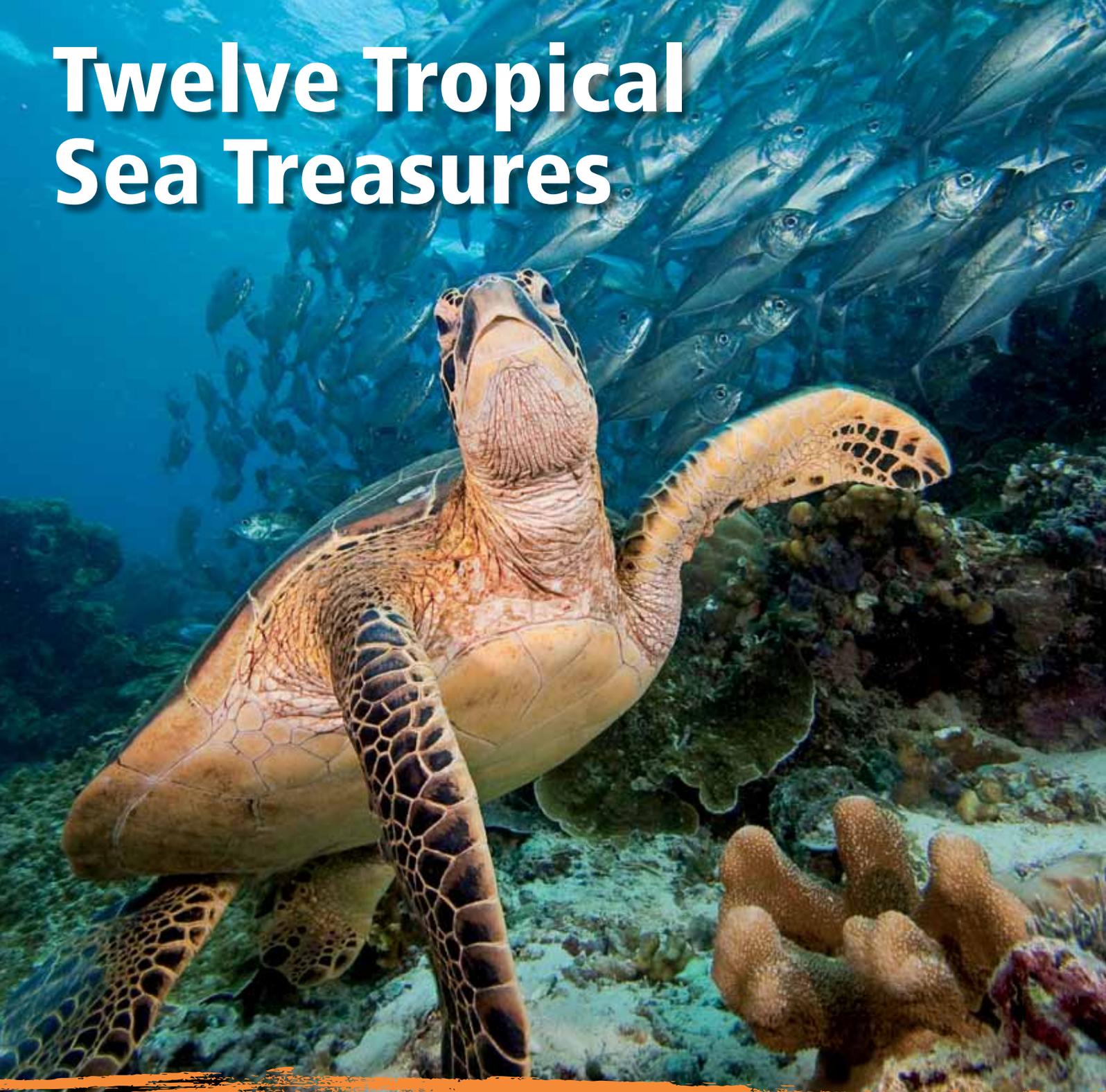


# Twelve Tropical Sea Treasures



Underwater Icons of Northern Australia

# Underwater Icons of Northern Australia



- 1 Joseph Bonaparte Gulf** – huge tides, sea snakes and red-legged banana prawns
- 2 Fog Bay** – flatback turtles, seabirds and critically endangered sawfish
- 3 Van Diemen Rise** – carbonate banks, olive ridley turtles and coral reef cafes for sharks
- 4 Cobourg Pinnacles** – ancient reef remnants, light-loving marine life, leatherback turtles
- 5 Arafura Canyons** – deepwater upwellings, whale sharks and special red snapper
- 6 Arnhem Shelf Islands** – clear waters, endemic species and underwater sacred sites

**5 Arafura Canyons**



- 7 Northern Gulf** – traditional knowledge and contemporary science
- 8 Groote** – rare snubfin dolphins and sea turtles
- 9 Limmen Bight** – seagrass meadows, dugong haven
- 10 Southern Gulf** – fresh waters, wild rivers and phytoplankton
- 11 Central Gulf/Cape York** – soft bottoms, heart urchins and a clockwise current
- 12 Torres Strait** – sea turtle highway

# Our northern tropical seas

**Northern Australians love getting out on the water. A quarter of Territorians own a boat. We fish, sail, kayak, and even swim and snorkel in our waters when the season is right and the water is safe.**

Indigenous Australians in the Top End and Gulf of Carpentaria have a unique connection to sea country based on traditional ownership, cultural connection and contemporary management.

