop at the nearby Cultural Centre.

In another activity students took on the role of climate change 'detectives', investigating the impacts of climate change and exploring the roles of different species in the reef ecosystem.

The following day the visiting students travelled to Pallarenda Beach for seagrass monitoring and a beach cleanup, where they were joined by local Belgian Gardens State School students also involved in the Reef Guardian Schools program.

Aboriginal and Torres Strait Islander readers are advised that this publication may contain names and images of deceased persons.

### DISCLAIMER

While all efforts have been made to verify facts, the Great Barrier Reef Marine Park Authority takes no responsibility for the accuracy of information supplied in *SeaRead*.

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# Message from the Chairman



As the calendar rolls over into a new financial year, the Great Barrier Reef Marine Park Authority (GBRMPA) remains busy focusing on a range of activities and projects.

The GBRMPA's Sea Country Guardians Program recently hosted a fantastic local event. More than 30 school children from communities as far north as Lockhart River and neighboring Palm Island visited Townsville for a range of educational activities and information exchange with local Reef Guardian Schools. To this end, the Sea Country Guardians program is being developed to foster stewardship and a community culture of caring for the Great Barrier Reef in Indigenous communities, particularly amongst young people.

Reef HQ's June school holiday program has been extremely popular, with this year's focus on local Traditional Owners' cultural ties to the Great Barrier Reef and its marine life. The program coincided with NAIDOC Week, which is held annually in July to celebrate Aboriginal and Torres Strait Islander cultures and recognise the contributions of Indigenous Australians in various fields.

The shorter days and cooler nights are also a sign the majestic giants of the ocean, whales, are making their annual migration north along the coastline to the warmer waters to court, mate, give birth and rear their young.

It is truly humbling to witness these magnificent creatures, but at the same time we are reminding people to watch out for whales on the water, and take precautions to minimise the impact of human activities during this important time for the animals.

That message is particularly timely given 2010 is the United Nations' International Year of Biodiversity, and September is biodiversity month.

Biodiversity loss affects ecosystems, making them more vulnerable and less able to cope with change and supply valuable resources. The growing population along the Great Barrier Reef coast is having an impact on the natural environment, with changes in biodiversity more rapid in the past 50 years than at any time before in history.

This pattern is a concern for us, and we continue to work with communities and industries on the ground to protect the Great Barrier Reef. One such initiative is local marine tourism operators taking part in our Eye on the Reef monitoring program in June.

Our tourism operators are best placed to assist in monitoring the ecosystem health of the Great Barrier Reef, visiting dedicated areas of the Reef on a weekly, if not daily, basis.

There are now 18 operators in the offshore Port Douglas and Cairns area participating in the program, monitoring 22 sites. The data gathered

provides a valuable, long-term picture of what is happening on the Reef, helping managers and scientists better monitor and manage the marine ecosystem.

Information gathered through these monitoring programs feeds into our understanding of the health of the Reef and has a role to play in guiding management decisions. The information is particularly useful and relevant in the context of the key threats to the Reef that were identified in the Great Barrier Reef Outlook Report 2009.

A wealth of information was collected through the compilation of the report and is available online. As managers of the Great Barrier Reef Marine Park it is our mandate to both implement management actions to protect the Reef and share our knowledge around the world. Outlook Online – available on our website [www.gbrmpa.gov.au](http://www.gbrmpa.gov.au) – is just one of the tools to do this. I encourage you to view this resource. We all have a role to play in the future of the Great Barrier Reef.

Regards

Russell Reichelt  
Great Barrier Reef Marine Park  
Authority

Continued from page 1

Students from Belgian Gardens used their ingenuity to create various contraptions for the cleanup, reusing and recycling materials from around the home.

Next stop – Holy Spirit School. Here students had the opportunity to explore an Indigenous bush tucker garden and identify plants by their common, scientific and traditional names. Leaves from these plants were then used in a craft activity.

Sea Country Guardians is a stewardship program focussing on Indigenous people's connections to their sea country.



