

TURNING THE TIDE

Spring 2013, Volume 14#2

Whaling battle moves to the courts

Fighting for the Reef

Blue Carbon mangroves

Ningaloo ten year anniversary

Oceans of plastic

Australian
Marine
Conservation
Society



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From the **DIRECTOR**
Darren Kindleysides



ONCE MORE UNTO THE BREACH...

the fight against whaling moves to the International Courts

Our natural world overflows with jaw dropping wildlife encounters. Our oceans in particular play host to experiences to top anyone's bucket list - from swimming under moonlight through phosphorescence galaxies, to snorkelling in the sun with constellation-marked whale sharks. And right up there, the sight of a breaching whale.

Sometimes for work, but mostly for play, I've been on my fair share of whale watching trips. Without fail, the first sight of a breaching whale hauling its mega-tonne body in a gravity-defying leap makes time stand still. It's like watching a last-second kick spiral towards the goal posts on grand final day. For a split second everyone holds their breath – then with the splash, the release, and a collective joy to match winning the championship.

While decades of pressure upon our natural world have made some bucket list wildlife encounters a distant hope, the sight of breaching whales is now more within reach. Australia is in the box seat for the annual humpback whale migration. Dwellers and tourists from around our coastline benefit from the move to ban humpback whaling back in the 1960s. It was a decision taken just in time. Numbers of humpbacks on the east coast had dwindled from tens of thousands to a few hundred. Now, after a harpoon-free half-century, they number over 14,000.

Our humpbacks are a conservation success story, and one which has become an economic success story. Whale watching tourism brings in millions of dollars each year. Whales are worth far more alive than dead but still there are nations looking to shoot them with more than cameras.

Since the 1986 global ban on commercial whaling, Japan has killed 10,000 minke and fin whales in the Southern Ocean under the guise of 'scientific research'. It is research that is unwanted, unnecessary and inhumane and simply an attempt to side-step the ban on whaling. Not many have been fooled by the lab coat of science in which Japan's whaling hides. Few governments have been prepared to act, but proudly, ours has.

The last time our country took another to the International Court of Justice (ICJ) it was 1974. Back then France was still exploding nuclear bombs on remote Pacific atolls and commercial whaling was still rampant. A full 39 years later, Australia has returned to The Hague, this time to challenge Japanese whaling.

There is a sort of parallel between the two cases. On both occasions Australia has challenged a country's dodgy science - you don't need to detonate a nuclear bomb to know its devastation, and you don't need to harpoon a whale to study it.

In 1974, the so called 'Nuclear Test Case' proved explosive and, while France won the case, the international attention it generated forced them to stop blowing up parts of the Pacific. The ICJ whaling decision won't be known for several months. Irrespective, the case has been equally effective in shining a global spotlight on Japan and turning the up the heat to end whaling in our Southern Oceans once and for all.



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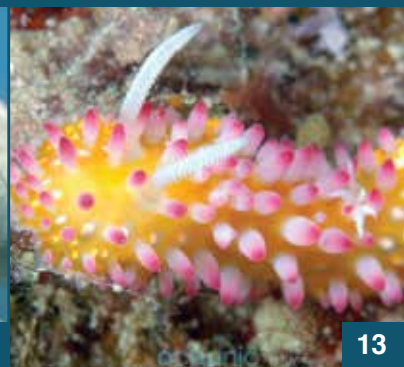
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From the **PRESIDENT** Craig McGovern

I've recently returned from seeing our southern ocean in all its glory – sailing through the 'Roaring Forties' and the Bass Strait helping to deliver a yacht from Melbourne. And what an adventure it became, with Murphy's Law delivering unpredictably bad weather, a torn mainsail and electrical faults ensuring we retained our full respect for this great ocean.

But along the way there was also great beauty – spouting whales, noisy penguins, frolicking seals, energetic dolphins and calm micro-climates, all contrasting dramatically with the massive oil rigs and tankers spread along the Tasman Sea.

The importance of protecting the wilderness from these massive industrial pursuits could not have been more stark! It particularly highlighted the importance of our current campaign to protect the

Great Barrier Reef from industrialisation to support the mining boom. Despite the enormous odds, this campaign continues at full pace. Wildlife legend Bob Irwin has joined the battle and appeared in a series of advertisements which have rolled out up and down the east coast. Bob is truly passionate about this campaign (see page 7).

It is important that we recognise the generous support of The Thomas Foundation, particularly their commitment to match dollar for dollar the funds we raised in our June Fight for the Reef appeal. Thank you for helping fund this critical battle.

It's hard to believe that ten years have passed since AMCS and our conservation colleagues harnessed the passion of the community to stop the mega marina at Ningaloo in Western Australia's Coral Bay. Read more on page nine and check out some wonderful

photos of a notably younger bunch of campaigners!

This edition of Turning the Tide also reports on the latest horror statistics on the world's garbage problem and its effects on our seas (page 12). We also look into Project Manta's research at Lady Elliot Island (page 10) and shine a solar-powered light on the importance of mangroves as carbon sinks in this rapidly warming world (page 11).

We also interview one of our star volunteers Cole McLean who reveals that the humble nudibranch is his favourite sea creature (page 13). And last but not least we interview our youngest Sea Guardian, Indigo Fletcher, who (with a little interpretive help from her mother) tells us about why she joined up to help the cause.