Australians flock to our northern waters every dry season to discover the marine treasures of the Top End and Gulf. They explore the bountiful sea life, hear stories of Aboriginal connection, catch fish and enjoy the relaxed lifestyle.

## **One of the last healthy tropical shelf ecosystems**

We are blessed that our northern waters are in such good shape compared to the tropical waters of our developing neighbours. Indeed we have one of the last healthy tropical shelf ecosystems left on the planet, as a recent study of human impact on the world's oceans showed.

While Traditional Owners of the Top End and Gulf have an intimate knowledge of their sea country, developed over countless generations, scientists are only now beginning to understand the staggering breadth of wildlife that lives here.

The north is an underwater treasure trove, and this report identifies a dozen special places stretching from the Northern Territory/Western Australian border in the west to the tip of Cape York in the east that need protection. These treasures shelter an abundance of

tropical marine life that is threatened with extinction in other parts of the world. It is the good health of these waters and the abundant (but threatened) sea life they support that makes this region globally significant.

## **Under pressure**

Until now, the remoteness of the Top End and Gulf has protected sea life from negative human impacts felt elsewhere. However, the increasing risk of oil spills from the rapidly expanding oil and gas industry, and the impacts from some damaging kinds of fishing are threatening the health and future of our northern waters. Ghost nets and marine pollution are putting additional pressures on our tropical sea life.

Properly protected, the Top End and Gulf will be a global marine haven that safeguards the world's endangered sea turtles, vulnerable dugong and rare dolphins.

## **But less than 1% of the north's tropical sea treasures are adequately protected.**

Right now Australians have a unique opportunity to protect the 12 tropical sea treasures of the Top End and Gulf, before it is too late. If we can reduce pressures on our marine environment now from oil and gas spills and those fishing practices that are destructive, the tropical sea life that thrives in the north will be more resilient to the pressures we have less control over, like rising water temperatures and increasing acidity resulting from climate change.

Below: Snorkelling at Second Island, Maningrida, NT. Photo: Jo Dixon



# The importance of marine sanctuaries

**With increasing pressure on the world's tropical marine environments, Australia has a global responsibility to protect the tropical sea life living in our northern waters. Effectively protected, the region will become a refuge for icon species such as sea turtles and dugong, which are disappearing from oceans around the world.**

Right now, the Australian Government has a once in a generation opportunity to safeguard sea life of the Top End and Gulf. Our tropical sea treasures must be fully protected in a world-class network of large marine sanctuaries across the north, before it is too late.

## What are marine sanctuaries?

Marine sanctuaries are like national parks in the sea. They are large areas of ocean that we can visit and enjoy, where we can dive, swim, surf, sail and kayak, and where plants and animals are protected from exploitation and industrial activity.

Marine scientists overwhelmingly support marine sanctuaries as the most effective tool for protecting marine life. Marine sanctuaries reduce pressures on sensitive marine environments by excluding extractive activities like mining and oil and gas development, as well as commercial and recreational fishing. Free from these pressures, sea life has a chance to flourish, improving the resilience of



marine systems to pests and climate change.

Marine sanctuaries protect critical feeding and breeding areas. Sanctuaries have also been shown to sharply increase the abundance of fish, which can then spill over into surrounding waters.

Marine sanctuaries also encourage visitors and research, creating meaningful jobs in regional areas in tourism and resource management.

Areas outside of sanctuaries need to be managed very carefully too, to avoid overfishing for example, but marine scientists strongly advise that there is no substitute for large marine sanctuaries – free from all forms of exploitation – in order to protect marine habitats and species.

Above: A yellow trumpetfish matches the colour of a Pacific coral rabbitfish, enabling it to sneak up on prey. Photo: Gary Bell/OceanwideImages.com

Below: Visitors get a close-up view of a flatback sea turtle laying eggs on Bare Sand Island, west of Darwin. Photo: Untamed Outback Images



# Tropical sea treasures under threat

**Our tropical sea treasures are under real threat.**

## **Oil and gas**

Rapid expansion of the oil and gas industry across Australia's northern waters poses a major threat to this unique marine environment. Oil and gas exploration and development not only disturb underwater habitats, pollute pristine waters, and interrupt whale migration routes, they have caused disastrous oil spills, such as the 2009 Montara incident off Western Australia, which spewed millions of litres of oil into the Timor Sea over a 10-week period. The rapid expansion of the industry across the Top End and Gulf increases the risk of another, potentially more damaging, spill.

In 2011 a new area for petroleum exploration was released directly adjoining the Cobourg Peninsula Marine Protected Area, 150 kilometres north east of Darwin, threatening sensitive marine life safeguarded by the Northern Territory's only underwater sanctuary.