Sebastian, Grace, Ben and Bella make up the "clean team"

# Watch out for whales when on the water

*As migrating whales make their way north along Queensland's east coast, the Great Barrier Reef Marine Park Authority (GBRMPA) is reminding vessel operators to watch out for whales and know the approach distances.*

Between May and September each year migrating humpback whales can be seen in the Great Barrier Reef Marine Park. Having left the colder southern oceans they undertake an annual migration to warmer northern waters – to court, mate, give birth and rear their young.

GBRMPA Species Conservation Manager Dr Mark Read said it was important to abide by approach distances for both the safety of whales and onlookers.

"Whale watching regulations are in place to ensure whale watchers are kept safe and whales are not harassed or disturbed," he said.

"These are large and powerful animals; an adult humpback whale is between 12 to 15 metres long and can weigh up to 40 tonnes. The regulations are there to make sure these majestic animals can freely go about their usual activities.

"A whale that is disturbed is less likely to spend time at the surface and consequently whale watchers may not get the best from the experience.

"Disturbing a mother and its calf can cause the calf to stop feeding and move away from its mother which is a situation that must be avoided. Separating a mother and calf can also be dangerous should the mother feel her calf is being threatened in any way."

Legally, vessels must stay at least 100 metres away from whales in the Marine Park and 300 metres away in the Whitsunday Whale Protection Area. Jet skis must stay at least

300 metres away from whales throughout the Marine Park.

Mark said while whales could be social animals and may approach boats or people in the water, it was important not to approach them for both the safety of the whales and people watching them.

"The best whale watching experience is when whales are given the space to do as they normally would."

If you encounter a sick, injured, stranded or dead whale take as many details as possible and report it to the Department of Environment and Resource Management on 1300 130 372.



Humpback whale with calf



Humpback whale



Minke whale

# Reef HQ turtle hospital update

Reef HQ Aquarium's Turtle Hospital has been rehabilitating sick and injured marine turtles since August 2009. Next time you visit Reef HQ take one of our Turtle Hospital tours, available twice daily at 12.00 noon at 3.30 pm. Since these tours commenced in late 2009, there have been more than 7000 visitors to the Turtle Hospital.

To date the Turtle Hospital has cared for 18 marine turtles, including 14 green, three hawksbill and one loggerhead. Our current patients include:

**Dusty**, a hawksbill turtle, was admitted to the hospital in September 2009 with a collapsed lung and pneumonia. Due to the colder climate and water temperature, Dusty will be released in spring this year.



Dusty



Barney

**Barney**, a green turtle, was admitted to the hospital in April 2010 with kidney problems and suspected oedema (fluid retention). Barney is currently being monitored and is expected to make a full recovery.

**Ernie**, a green turtle, was admitted to the hospital early May 2010 with a lung infection and a bacterial infection resulting in ulcers and lesions on his shell. Ernie has taken his second course of antibiotics and is expected to make a full recovery within six months.

Tom Tom was admitted for rehabilitation at Reef HQ Aquarium after being kept as a pet since he was a hatchling. He was the main attraction in the Reef HQ Aquarium. Sadly he died following unexpected toxemia (toxins found in the blood from bacteria).

There is still much to learn about the health and care of marine turtles and community and business support helps fund the hospital. If you would like to make a donation to the Turtle Hospital you can do so by calling (07) 4750 0800, or in person when visiting Reef HQ Aquarium.

Anyone who finds an injured, sick or stranded turtle is urged to contact the Department of Environment and Resource Management on 1300 130 372.



Tom Tom

## Baby spotted seahorses

Reef HQ Aquarium is sometimes a nursery for baby marine creatures great and small.

We are delighted to welcome some new arrivals ... hundreds of delicate spotted seahorses. Found in shallow waters, estuaries and reefs, spotted seahorses feed on seagrass and ambush small crustaceans that swim by, sucking them up through their snout.

You can see the spotted seahorses up close next time you visit Reef HQ Aquarium, or on our Facebook page where you can watch video footage of the baby seahorses feeding.