Thanks as always for your support for our work. Hope you enjoy another edition of Turning the Tide.



OUT OF THE

News from around our shores



SAY THANKS... and protect it forever!

Australia has created the world's largest network of marine parks. This simply wouldn't have happened without so many Australians speaking up for our seas. That's people like you, making a difference, turning the tide.

But the tide can turn quickly in Canberra. If we want to keep the parks in place, it's vital that our MPs know how much they mean to us. A positive response today will keep marine parks in the sea tomorrow.

That's why our patron, renowned author and playwright Tim Winton, appeared in a special video urging all Australians to contact their local MP to thank them for supporting the push for more protection (even if not all of them supported it).

Visit our website today to check out the video and send an email.

www.marineconservation.org.au

INDIA BANS CAPTIVE DOLPHIN ENTERTAINMENT

The Indian Government has issued a ban on dolphinariums, citing dolphins' high intelligence as a reason why their captivity is morally wrong. India's federal government urged "State Governments....to reject any such proposal(s)", arguing that "cetaceans in general do not survive well in captivity... [and that] confinement can seriously compromise the welfare and survival of all types of cetaceans by altering their behaviour and causing extreme distress".

The announcement from the Indian Ministry of Forests and Environment followed a national and grassroots campaign from Indian eNGOs seeking a ban of dolphinariums. Several countries, including Chile, Costa Rica and Croatia, have banned dolphin display and performances.



India has banned the practice of keeping dolphins in captivity due to their high intelligence.



Cherry Muddle and well wishers at Airlie Beach greet June Norman and others walking to raise awareness of the Reef.
© Ash Hogan

REEF WALK

half way through its epic journey

AMCS community campaigner Cherry Muddle and an entourage of supporters recently marched with 72-year-old grandmother June Norman as she reached halfway through her epic 80 day, 1200km awareness-raising walk from Cairns to Gladstone.

With many miles still to walk in her fight to save the Reef from industrialisation, June said, "Walking is our way of bringing awareness to small towns of the very real threat to our Great Barrier Reef. We hope to empower the everyday person to stand up and have a say and encourage them to speak out. We want the government to slow down the unprecedented rush to export through the reef". You are a true inspiration June. We love the way you walk. To follow June's walk visit www.reefwalk2013.com

BLUE



Check us out on twitter for live updates & news: @AustMarConsSoc

“I DON’T UNDERSTAND WHY WHEN WE DESTROY SOMETHING CREATED BY MAN WE CALL IT VANDALISM, BUT WHEN WE DESTROY SOMETHING CREATED BY NATURE WE CALL IT PROGRESS.”

Ed Begley Junior.

PLACES YOU LOVE image & update

The Federal Environment Minister, Mark Butler, has announced that the Rudd Government will retain environment approval powers at the federal level, resisting pressure from big business and state governments. Butler said that the Federal Government will retain the power of veto over projects if it doesn't consider them environmentally sound, and that '...the Commonwealth still has legal obligations to ensure the protection of matters of national environmental significance'. This announcement is a great relief. Places like the Great Barrier Reef and the Franklin River would not have been saved without the intervention from the federal government.

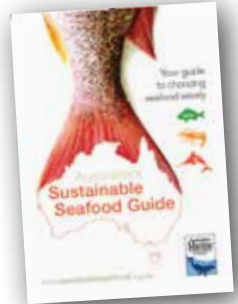
The Government will retain the power to protect places of national environmental significance.



WHERE'S YOUR FISH AT?

We are currently reviewing and updating Australia's Sustainable Seafood Guide to reflect changes at sea in the aquaculture and wild-caught seafood industry. We're aiming for a summer release of the new guide. In more seafood news, keep your smartphones poised for the upcoming Android App for which we're currently raising funds (the Guide is already available free of charge for iPhones).

Meanwhile visit the online guide at www.sustainableseafood.org.au



Choose your seafood wisely with Australia's Sustainable Seafood Guide.



Antarctica's seals and penguins will have to wait for now. Photo by Glenn Walker

ANTARCTICA protection stalls

Efforts to protect 3.8 million square kilometres of Antarctica's fragile waters have stalled as 25 nations fail to reach agreement in Germany. In July a special meeting of the Commission for the

Conservation of Antarctica Marine Living Resources (CCAMLR) considered proposals for a series of marine reserves which would protect sections of the Ross Sea and the Southern Ocean of East Antarctica. The negotiations stalled when Russia threw a spanner in the works at the 11th hour. When the next round of talks begins in Hobart in October we'll be urging CCAMLR to get behind the push for protection of our precious Southern Ocean.

Progress on protecting GIANT AUSTRALIAN CUTTLEFISH

In March this year, the South Australian Government implemented a temporary closure on all fishing of Giant Australian Cuttlefish in the Upper Spencer Gulf. This was prompted by concerns from locals and conservation groups after new research found that cuttlefish numbers around Point Lowly near Whyalla had plunged by a shocking 90% in the past 13 years. The government also provided funding for monitoring and potential creation of new breeding habitats in artificial reefs.