The oil and gas industry has a serious impact on our marine environment:

## **Infrastructure**

Infrastructure from the oil and gas industry including ports, breakwaters, rigs, wells and pipelines (which can run hundreds of kilometres across the seafloor) destroy habitat and create barriers for migratory animals. This

infrastructure degrades critical feeding and breeding areas of many marine species, including our protected fauna such as whales, turtles, dolphins and dugong.

## **Pollution**

The oil and gas industry is a major polluter. The industry releases huge amounts of greenhouse gases into our atmosphere, including when the gas is frozen for shipping as LNG. Greenhouse gases are a major contributor to climate change and the acidification of our oceans. Toxic pollutants as well as ozone and dust are emitted into the air. Petroleum and hydraulic chemicals from drilling, fueling and accidental spills are discharged into the sea. These are toxic to many species and can have a long-lasting impact on the marine environment.

Noise pollution from seismic testing, construction, shipping and dredging travels far and wide under the sea. Marine life from giant blue whales to tiny tropical fish larvae use sound to communicate and navigate. Seismic testing, construction, shipping and dredging all create huge amounts of underwater noise pollution. Sound travels faster under the sea and low frequency noise in particular can travel huge distances. There are increasing examples around the world where noise may be displacing whales and fish from areas important to their survival.





### Less than 1% protected

Despite threats from the oil and gas industry and some kinds of fishing, less than 1% of these regions are fully protected.

The West Atlas rig spilled millions of litres of oil from the Montara field into the Timor Sea following a blowout in 2009. Photo: TWS Collection

### Ghost nets

Every year thousands of threatened sea turtles drown in discarded fishing nets, known as 'ghost nets'. These nets drift across the sea indiscriminately catching and killing marine life. Sea rangers do their best to remove harmful ghost nets, and with more resources the damage done by drift nets could be reduced. A healthier marine environment, with large sanctuaries, is better able to recover from this kind of threat. Sanctuaries also draw more attention to these problems and attract funding to better manage them.

### Fishing

There are many ways to catch a fish, but some kinds of fishing impact upon the marine environment more than others.

### Trawling

Each year, thousands of kilometres of seafloor across northern Australia are trawled. Trawlers catch prawns and other fish by dragging weighted nets across the seafloor, but in doing so they damage seabed habitats like seagrass meadows and sponge gardens.

Trawlers also accidentally catch (or 'bycatch') non-edible fish and other marine life that swim along, or attach to, the seafloor. Marine life caught as bycatch is often thrown overboard as waste.

The introduction of Turtle Exclusion Devices has reduced bycatch of sea turtles. However, vulnerable sawsharks, dwarf lionfish, wobbegongs, sea snakes and porcupine rays are still being caught by trawlers in the Top End and Gulf.

While bycatch reduction devices have reduced some bycatch, uncertainty remains over the survival of marine life released from these devices.

The need to reduce seabed damage and further reduce bycatch impacts remains a serious sustainability challenge for the trawling industry in northern Australia.

### Shark fishing

Australia's tropical seas are home to many rare and endangered shark species, but existing shark fishing regulations may be insufficient to protect them. Sharks need our protection because they play a critical role as a top predator in our oceans, keeping populations of marine life in check, yet shark numbers continue to decline dramatically worldwide.

While developing countries like Palau, the Maldives and Honduras have declared large marine sanctuaries to protect sharks in their tropical waters, Australia needs to do more to ensure a healthy future for our magnificent tropical sharks.

Left: Prawn trawlers in the 'Duck Pond' at Fisherman's Wharf, Darwin. Photo: Jess Abrahams

# Climate change is a long-term threat

## **Climate change is a long-term threat to oceans biodiversity.**

Our oceans are being dangerously affected by climate change. Our seas are warming, sea levels are rising and, alarmingly, our seas are becoming more acidic. More than a third of the extra carbon dioxide (CO<sub>2</sub>) humans have put into the atmosphere by burning fossil fuels has been absorbed by the oceans (NOAA). Here the CO<sub>2</sub> reacts with seawater to form acid.

Our understanding of how our oceans are changing is very limited, yet we already know that tropical marine plants and animals are moving because of changing conditions. Our sea life needs a network of safe havens, within reachable distances, to adapt to and survive their changing environments.

The world's coral reefs are particularly threatened by climate change. The coral triangle just north of Australia has approximately 75% of the world's coral reefs and includes the centre of global marine diversity for corals, fish, and crustaceans. If our oceans continue to warm, a network of marine sanctuaries in Australia's northern waters will allow tropical sea life from the coral triangle to retreat to a relatively cooler southern haven.

Scientists believe that healthy marine environments protected in marine sanctuaries are essential to help our oceans store and utilise atmospheric carbon – mitigating the impacts of climate change.