A baby spotted seahorse approximately two weeks old and two centimetres long

# Leopard sharks journey to a new home

Reef HQ Aquarium farewelled two of its infant leopard sharks, which were sent to Cairns Marine Aquarium last month.

Aged three and four, the sister duo had an exciting journey from Townsville to Cairns on the road in specially designed tanks.

As the sharks had been born in captivity and were used to being in tanks, the trip would not have been too stressful for them. They have arrived safely in Cairns and are slowly acclimatising to their new home.

The sharks were born at Reef HQ as part of the captive breeding program. While leopard sharks are not endangered, all shark species are under threat from fishing and climate change pressures. Reef HQ is hoping to reduce the number of sharks taken from the wild by breeding them at the Aquarium.



A pair of sharks swim in Reef HQ Aquarium's main tank showing off their beautiful leopard like markings

The sharks' parents, Leonie and Leo, are in Reef HQ's main tank while some of their brothers and sisters are also on display.

Leopard sharks get their name from their cream and brown patchy skin, but are also called zebra sharks because when they are born they are black with white stripes. They are very placid animals and spend most of the day on the seabed floor and then at night they go looking for food.



One of the infant leopard sharks

## NAIDOC Week Reef Dreaming school holiday program

The Great Barrier Reef Marine Park Authority and Reef HQ Aquarium marked annual NAIDOC (National Aboriginal and Islander Day Observance Committee) Week celebrations in July with a school holiday program which shared Traditional Owners' connection to sea country in the Great Barrier Reef.

Visitors were invited to experience Reef HQ through the eyes of a local Indigenous guide, Russell Butler Jnr, as he shared his knowledge and cultural ties to the Great Barrier Reef and its marine life.

During NAIDOC Week visitors learned about local Dreamtime stories including 'Yamanie', the creation story of the rainbow serpent. The Aboriginal rainbow serpent belief is one of the oldest continuing beliefs in the world, dating back several thousand years.

Other craft activities for school children included learning how to roll string to make a beach hibiscus bracelet, and creating a fiddler crab and mudskipper.

The program also included screenings of the NQ Dry Tropics produced short film 'Safeguarding the Gungu Seaturtle' which explored the cultural significance, traditional use and marine management of the green sea turtle in the local Townsville region.

NAIDOC Week is held annually in July, celebrating Aboriginal and Torres Strait Islander cultures and recognising the contributions of Indigenous Australians in various fields. The 2010 National NAIDOC theme was 'Unsung Heroes – Closing the Gap by Leading Their Way'.



**Reef Dreaming at Reef HQ Aquarium**

Experience Reef HQ Aquarium these school holidays through the eyes of a Indigenous Traditional Owner

**Join...**  
a local Indigenous guide as they share their knowledge of Great Barrier Reef marine life

**Discover...**  
local Dreamtime stories including 'Yamanie' the Rainbow Serpent

**Learn...**  
how to roll string and make your own beach hibiscus bracelet

**Get crafty...**  
create your own fiddler crab and mudskipper

**Plus lots of other unique cultural activities about the Great Barrier Reef!**

Illustrations by Patricia Nelson and Thomas Suckow, Murnu Traditional Owners

Australian Government Great Barrier Reef Marine Park Authority reefHQ GREAT BARRIER REEF AQUARIUM 2-66 Flinders St Townsville QLD 4830 P 4750 0600 www.reef-hq.com.au Become a fan of Reef HQ Aquarium on facebook!

# Carbon emissions threaten fish populations

*Rising CO<sub>2</sub> emissions could have a significant impact on the world's fish populations according to new research carried out in Australia.*

Baby fish may become easy meat for predators as the world's oceans become more acidic due to CO<sub>2</sub> fallout from human activity, a team of researchers has discovered.

In a series of experiments the team found that as carbon levels rise and ocean water acidifies, the behaviour of baby fish changes dramatically – in ways that decrease their chances of survival by 50 to 80 per cent.