The spawning aggregations of the northern Spencer Gulf have become a local tourist attraction and are the world's only known dense aggregation of spawning cuttlefish. There is currently no clear explanation for this regional decline, however the Giant Australian Cuttlefish's restricted range and short lifespan are two critical factors that meant immediate action was needed. Thanks to the SA Government for taking action to protect this intriguing and much-loved species.

Giant Australian Cuttlefish have had a temporary reprieve in South Australia © Aengus Moran

What's so special about **ABBOT POINT AND THE CALEY VALLEY WETLANDS?**

By Dr Lissa Schindler,
Great Barrier Reef
Campaigner



About 20 kms north of Bowen on the Great Barrier Reef coast sits a beautiful, contentious, hotly debated place called Abbot Point. This sleepy part of Queensland's tropical coast has become a hot spot for the massive industrialisation boom confronting Australia's iconic Reef. Plans are afoot to increase the size and capacity of the current port at Abbot Point to make it the largest coal port on the planet. That's right: the largest coal port on Earth, right on the doorstep of one of the natural wonders of the world, our living, luscious wonderland, our Great Barrier Reef.

Australia's Magpie Geese depend on the Caley Valley wetlands © Tony Bowler



Red-capped plovers forage throughout the Caley Valley wetlands © Peter Beasley



I've been to Abbot Point, and I was struck by its surrounding wetlands and beaches. Like most visitors, I was immediately drawn in by the sheer size and beauty of the wetlands and surrounding coastline, and the high numbers of birds that live there from all over the world.

The Caley Valley Wetlands, adjacent to the Point, are a large, coastal wetland system that is one of the few remaining intact wetland systems between Townsville and Bowen. They are critical for the region's wildlife, especially its vast birdlife.

Even if you are not a bird lover you would be struck by the sheer number and diversity of our feathery friends that visit the Caley Valley Wetlands each year. More than half the number of migratory bird species that visit Australia occur there. At peak times of year, over 41,000 birds have been recorded there in total. Many of them are threatened, including the endangered Australian Painted Snipe, which breeds in the Caley Valley. Less than 1500 of these beautiful, nocturnal birds remain in Australia, which is the only country in the world where they occur. The Caley Valley is crucial to their very survival.

Looking beyond the wetland on either side of the port you can see pristine beaches where turtles nest

and a sparkling azure sea. This part of the Pacific Ocean is a winter nursery for the playful newborn humpback whales. Beneath the shimmering surface and surrounding the wetlands are large seagrass beds - feeding grounds for dugongs and turtles, and nurseries for fishes before they journey out to that big coral reef beyond.

Abbot Point is a very special place. The port expansion, if permitted by the Australian Government, will change it forever. New railway lines are planned right through the wetlands, bringing more coal to the port and extra coal stock piles across the top of the wetland. Not only will this destroy parts of the wetland but it will inevitably bring loud trains and coal dust pollution, disturbing birds that have flown across half the planet to reach these wetlands; to shelter, nest and feed. Beyond the wetlands extra terminals for freight ships will increase coal freight ship traffic almost 20-fold, right where those baby humpback whales are, right near those nesting turtles, right over the seagrass beds where the dugongs gently graze.

It seems absurd that a beautiful place like Abbot Point would be earmarked for such a large industrial project. Yet where we see a beautiful isolated area abundant with unique wildlife, others see an unpopulated, undeveloped space, prime real estate for the biggest coal port on Earth. Remember that 90% of coastal wetlands are now lost from the Great Barrier Reef's coastline. It is already under so much stress. The birds and animals that live at Abbot Point and rely on its wetlands and coastal waters don't have a voice, but we do. Please use yours to help us win the fight.

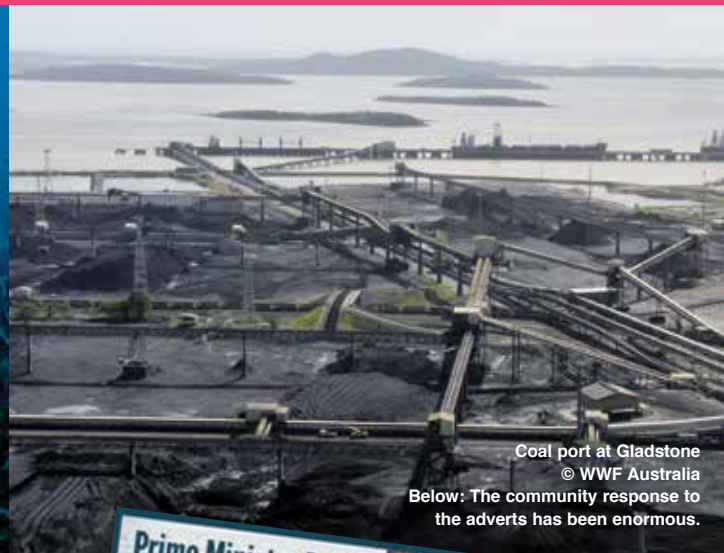
The wetlands are crucial to the survival of the threatened Australian Painted Snipe © Rick Shu



Abbot Point coal terminal alongside the extensive Caley Valley Wetlands © Abbot Point Action Group



Healthy coral reef bommie © Steve Parish



Coal port at Gladstone

© WWF Australia

Below: The community response to the adverts has been enormous.