*Below: Rising water temperatures have led to coral bleaching in the Northern Territory. Photo: Neville Coleman/World of Water*



# The north needs a network of marine sanctuaries

***In the early 1990s, the Australian Government identified the need for a National Representative System of Marine Protected Areas (NRSMPA) to ensure the long-term protection of the country's marine ecosystems and biological diversity.***

*However, progress towards achieving this goal has been poor. Currently, less than 1% of the waters of northern Australia are 'fully protected', i.e. in marine sanctuaries.*

*At the Ecology Centre, we have developed a set of principles for the selection, design and implementation of marine protected areas in Australia. These principles were endorsed and developed with 44 of Australia's most experienced scientists involved in marine research and social science.*

*For marine conservation efforts to be effective they must always include a network of marine sanctuaries that provides high-level protection. This is the cornerstone of the long-term conservation of Australia's marine biodiversity.*

*A good reserve system must meet principles of 'representation', 'adequacy' and 'comprehensiveness' – which are the Australian Government's own principles. This means protecting all the different types of habitats, and protecting enough of them to ensure their long-term survival.*

*Australia has an opportunity to be a world leader in marine conservation and marine resource management. This means applying best scientific practice to achieve a significant network of high-quality, cost-effective marine sanctuaries and conservation outcomes that provides ecological and economic robustness for a rapidly changing world.*

*I urge the Australian Government to grasp this opportunity for future generations.*

**– Professor Hugh Possingham is best known for his work in conservation biology (over 310 peer-reviewed papers in the international scientific literature), and is currently director of the Australian Research Council Centre of Excellence for Environmental Decisions. He is a member of the Wentworth Group of Concerned Scientists, was the inaugural chair of the Australian Government's Biological Diversity Advisory Committee, and has won two Eureka prizes.**



Above: A scientist on a dive in the Northern Territory. Photo: Neville Coleman/World of Water

Inset: Professor Hugh Possingham, University of Queensland.

# Managing sea country for conservation and culture

**Much of Australia's northern coastline belongs to Aboriginal Traditional Owners who have cared for their sea country for millennia. This practice continues today in the work of Aboriginal sea ranger groups, who draw on traditional culture and conservation science as they patrol and manage vast stretches of our remote northern coastline.**

## Sea rangers

Aboriginal sea rangers keep an eye out for illegal fishing, haul in damaging ghost nets, clean up marine pollution, and monitor unusual activities on land and at sea. Sea rangers also carry out quarantine and border patrols, undertake species and habitat mapping using hand-held 'I-Trackers', and develop and implement conservation management plans – all the while maintaining and renewing important cultural connections to their saltwater country.

## Indigenous Protected Areas

In order to care for their country, Traditional Owners are increasingly seeking to declare Indigenous Protected Areas (IPAs) over their sea country. Marine IPAs are a great initiative, and effective if other marine users, like mining companies, recognise and share Traditional Owners' vision for marine conservation.

Unfortunately, if other marine users don't share a



conservation agenda, Aboriginal Traditional Owners can be without powers under an IPA to control or stop degrading activities. The seabed manganese exploration leases spreading around the Northern Territory coastline are a case in point.

Co-managed marine sanctuaries offer a solution. Subject to negotiation and agreement on protection and co-management, sanctuaries can empower Traditional Owners with the authority and resources they need to give their sea country the protection it deserves.

The federal government should offer Traditional Owners across the Top End and Gulf the opportunity to co-manage sea country using the 'two ways' of traditional cultural resource management and contemporary science-based conservation.

Above: Sea life of the Northern Gulf, including turtles, dolphins and tropical fish, depicted by Dhuwarrwarr Marika, an Aboriginal artist from north-east Arnhem Land in the Northern Territory. Dhuwarrwarr is a member of the Rirratjingu clan and lives either at her house overlooking the beach at Yirrkala or at Gutjangan on Bremer Island.

Left: Aboriginal sea rangers patrol and manage vast stretches of our remote northern coastline, including hauling in damaging ghost nets. Photo: Dhimurru Aboriginal Corp



# Joseph Bonaparte Gulf

1

## Home to red-legged banana prawns

**In the far west of the region, at the NT/WA border, the submerged reefs and huge tides in the Joseph Bonaparte Gulf provide a fertile feeding and breeding ground for 15 varieties of sea snake, including the elegant and olive-headed species. The Joseph Bonaparte Gulf is also home to pipefish and sea horses, as well as Indo-Pacific dolphins and a multitude of sharks.**

Joseph Bonaparte Gulf is the Australian home of Indian or red-legged banana prawns, which are targeted by the Northern Prawn Fishery. Trawling the seafloor for prawns in the Joseph Bonaparte Gulf results in the capture of large amounts of bycatch, as the trawl net scoops up everything in its path.

Right: The Top End's endemic black and white clown fish. Photo: Jeffrey Lavoie

Below: Joseph Bonaparte Gulf provides fertile feeding and breeding grounds for the olive-headed sea snake. Photo: James Fourqurean



### Northern Nemo

The 'Top End clownfish' looks just like Nemo but without the orange colour. Unique to the region, the black and white northern Nemo is a rare variety of clownfish. Clownfish (anemone fish) live in close relationship with dangerous, fish-eating anemones. Covered in special thick mucus, clownfish are immune to anemone stings and can avoid hungry predatory fish.