“As CO<sub>2</sub> increases in the atmosphere and dissolves into the oceans, the water becomes slightly more acidic. Eventually this reaches a point where it significantly changes the sense of smell and behaviour of larval fish,” says team leader Professor Philip Munday of the Australian Research Council's Centre of Excellence for Coral Reef Studies (CoECRS) at James Cook University.

“Instead of avoiding predators, they become attracted to them. They appear to lose their natural caution and start taking big risks, such as swimming out in the open - with lethal consequences.”

Dr Mark Meekan from the Australian Institute of Marine Science says the change in fish behaviour could have serious implications for the sustainability of fish populations because fewer baby fish will survive to replenish adult populations.

“Every time we start a car or turn on the light part of the resulting CO<sub>2</sub> is absorbed by the oceans, turning them slightly more acidic. Ocean pH has already declined by 0.1 unit and could fall a further 0.3-0.4 of a unit if we continue to emit CO<sub>2</sub> at our present increasing rate.

“We already know this will have an adverse effect on corals, shellfish, plankton and other organisms with calcified skeletons. Now we are starting to find it could affect other marine life, such as fish.”

Earlier research by Professor Munday and colleagues found that baby 'Nemo' clownfish were unable to find their way back to their home reef under more acidic conditions. The latest experiments cover a wider range of fish species and show that acidified sea water produces dangerous changes in fish behaviour.



*Acidified sea water produces dangerous changes in fish behaviour*



*Baby clown fish are unable to find their way back under more acidic conditions*



*Acidity also affects corals, shellfish and plankton*

# Defence activities in the Great Barrier Reef Marine Park

*Intensive training activities are regularly undertaken by the Department of Defence in a few designated areas of the Great Barrier Reef, covering less than four per cent of the Marine Park. Defence training areas such as Shoalwater Bay and Cowley Beach are in frequent use and both have maritime boundaries with the Great Barrier Reef.*

A recent meeting and field inspection with staff from the Department of Defence and the Great Barrier Reef Marine Park Authority (GBRMPA) strengthened the already solid partnership developed over the years between the two agencies.

A field inspection off the coast of Townsville took in parts of the shared estate between Defence and GBRMPA such as the inert weapons range at Rattlesnake Island and nearby reefs. The aim was for staff to see first-hand the effect of military training activity on the island and share management information about the environmental impacts of Defence activities and how they can be minimised.

GBRMPA General Manager Andrew Skeat said regular meetings to discuss issues, share knowledge and learn from each other are a key component of the partnership between the Department of Defence and the GBRMPA.

"The visit to Rattlesnake Island which is used by the Department of Defence for some airborne gunnery



Rattlesnake Island

training activities highlighted to the GBRMPA staff that environmental impacts of Defence activities on this island is minimal," Andrew said.

Defence has an extensive network of environmental management staff who work closely with GBRMPA staff on management issues impacting on both Defence properties and the Great Barrier Reef.

Townsville-based Department of Defence Senior Environmental Manager Tony Law said an effective working partnership between GBRMPA and the Department of Defence is vital and the management of any environmental impacts from Defence activities is high on the department's agenda.

"The Great Barrier Reef is a critical part of Australia's Defence training programs and field inspections such as



Snorkelling to inspect nearby reefs

this exercise builds our knowledge base and helps the GBRMPA understand our needs," Tony said.

"It was particularly helpful to get an insight into the Marine Park management issues faced by the GBRMPA and how we can assist in these."

While most of the Defence areas are small, the Shoalwater Bay Military Training Area is one of Australia's largest. Defence activities include Navy clearance diving, boating and navigation exercises as well as amphibious landings. All the Defence activities are carefully managed and most have negligible impact.

## Local tourism operators keeping an eye on Reef health

*Local marine tourism operators will be better equipped to look after the Reef after completing comprehensive training in reef health monitoring in June.*

Crew members from 19 tourism operations took part in the training in Port Douglas as part of one of the largest monitoring programs of its kind in the world – the Eye on the Reef monitoring program.

The aim of the Great Barrier Reef Marine Park Authority's program is to gather a range of Reef ecosystem information from as many locations on the Great Barrier Reef as possible.