IT'S OUR REEF

but we're going to have to fight for it



By Felicity Wishart,
Great Barrier Reef
Campaign Manager



"The Reef is one of the seven natural wonders of the world, but our governments seem to have forgotten that fact. The Reef belongs to all of us, not to big industry to use as a dredge dumping ground and shipping superhighway. The Australian people are the only ones who can make a difference to protecting the Reef." Bob Irwin

The Fight for the Great Barrier Reef against new industrial port developments is getting bigger. In April we launched a powerful advertising campaign in regional Queensland featuring veteran conservationist, Bob Irwin. TV, radio and newspaper ads combined to highlight the risk to the Reef from megaports and industrialisation. massive port expansions are planned for Townsville, Abbot Point (just 50kms from the Whitsunday Islands), Mackay and Gladstone and a new port is planned in the beautiful

Fitzroy Delta. Plans are also afoot for coal shipping near Princess Charlotte Bay on Cape York Peninsula.

All these proposals means more dredging of seabed, more dumping in the Reef's clear waters, more shipping and more damage to seagrasses, corals and the wildlife they support.

The community response to the ads has been terrific. Thousands of people have written to Australia's new Environment Minister Butler about dredging plans at Abbot Point and more than 500 called his office on just one day to urge him to reject the plan.

AMCS staff and volunteers are working closely with regional community groups along the coast. We supported Keppel and Fitzroy Delta Alliance Coordinator, Ginny Gerlach to travel to Switzerland to attend the Glencore Xstrata AGM to object to their plans to build a coal terminal on Balaclava Island in the Fitzroy Delta.

To our delight, just before Ginny arrived, Glencore announced they were scrapping the proposal. This port has been heavily

backed by Queensland governments. While the company has cited a drop in the coal price as a key reason, the withdrawal comes after a determined local community campaign, hand in hand with AMCS. What was considered inevitable has not come to bear. Community and passion won out.

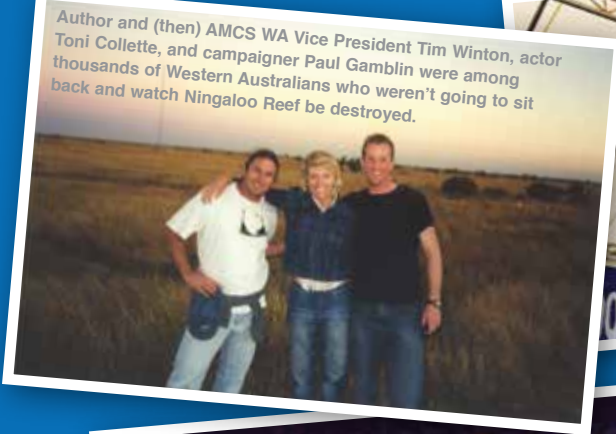
The world is watching too. In June the World Heritage Committee reiterated its serious concerns about port expansions and called on Australia to do more to protect the Reef. They were explicit that there should be no further development in the most precious pristine areas of the Reef including Keppel Bay and the northern section of the Reef. They also made clear that any further developments which put at risk the Reef's outstanding universal values would not be acceptable.

Australian governments now have a firm deadline of June 2014 for action to avoid the global icon being placed on an international list of shame. This will be a crucial 12 months for ensuring the future of our Reef and the \$6 billion tourism industry that relies on it.



As Bob Irwin reminds us "It's your Reef, but you're going to have to fight for it." If you haven't already, please join our Fight for the Reef.

Author and (then) AMCS WA Vice President Tim Winton, actor Toni Collette, and campaigner Paul Gamblin were among thousands of Western Australians who weren't going to sit back and watch Ningaloo Reef be destroyed.



Tim Winton addressing the enormous crowd.



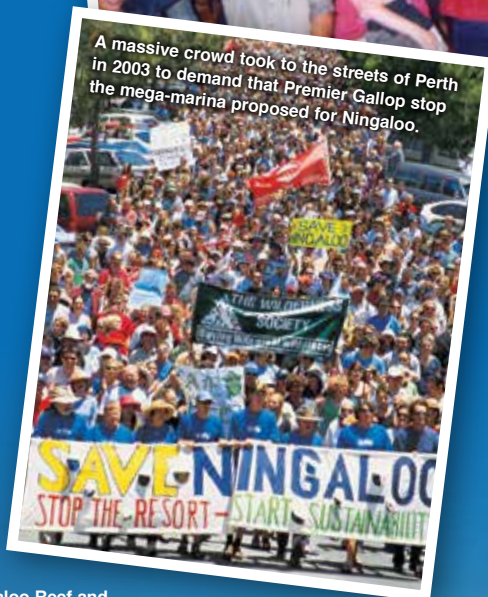
The mighty whale shark visits Ningaloo Reef every year.



Meeting by meeting, sticker by sticker, communities throughout WA said "Save Ningaloo Reef".



A massive crowd took to the streets of Perth in 2003 to demand that Premier Gallop stop the mega-marina proposed for Ningaloo.