Just like Nemo, Top End clownfish are targeted by the aquarium industry. Anemones alone are not enough to protect our northern Nemoes: they also need marine sanctuaries.



# Fog Bay

2

## Sawfish shelter

**The warm shallow waters of Fog Bay in the Timor Sea, 100 kilometres west of Darwin, provide a haven for flatback sea turtles, which feed on submerged reefs and nest on nearby beaches.**

Pelicans, which breed in a significant colony on nearby Peron Island, catch a feed from these waters, as do migratory seabirds and shorebirds, which nest and wade along nearby west-facing shores.

The Northern Territory Government has long harboured plans to declare a Marine Protected Area in the adjoining Bynoe region, which would complement a Commonwealth marine sanctuary in Fog Bay. This would help protect critically endangered narrow sawfish, which congregate here, as they are extremely vulnerable to entrapment in commercial gillnets.

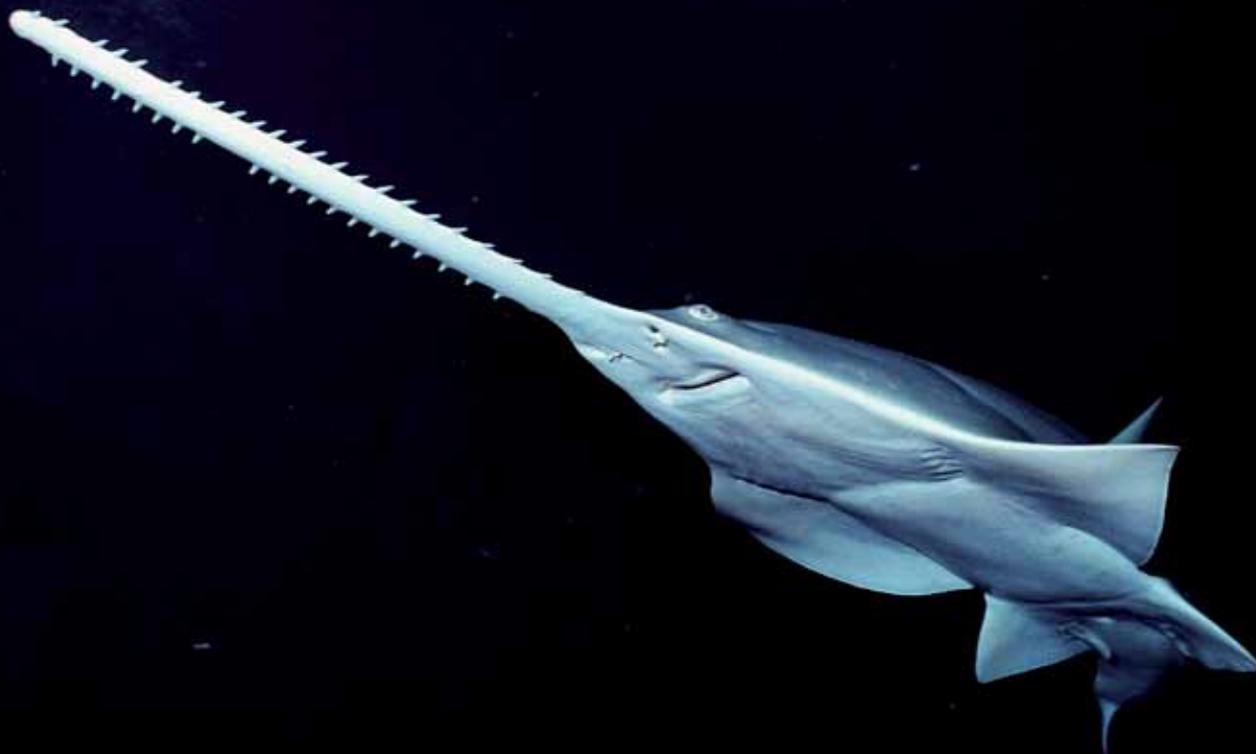
Accidents and spills from the rapidly expanding oil and



gas industry are an ever-present danger for marine life in the Timor Sea.

Above: Flatback turtle hatchlings. Photo: Katherine Howard/WWF

Below: Critically endangered narrow sawfish congregate in Fog Bay. Photo: Norbert Wu/Minden Pictures



# Van Diemen Rise

## Coral reef cafes

**Just 250 kilometres north west of Darwin, the carbonate banks of Van Diemen Rise form a unique underwater marvel.**

Created millions of years ago when the Australian and Eurasian continental plates were colliding, these ancient carbon-rich banks have formed the perfect underwater platform for today's tropical coral reefs.

A hot spot for marine life, these reefs are a favourite feeding ground for sharks and olive ridley turtles. Away from the shallow banks, large mackerel feast on plentiful baitfish, fed in turn by upwellings of nutrient-rich water at the heads of deeper valleys and channels.

This region is an important dividing line between the marine plants and animals of western Australia and those of eastern Australia.

But the oil and gas industry is targeting the petroleum



that lies beneath the banks and reefs of the Van Diemen Rise. To keep marine life safe here, we need to ensure large areas remain free from industrial exploitation.