GBRMPA Chairman Russell Reichelt said many marine tourism operators visit dedicated areas of the Reef on a weekly, if not daily, basis and were highly experienced and attuned to the areas they visit.

"Marine Park tourism operators are best placed to monitor, in an ongoing capacity, indicators like water temperature and visibility, the appearance or absence of iconic marine species, and data related to reef health such as coral bleaching and disease.

"The data gathered by tourism operators involved in the Eye of the Reef monitoring program provides managers and scientists with a valuable, long-term picture of what is occurring on the Reef, which can be used in prioritising management decisions."

Russell said tourism operators were among our best allies for monitoring the ecosystem health of the Great Barrier Reef.

"With an area as large as the Great Barrier Reef Marine Park (345 000 sq kms) the tourism industry plays an invaluable role in ensuring we have the most up-to-date observed data from the broadest range of locations possible.

"The Great Barrier Reef Outlook Report 2009 clearly states that the Reef is at a crossroads and under increasing pressure from threats such as climate change. Our world leading tourism industry is at the forefront of taking action and helping scientists and managers monitor and manage for ecosystem resilience," he said.

There are now 18 operators in the offshore Port Douglas and Cairns area participating in the program, monitoring 22 sites.

Information provided by the participants is highly regarded by both Marine Park managers and scientists.

# Glenella State School takes out recycled art competition

*Glenella State School proved they were environmental warriors and artists, taking out this year's Mackay Regional Council Primary Schools Recycling Art Competition.*

The theme for this year's competition was "Don't Rubbish the Reef – Sea Sustainability". More than 15 schools from around the region took part in this year's competition, with a 3D art sculpture of a bowmouth guitarfish taking out the top prize.

Waste Services portfolio councillor Greg Thomsen said they received so many wonderful entries made out of all sorts of reused and recycled materials, that it was hard to choose a winner.

Glenella State School was awarded first prize, which was an IT package of their choice to the value of \$1000,

second prize went to Fitzgerald State School for a \$250 voucher for art supplies, and third prize went to Walkerston State School for a \$100 book voucher.

Councillor Thomsen thanked all the schools for taking part in the 2010 Mackay Regional Council Primary School's Recycling Art Competition and learning about the importance of recycling.

"Schools put so much effort into researching and designing their marine creature or marine-landscape and it is great to hear that following this competition schools are running their own marine sustainability or recycling programs."

## Interesting Facts

### Frigate birds

Frigate birds are about the size of a hen. In general, adult males are all black, and adult females are marked with white below. The birds have a bare-skinned throat pouch, which in courting males becomes bright red and is inflated, for display purposes, to the size of a person's head. Frigate birds are sometimes known as 'man-of-war' which stems from their habit of chasing other seabirds and waiting for them regurgitate their recently collected fish or squid.



## Outlook Online

*Outlook Online is an information system that allows the user to explore the individual sources of information used to develop the Great Barrier Reef Outlook Report 2009. It follows the same structure as the Outlook Report and contains direct extracts from the most relevant papers and reports.*

The complete set of evidence used to develop the Great Barrier Reef Outlook Report can be accessed through Outlook Online.

Every effort has been made to include all citations and links used in the Outlook Report but there are some instances where this was not possible because of copyright or other reasons. In addition to the citations from the Outlook Report, there is much more information presented on the online system.

If you would like to know more Outlook Online, it is easily accessible by visiting [www.gbrmpa.gov.au](http://www.gbrmpa.gov.au).

## Calendar of events

2010

International Year of Biodiversity

September  
Biodiversity Month

07 September

National Threatened Species Day

12 September

Sustainable House Day

16 September

International Day for the Preservation of the Ozone Layer

18 September

World Water Monitoring Day

01 October

Walk To Work Day

05 October

World Habitat Day

17 – 23 October

National Water Week

29 October

National Bird Day

## GBRMPA contacts



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Let us know your email address at [searead@gbrmpa.gov.au](mailto:searead@gbrmpa.gov.au) or phone the GBRMPA on (07) 4750 0700

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