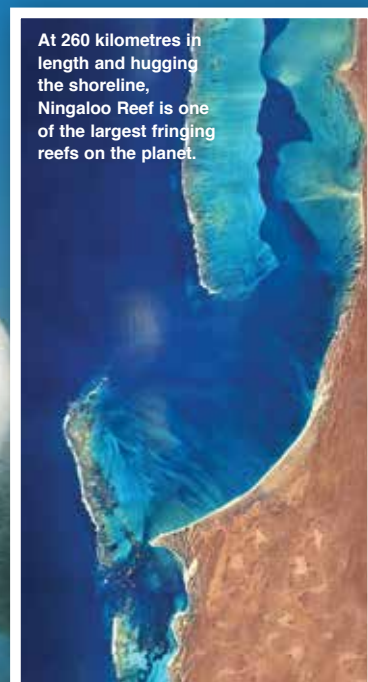
10 YEARS OF SANCTUARY for Ningaloo Reef

It is hard to imagine that what is now a highly prized safe haven for marine life was only ten years ago the site of a proposed massive marina development. Ningaloo Reef in remote Western Australia captured the imagination of ocean lovers around the country in 2000 when plans for a monstrous development were unveiled. In acknowledgement of the anniversary and with a fair bit of pride we take a trip down memory lane and look back at this historic period where tens of thousands of people fought some almighty powers and won.

Ningaloo Reef and surrounds are home to one of the last strongholds of the dugong which feed on the region's extensive seagrass beds.



At 260 kilometres in length and hugging the shoreline, Ningaloo Reef is one of the largest fringing reefs on the planet.



There's good news and bad news FOR OUR TOP END SEAS

by Daisy Barham,
Marine Campaigner



The tropical waters of the Top End and their stunning marine life are on the cusp of momentous change. Oil, gas and mining companies are turning their gaze northwards in their endless search for energy and minerals. This inevitably brings risk to our fragile wildlife beneath the waves, but it's not all bad news. There are many glimmers of hope as Traditional Owners and conservationists join forces in defence of Sea Country.

The Good News

The stunning waters of the north-western Gulf of Carpentaria have become the first seas in Australia to have permanent and dedicated protection from seabed mining. In June the Northern Territory Government took the historic decision to protect the waters around Groote Eylandt and Bickerton Island from destructive strip mining of the seabed. This followed the three year moratorium on seabed mining throughout Territory waters which AMCS supporters helped secure last year.

Traditional Owners of Groote Eylandt and the Anindilyakwa Land Council led the charge to protect their Sea Country from unscrupulous companies who have been eyeing off their waters for rich manganese deposits beneath the sea floor. The historic decision to protect these waters is a great win for Traditional Owners, conservationists and fishers - all of whom place far greater value on our marine life than on short term financial gains to be made from digging up minerals in the sea.

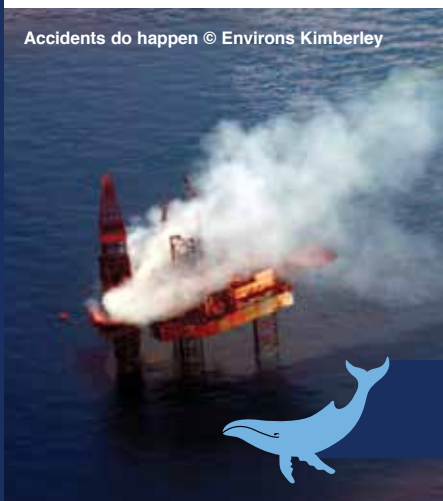
The Bad News

The first time that Traditional Owners of Arnhem Land heard about plans for oil and gas exploration in their Sea Country was when they read about it in their local newspaper. The NT News featured a quarter page notice that a mining company wanted the rights to explore in their Sea Country.

Traditional Owners of remote Maningrida in Arnhem Land are one of the oldest living cultures in the world. They fear for their ancient Sacred Sites and Song Lines which could be threatened by exploration activities such as seismic surveying. Fish and crustaceans provide for many remote communities, yet the rush to extract oil and gas throughout the Top End risks the very marine life and habitats on which these communities depend.

So what were the Traditional Owners to do if the company wouldn't come to them with their exploration plans for their Sea Country? The decision was made to head south to the city. On a blistery cold and wet Sydney day in July we joined Maningrida Traditional Owners at the office of the company in question. Together we requested better communication with local communities and respect for the most intact tropical seas on the planet. As the battle brews for our northern seas a strong coalition of Traditional Owners and conservationists is forming around our shared vision for a gas and oil free coast in Arnhem Land.

Accidents do happen © Environs Kimberley



Sign our petition at sealife.org.au and follow the campaign by Traditional Owners at facebook.com/ProtectArnhemLandNT



The waters around Groote Eylandt are now permanently protected from seabed mining © R. McDonald, Anindilyakwa Land Council.



Arnhem Land Traditional Owners and supporters gather in Sydney outside the mining company's office © Glenn Walker.

Every manta ray is born with a unique belly pattern, like a human fingerprint © Project Manta

by Asia Armstrong,
Supporter Manager



PROJECT MANTA and a trip to Lady Elliot Island

The east coast of Australia is blessed with a healthy population of reef manta rays, *Manta alfredi*. These animals have been sighted as far south as Sydney Harbour and northwards to the Torres Strait Islands. Incredibly, individual manta rays have been documented undertaking seasonal migrations of over 650 kilometres between Lady Elliot Island in QLD and Solitary Islands in NSW.