Above: Large spanish mackerel feed on plentiful baitfish, which in turn feed on the abundant plankton that are found in the upwellings of Van Diemen Rise. Photo: Neville Coleman/World of Water

Below: A bull shark forages over deep reef flats with giant trevally. Photo: Kelvin Aitken/marinethemes.com



# Cobourg Pinnacles

## Leatherback turtle nursery

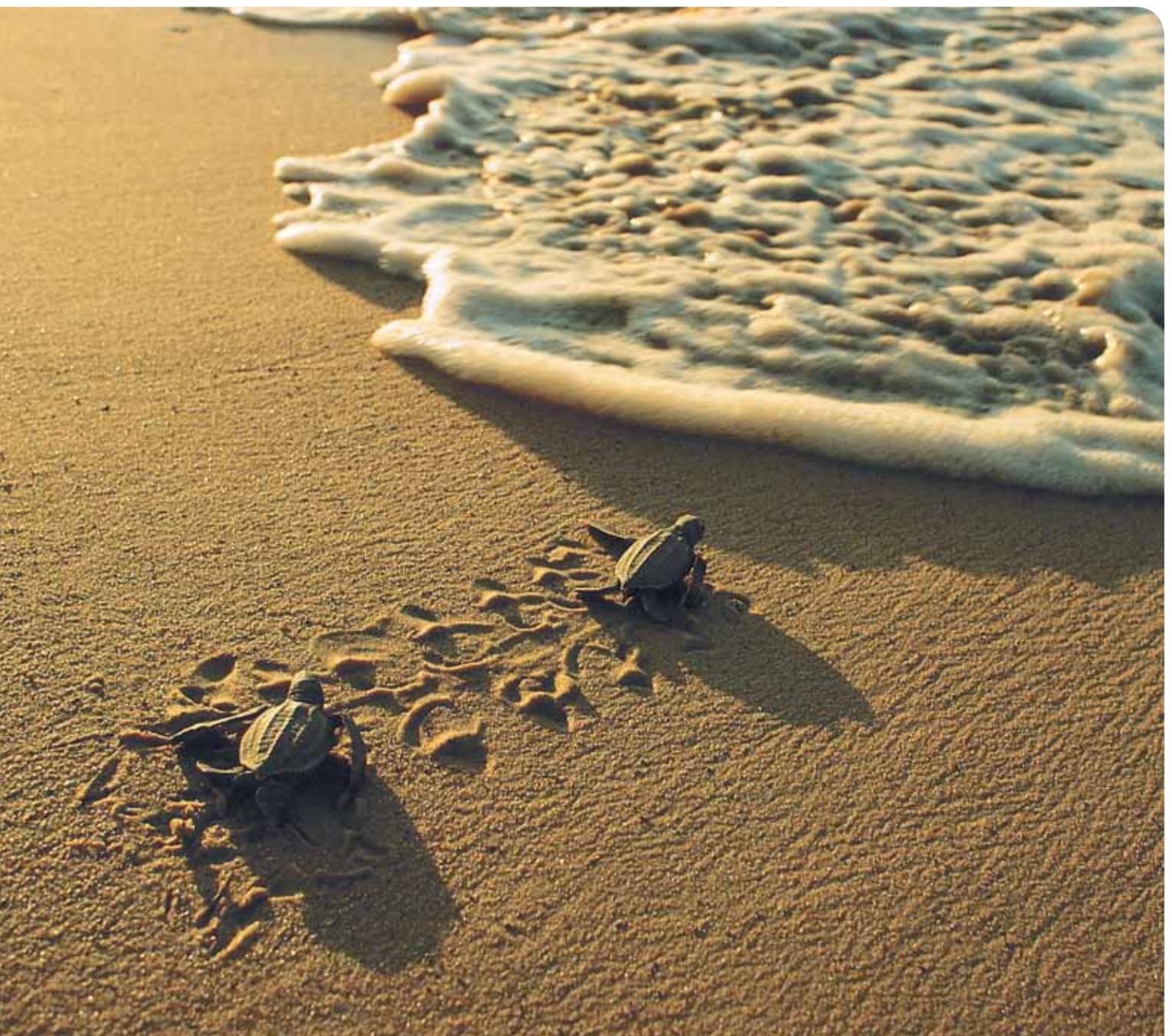
**North east of Darwin, underwater pinnacles off the Cobourg Peninsula rise dramatically from the surrounding seabed. Remnants of ancient reefs, the pinnacles provide a haven for light-loving marine life, including fish, coral and sponges.**

In nearby Garig Gunak Barlu National Park on the Cobourg Peninsula, the only Marine Protected Area in NT waters, leatherback turtles nest and feed.

In 2011, an oil and gas exploration area was released

directly adjoining this marine park, threatening marine life that should be safeguarded. A Commonwealth marine sanctuary here offers the only opportunity in the north to safeguard a continuous protected marine corridor from the coast to the continental shelf and beyond.

Below: Leatherback turtle hatchlings scamper for the safety of the sea.  
Photo: Roger Leguen/WWF



# Arafura Canyons

## An underwater restaurant

**On the edge of the continental shelf, at the head of the Arafura Canyons, deep ocean waters rise, bringing nutrients to the surface. While almost all of the northern region is characterised by shallow continental shelf waters, the Arafura Canyons are a one-off example of cool, deep, undisturbed waters.**

These nutrient-rich waters cause a boom in marine life, creating an underwater restaurant where whale sharks, large schools of fish, and marine turtles come to feed.

This unique underwater environment is home to a distinct population of red snapper, with a genetic code all its own. Filter feeding sponges also live in the canyons, attaching themselves to the hard rock walls to strain a feed from underwater currents.

Right: Filter feeders attach themselves to the hard rock walls to strain a feed from the underwater currents. Photo: Neville Coleman/World of Water

Below: Cool, deep, nutrient-rich waters create an underwater restaurant where whale sharks feed. Photo: Darren Jew



# Arnhem Shelf Islands

6

## Sacred sites of the sea

**Off the north east Arnhem Land coast lie the Wessel Islands. Fringed by colourful reefs and clear waters, this stunning marine environment provides a refuge for large fish such as snapper, emperor and groper. This chain of islands is particularly famous for its high diversity of corals and fish. Up to 70% of the corals found on the Great Barrier Reef are also found here. Many other coral species found here exist nowhere else on Earth.**

The region is also incredibly important culturally. Traditional Owners of the Wessel, English Company, and Elcho islands have registered and recorded sacred sites throughout their sea country, as have the

Traditional Owners of the nearby Crocodile Islands.

Gumurr Marthakal rangers are increasingly active in managing sea country in the waters surrounding the Elcho, Wessel, English Company and Bromby island groups. Subject to negotiation, agreement, and stakeholder co-operation on protection and co-management, an Indigenous managed marine reserve here could protect both natural and cultural heritage, and safeguard connectivity between islands.

Below: Fringed by colourful reefs, the clear waters surrounding the islands of the Arnhem Shelf provide a refuge for large fish, such as coral grouper.  
Photo: Gary Bell/OceanwideImages.com



# Northern Gulf

7

## Traditional knowledge and contemporary science

**The north western corner of the Gulf of Carpentaria marks a transition between the Indian Ocean to the west and the Pacific Ocean to the east. Underwater pinnacles rising from the seafloor in the Carpentaria basin provide unique habitats for corals, sponges and tropical fish.**

Aboriginal sea ranger groups, including Dhimurru and Yirralka, actively manage their waters off the north east Arnhem coast. Drawing on traditional ecological knowledge and contemporary science, they visit sacred sites, track sea life, report illegal fishing and remove ghost nets, while maintaining and renewing cultural connections to their sea country.

Subject to negotiation and agreement on protection and co-management, a marine sanctuary in this corner of the Gulf could potentially help realise the aspirations of Aboriginal Traditional Owners to have greater control and management of their sea country.

Below: Underwater pinnacles rising from the seafloor in the Carpentaria basin provide unique habitats for corals. Photo: Neville Coleman/World of Water



Above: Yirralka sea rangers actively manage their waters off the north east Arnhem coast. Photo: Laynhapuy Homelands Association



# Groote

## Snubfin sanctuary

**Offshore from Blue Mud Bay, the productive waters surrounding Groote Eylandt are an important breeding, feeding, resting and nursery ground for protected marine life, including green and hawksbill turtles. Australian snubfin dolphins, a rare and recently described dolphin species found only in Australia's tropical waters, also live here.**

Alarming, manganese deposits in the seabed surrounding Groote are being targeted for risky underwater mining. A marine sanctuary here could protect natural treasures, and keep the seabed free from mining.

Below: Snubfin dolphins, a rare and recently described dolphin species, are found only in Australia's tropical waters. Photo: Deborah Thiele



# Limmen Bight

## Dugong haven

9

**The highly productive waters of Limmen Bight in the south-east corner of the Gulf of Carpentaria support extensive sea grass meadows, making this region a global haven for dugong. With numbers in sharp decline worldwide, dugong are listed internationally as vulnerable to extinction. These gentle mammals are threatened by habitat loss, boat strikes and disturbance. They also drown in fishing nets. Sometimes called 'sea cows', dugong eat huge amounts of sea grass each day and so depend on healthy sea grass meadows to survive.**

The once extensive sea grass meadows here have been degraded over time by destructive activities such as bottom trawling. Land-based miners also plan to export iron ore through these waters from a mine slated within the proposed Limmen National Park. A marine sanctuary here could help sea grass meadows recover and thrive and ensure that the remaining marine environment in Limmen Bight is properly protected.