Our scant knowledge of reef manta rays has been greatly enhanced by the work of Project Manta, a research initiative based at the University of Queensland. AMCS is a partner in this multi-disciplinary project, which aims to reveal the population size and structure, drivers of migration, reproductive and life history traits and feeding ecology of these charismatic filter-feeding animals.

Project Manta, joined by Earthwatch volunteers and supported by the Australian Research Council and Lady Elliot Island Eco Resort, conducts three field trips annually to Lady Elliot Island in the southern Great Barrier Reef. These waters are rich with marine life, including numerous corals and marine invertebrate species, many species of teleost fishes, sharks and rays, sea turtles, and seasonal migrations of humpback whales. One of the primary goals of these field trips is to collect sightings of the manta rays to add to the growing database of individuals identified from along the east coast of Australia. This database contains images of the underside of the mantas, photographed by divers and snorkelers, along with other useful information about the animals such as feeding, behaviour and habitat use of the mantas.

Manta rays have distinct ventral markings which remain constant throughout their

lives, like a fingerprint, and allow for confident identification of individuals. This information, along with the sex of the mantas, evidence of mating or pregnancy, and size estimates, can then be used to inform on population size and structure.

The project has been running for six years and the database continues to grow. I was lucky enough to join Project Manta for their June field trip to Lady Elliot Island during which over 300 individual sightings of manta rays were recorded, with approximately 80 individuals identified for the first time. This brings the known population of east coast manta rays to over 800 individuals.

Internationally, manta rays have been assessed on the IUCN Red List as Vulnerable to extinction, and earlier this year they were listed on Appendix II of CITES. This was largely in recognition of the threats they face from targeted fisheries around the world that harvest them for their highly prized 'gill rakers' used in Traditional Chinese Medicine. Research such as that conducted by Project Manta is vital for understanding the ecology of these animals and will help in the development of informed decisions for their conservation.

Lady Elliot Island from the air © Shelby Temple



All manta ray bellies are different
© Project Manta



To assist the project, please send in any images of manta ray bellies, including the name of the photographer and the location and date of the sighting to project.manta@uq.edu.au.



MANGROVES IN DARWIN HARBOUR

— our beautiful blue carbon



Researcher Le Bai in the mangrove forest
© Amanda Lilleyman



Mangroves are critical in sequestering carbon
© Katie Fuller/Marine Photobank

Mangroves not only play a key role in marine ecosystems but are critical blue carbon* ecosystems, removing carbon from the air and sea and storing it in the soil and sediments in which they grow. Darwin Harbour's beautiful mangrove forests have recently been found to store an incredible \$460 million worth of carbon on the carbon market. We recently spoke with Le Bai from the Charles Darwin University about his research.

Le, can you tell us what you found through your research?

I found that mangroves in Darwin Harbour store \$460 million worth of carbon, around 3,750 tonnes of CO₂ a hectare! Mangroves store carbon down to three metres below the surface, with different mangrove communities storing different amounts of carbon. The inundation period (when the plants are submerged beneath the tide) is key to how much carbon they can store. Incredibly, mangrove forests can store up to four times more carbon than their neighbouring savannah forests.

So in terms of carbon storage, how do mangroves compare with terrestrial forests?

Terrestrial forests tend to reach a steady state within decades to a century, yet mangrove sediments can accrete carbon deposits over millennia. This means that the carbon stocks in mangroves can exceed those of terrestrial ecosystems, including tropical rainforests, by several times. Isn't that incredible?

If the mangroves were removed what would that mean for the carbon stored underneath them?

The carbon that was built up over thousands of years would be released into the atmosphere or water column. These incredibly rich carbon sinks would become a massive source of emissions. A Californian study showed that mangrove clearing resulted in a 50% release of carbon within eight years of the clearing, which would otherwise have been stored over thousands of years. This is because habitat destruction destabilises sediment carbon and exposes it to higher level of oxygen which increases microorganism activity, resulting in carbon release.

Le, what was it like conducting your research in the Top End?

The Top End is a very challenging place to do research. We've got crocodiles and outrageous heat and humidity. Mangroves become like steamers - the wind just can't get through. Sometimes I couldn't even see my colleague a few meters away due to the extreme stem density! Every day we would have to carry 20kgs of mud

in our bags which makes you sink even further into the mud. My supervisor called me 'mud warrior!'

What impact do you want your research to have?

I am hoping that, at the least, more people will appreciate the values of mangroves. These precious natural forests must be better protected. Mangroves are under pressure here and around the world from development like oil and gas and urban encroachment. I want to be part of those who help us to see their true worth.

For a full version of this article, visit our website on www.marineconservation.org.au

***Blue carbon is the carbon captured from the air and sea by ocean and coastal vegetation such as mangroves, seagrasses, salt marshes and phytoplankton. Throughout the world's vegetated coastline, carbon is stored below the surface in peat sediments, which are generally anoxic, so that organic carbon is not broken down and released by microbes.**



After a storm at Main Beach, Stradbroke Island © Kate Sprogis

Laysan Albatross chick with plastic debris in stomach © Claire Fackler/NOAA Marine Photobank

OCEANS of plastic

By Jackie Boyce,
Online Campaigns and
Communications Officer



It's hard to swallow but plastic pollution isn't going to go away any time soon. We've polluted our waterways, beaches and oceans with so much plastic that it is choking our sea life and invading the ocean's food chains.

Even when we can't see it, the plastic is still there. Our most pristine beaches might look clean at a glance, but look a little closer and you're likely to find tiny pieces of broken down plastic in the sand. After storms at sea where driftwood once was washed ashore, we now find piles of plastic. Once it enters the ocean, the sun and the waves break it down into smaller and smaller pieces that never truly go away. In some areas of the ocean where plastic has travelled in the currents, it is estimated that the ratio of zooplankton (drifting animals in the ocean) to plastic is now 1:6 by weight!

Here's some more horror statistics; Globally, up to 40,000 fur seals die each year from entanglement in debris. In Australia, it is now estimated that up to 85% of our seabirds are affected by plastic. Tragically, on Lord Howe Island 96% of flesh-footed shearwaters breeding on the island have plastics in their

stomach. One chick was found to have over 275 pieces of plastic in its stomach. Unable to distinguish plastic from their fishy prey, these birds are choking to death on a plastic soup.

This is a global problem but it is a classic example of a problem that begins locally, at home. Australia is no exception to the plastic problem. The CSIRO recently conducted an 18 month marine debris survey around 35,000km of our beautiful coastline and found that there are over five pieces of rubbish for every person in Australia! Cigarette butts, plastic bags and plastic bottles were among the common items found and a staggering 74% of rubbish was plastic.

Seven billion drink containers end up as landfill or littering our beaches, rivers and oceans each year. This is why a national Container Deposit Scheme (CDS) - which places a 10cent fully refundable deposit on drink containers - is one of the most effective solutions to plastic litter.

All around Australia there's a groundswell of support. This scheme has real and lasting benefits. Over 80% of Australians want it now! South Australia has been doing it successfully for over 30 years. The Northern Territory kicked it off in 2012. Victoria, Western Australia, ACT and Tasmania are on board. The only

stumbling blocks now are New South Wales and Queensland. NSW and QLD are proposing more bins in the street, but this simply won't work.

It is critical that we let our politicians know we want action. Contact your local MP and tell them you want a National Container Deposit Scheme to limit the amount of waste we generate. Get on our website or contact the AMCS office to find out more.

We CAN stop making and using plastic!

"Only we humans create waste that nature can't digest"

Charles Moore



Don't be a loser.
Ditch the plastic.





Cole McLean on the bridge of the Rainbow Warrior III

VOLUNTEERS fighting for the Reef

Cole McLean is an outstanding volunteer who has donated his considerable skills to the Fight for the Reef campaign since the start of the year. Cole is the perfect volunteer - no job too small, large or complicated. He has boundless creative energy and creates videos, posters and postcards for the campaign and also plays a crucial role in recruiting and managing an army of volunteers to fight for the Reef. Cole is currently helping to organise the Rally for the Reef in Brisbane. We recently interviewed Cole to find out more about his motivation.

Cole, what inspired you to join the fight for the Great Barrier Reef?

Coming from Canada, a country which also holds an amazing global treasure (the Boreal forest), I felt obligated to protect the Great Barrier Reef from the same sort of issues that confront my home land's treasures – destruction; destruction from greedy companies who persuade unknowing or under-empowered communities to sell off parts of their country. These are parts of the country that could help sustain a balanced economy for centuries.

Do you think Australians care about the Reef?

Definitely! I've talked to tens of thousands

of Australians about the Great Barrier Reef, and while admittedly not everyone supports the campaigns we run, everyone supports the Reef. Even if they personally don't like spending time on the water, everyone acknowledges it's a strong economic driver and an international icon.

Why do you think it's important to preserve it for the future?

Because I'm greedy. I want to be able to dive it for the rest of my life. At the current rate we're tearing it up and dumping on it, I don't know if that's going to happen. It's currently an amazing and beautiful place - but the Reef's at risk of not being like that for much longer. If people don't want to preserve it for me, then it should be preserved for the long-term social

benefits of having it around in a healthy state, and to drive tourism into previously remote areas.

What is your favourite thing about the Reef?

Nudibranchs! Not only is it a fun name to say, there's thousands of those crazy guys (and gals) down there. Every time I dive the reef I seem to come across a new one. If you don't know what they are, I'd definitely look them up. Who knew slugs could be so cool?

Thanks a million for your passion, commitment and dedication, Cole. To get involved and volunteer your time or skills, contact Cole at reef@amcs.org.au

creature **FEATURE**

CREATURE FEATURE the nudibranch

Of all the creatures in the sea, the nudibranch would have to be one of the most wild and wonderful. These intriguing little sea slugs are soft-bodied beauties whose Latin derivation means 'naked gill'. They are broadly classified as Opisthobranchs, and are gastropod molluscs – marine snails without a protective shell (which they shed in their larval stage).

During their 200 million years of evolution nudibranchs have developed an amazing number of survival systems including chemical and biological weaponry, vibrant colouration, camouflage or the time proven trick of swimming away from potential predators. Nudibranchs are mostly carnivorous, feeding on some of the most toxic substances in the sea,

such as sponges, other molluscs, corals and sea anemones.

Nudibranchs 'swing both ways' and are hermaphrodites, born with both male and female sexual organs which are generally on the right side of the body in the neck region! They have no true eyes and navigate their way through the ocean by 'feeling' the chemistry of the ocean.