Above: Limmen Bight supports extensive sea grass meadows, providing food for dugong. Photo: Neville Coleman/World of Water

Below: The waters of Limmen Bight are a stronghold for vulnerable dugong. Photo: Dejan Sarman



# Southern Gulf

Wild rivers bring life to the sea

10

**The monsoonal rains that flow into the Southern Gulf from Settlement Creek, Mornington Inlet and the Gregory and Staaten rivers make this region unique. Free-flowing wild rivers, unimpeded by dams, wash nutrients from the land to the ocean each wet season. This crucial ecological process fertilises abundant phytoplankton – the food source for a myriad of sea creatures that thrive here.**

The rich coastal waters and unique seafloor features around the Wellesley Islands support an abundance of tropical sea life. Extensive sea grass meadows in the Southern Gulf area are also rich in crustaceans, such as prawns, which are heavily targeted by commercial trawlers.

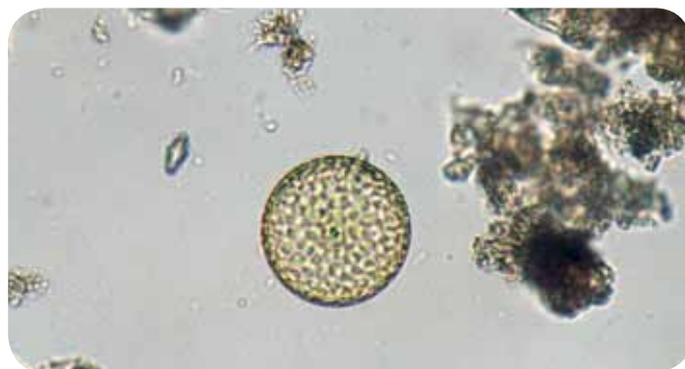
These areas are already being actively managed by Carpentaria Traditional Owners, who have shown their support for environmental initiatives including marine Indigenous Protected Areas and laws that protect Wild Rivers. Following negotiation and agreement on protection and management, a sanctuary here could assist Traditional Owners to gain greater control of

their sea country, as well as help maintain the healthy connections between the rivers flowing into the Gulf of Carpentaria, the coastal zone and the sea.

Below: The monsoonal rains that flow into the Southern Gulf wash nutrients from the land to the sea, creating the perfect conditions for phytoplankton – the microscopic sea-plants that provide half of the oxygen we breathe.

Photo: Kelvin Aitken/marinethemes.com

Bottom: The Flinders River winds into the Southern Gulf between Karumba and Burketown. Photo: Wayne Lawler



# Central Gulf / Cape York

11

## A clockwise current

**The shallow tropical waters of the Gulf of Carpentaria form the largest continental-shelf sea in the world. Nature's cycles here are driven by the monsoonal climate. Moist air and cyclones bring fresh water in the Wet, while strong but cool south-east trade winds blow in the Dry.**

This weather drives a clockwise system of rotating currents in the Gulf, creating a proliferation of marine life. The soft seafloor of the Central Gulf is home to an abundance of heart urchins, which cycle nutrients through the food web. Large invertebrates are also more abundant and diverse in the Central Gulf.

Traditional Owners of western Cape York Peninsula have aspirations for the protection and management of their land and sea country and, following negotiation and agreement on protection and management, a marine sanctuary here could assist Traditional Owners to gain greater control of their sea country.



Above: The Central Gulf is home to an abundance of heart urchins. Photo: Neville Coleman/World of Water

Below: Nature's cycles in the Central Gulf are driven by the monsoonal climate. Photo: Simon Dixon



# Torres Strait

## Sea turtle highway

**In the far east of the region, the Torres Strait separates Australia from our nearest neighbour, Papua New Guinea.**

The Strait is an underwater migratory highway for sea turtles as they swim between their feeding and breeding grounds in the Gulf of Carpentaria and the Coral Sea.

Right: Depressed spider crab. Photo: Neville Coleman/World of Water

Below: The Torres Strait is an underwater migratory highway for sea turtles as they swim between their feeding and breeding grounds in the Gulf and Coral Sea. Photo: David Fleetham/OceanwideImages.com



# Act now!

**Act now! Tell the Australian Government you want real protection for our tropical sea life.**

Visit the Save Our Tropical Sealife website ([www.saveourtropicalsealife.org.au](http://www.saveourtropicalsealife.org.au)) and show your support for protecting the tropical sea treasures of Australia's north.

Let Federal Environment Minister Tony Burke know you want all 12 underwater icons of northern Australia fully protected.

Right: Knotted fan coral. Photo: Neville Coleman/World of Water

Below: Communities from all around Australia created sand sculptures on World Turtle Day to send a message to the Federal Environment Minister Tony Burke that our sea turtles need marine sanctuaries to survive. You too can take action by visiting [www.saveourtropicalsealife.org.au](http://www.saveourtropicalsealife.org.au).

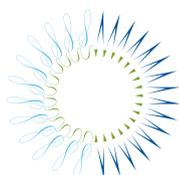
Photo: Laurie Deacon





Save Our Tropical Sealife is an alliance of conservation groups working to ensure tropical sea life in Australia's north and north west is fully protected in a world-class network of large marine sanctuaries from Kalbarri (WA) to the tip of Cape York (QLD).

Learn more at [www.saveourtropicalsealife.org.au](http://www.saveourtropicalsealife.org.au)



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