Found in every ocean of the world, nudibranchs occur in a variety of marine habitats, including mudflats, sandy rubble seabeds, rocky reefs and coral reefs in tropical coastal areas. It is estimated that there are over 3,000 known nudibranch species worldwide, with Australia hosting over 2,000 species, although new species are constantly being discovered.



The ornate nudibranch (*Cadinella ornatissima*) is common to the Great Barrier Reef, and stands out from the crowd with wild contrasting colours, warning potential predators to back away.



Indigo Fletcher and her mum Tooni Mahto by the sea © Nick Fletcher

OUR LITTLEST SEA GUARDIAN

Indigo Fletcher

Indigo Fletcher recently joined up as a Sea Guardian, which means that she is officially our youngest supporter. Ever since she was conceived, Indigo has lived by the sea and has the great Southern Ocean in her soul. When she was just four months old, Indigo played a starring role in a short film to encourage others to join us in defence of our seas. You can watch Indigo starring in the film on our website www.marineconservation.org.au. We recently interviewed our littlest Sea Guardian to find out more about her call to the sea.

Hello Indigo. Congratulations on becoming Australia's youngest Sea Guardian. Can you tell us why you chose to join up at such a young age?

I became a Sea Guardian because I want to make sure that when I'm old enough to ditch my parents and be out in the ocean, I'll be surrounded by the beautiful wildlife and waters that they love so much. I know how much Mum and Dad have loved showing the sea to me, and when I'm old enough to have my own children (not for a very, very long time) I want to make sure they get to enjoy it all too.

What did you think when you first saw the ocean?

I was a bit bemused by what was going on. I'd heard the distant roar of the Southern Ocean since I was born and

I just love listening to it as I go to sleep (not that I sleep very much), but to see those waves coming in and going out and feel the wind on my little face was just magical!

Did you enjoy starring in the film about AMCS and the oceans?

Mum and Dad are both passionate about the sea, particularly Australia's temperate ocean with all its seals and seadragons and kelp forests and sea birds. We're lucky enough to live by the sea and they're in it or on top of it with their surfboards and surf skis as often as they can be.

I loved being in the film as the ocean is clearly something that's going to feature a fair bit in my life, and I want to make sure I can do my bit to help protect it, even though I'm not yet one year old.

What is it you like the most about the sea?

I love the feel of the sand beneath my feet and between my wriggly toes. And I really love watching the waves come in and go out, and come in and go out. The ocean's endless energy gives me inspiration to stay up even longer!

What do you want to be when you grow up?

Apparently I'm going to be a marine biologist, aerial stunt pilot and doctor, although I am open to negotiation on these professions.

Disclaimer: Indigo required a splash of interpretation from her mother, Tooni Mahto, who is our Marine Campaigner and currently on maternity leave.

THANKS FOR YOUR DEVOTION TO THE OCEAN

AMCS staff and board are always touched to receive support from out of the blue from devoted ocean lovers around Australia. Whether it's a biscuit bake-off with friends, raising funds through an official fun run or asking for donations in lieu of gifts when celebrating a birthday, here is a snapshot of fundraisers from around the country.



Cycling FOR SHARKS

A big thanks to eight year old Mia Powell who took it upon herself to do a fund raising cycle ride to raise money to help save the grey nurse shark. This was entirely Mia's idea, and she made her parents very proud. Mia rode a whole seven kilometres by completing 20 circuits of a local park and raised a whopping \$355 towards the campaign to save our sharks! On behalf of the endangered grey nurse sharks around Australia, thanks so much Mia!

Top: Cycling for the critically endangered grey nurse shark.

Bottom: Mia gets ready to hit the park, by Peter Powell

RUNNING for the REEF

We were so proud of the AMCS team who ran in the City2South Fun Run under a glorious Brisbane winter sky. Our runners raised thousands of dollars to support our precious oceans. Thanks in particular to our President, Craig McGovern, Director Darren Kindleysides and his dad Les, and Sea Guardian Sarah Matthews for raising the most funds for the seas. GO TEAM GO!!



Thanks to Team Reef for raising critical campaign funds at Brisbane's City2South fun run, by Ingrid Neilson

UNDER THE SEA

Year 2 students at Kambala Girls School were sparked into taking action to protect marine wildlife and their environment after learning about Life Under the Sea. The students researched threats to our oceans and found that whales had no natural predators, but that the biggest threat to the survival of ocean creatures was humans – through our pollution and over-fishing. So Year 2 decided to do something about it, and collected money through bake sales, garage sales of old toys, organizing a Blue/Green Dress Up Day on June 5 (World Environment Day) and donating their pocket money. To date they have raised \$850! Thank you so much!



A big thank you to Year 2 Students at Kambala Girls School!

DANCING for the Seas

Three cheers for AMCS Sea Guardian Jude Baillie and his friends for raising over \$1000 at their joint birthday party earlier this year. Jude and his birthday friends volunteered to forgo their presents in lieu of collecting much needed funds for marine conservation. And they had a great dance off too! Thank you ocean savers!



Finn (10), Jude (8), Beacu (7) and Caz (5) dancing for the seas! Left: Sea Guardian Jude Baillie, by Hayley Baillie.



save it

Become an AMCS
Sea Guardian today.

Call 1800 066 299
www.seaguardians.org.au