

An underwater photograph showing a school of five black and white striped fish swimming over a bed of green seagrass. On the left, there is a large, porous yellow sponge attached to a rock. The water is clear and greenish, with sunlight filtering through from above.

# MARINE *Life*

Blockbuster national edition WITH LIFTOUT!

**August/September 2012**

**ISSUE 20**



## Our Goal

To educate, inform, have fun and share our enjoyment of the marine world with like-minded people.

## The Editorial Staff

**Emma Flukes, Co-Editor**, putting the glam back into nerdy sciency thingy

**Michael Jacques, Co-Editor**, Knowledge is no guarantee of good behavior, but ignorance is a virtual guarantee of bad behavior

### WA Correspondent – Michael Lee

He shall have dominion over the fish of the sea, and over the fowl of the earth, or good photos at least.

### NT Correspondent – Grant Treloar

Crocodile- he's sweet and irresistible – to crocs

**Tas Assistants** – Phil White and Geoff Rollins

### Main Contributors this issue

Kevin "Dr Hook" Newton – SA, Peter Day – SA  
Keep up the good work, please!

**Disclaimer:** The views expressed in this publication are not necessarily the views of the editorial staff or associates of this publication. We make no promise that any of this will make sense.

*Cover Photo:* Seagrass meadows and Old Wife, S.A. – Antony King

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## Marine Life gets cosmetic surgery

You might have noticed that your *Marine Life* is looking a little different this edition. We've responded to some feedback (see, we do listen!) received from readers who were keen to see the magazine in landscape format to make it easier to view on their iDevices. We'd love to hear what you think about the change of format – love it? Hate it? Didn't even notice? Keep dripping through your feedback so we can enhance the pleasure of your *Marine Life* reading experience. Hit us up at [marinelifetassie@gmail.com](mailto:marinelifetassie@gmail.com)

## Supersized Supertrawler Supplement!

The second major change we've implemented this edition is a **SUPERSIZED LIFTOUT SUPPLEMENT!** We here at *Marine Life* love exploring all the topical issues [supertrawler, anyone?], but we realise it can be hard to maintain an attention span through big chunks of text. We couldn't quite fit it all into a tweet or a Facebook status. So rather than diluting some of the fun bite-sized articles in the main edition, we've included it as an "extra supplement". Think of it as the PG-rated nearly-nude centrefold, with less nudity and more fish. We're trialling this liftout supplement thing this edition to cut down on the length of the main mag, but will do it again in future editions if you like the idea.

This month's liftout is devoted to the oh-so-topical **SUPERTRAWLER**. Get stuck into it for basic background on the boat and the fishery, and our attempts to spell out the issues from a number of points on the conservation slider. Some of these are a bit heavy reading, but the reward is definitely there if you can't get enough trawler action. As well as the contentious issues, there are some nice critter features about baitball fish species and how they fit into the picture.

We don't mind whether you agree with the supertrawler proposal or not, we just want you to care. We'd love your feedback and will come up with a pathetic reward for the best comeback that we can print next issue. Also, let us know if you prefer your salty politics in this format, and we will then have your consent to deal with the other great issues of the sea.



[CLICK HERE](#) to read the August-September supersized supertrawler supplement!

# (INTER)NATIONAL News Roundup

## Jelly Wars

Overfishing is feared to have carved out more ecological space for jellyfish, and some have linked climate change and warming oceans to sudden explosions or blooms of jellyfish populations.

Various incidents have fuelled media interest. In 2009, a Japanese fishing boat capsized when its crew tried to haul in a net full of the huge 200 kilo Nomura jellyfish. Fisheries in Tunisia and Ireland have been disrupted, and power plants in Florida, Scotland, Japan and Israel have had to temporarily shut down when jellyfish clogged their cooling-water intake systems.



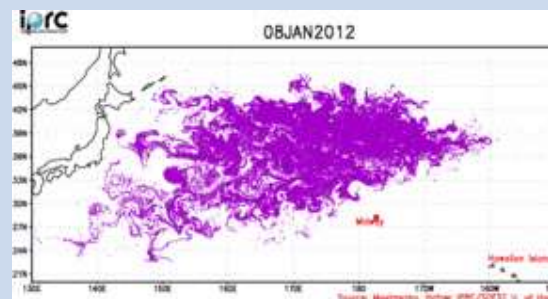
"The lion's mane, the largest jellyfish on earth. A dead one stung over 100 people on a state park beach in New Hampshire in 2010".[Why? Did they think it was a supersized Big Mac - Ed]  
Photo: Kip Evans, NOAA

A U.S. scientist working in Australia, has argued there isn't enough hard data to conclude that global jellyfish numbers are on the rise. According to Dr. Condon, the jellyfish bloom story was first published in the journal "Science" in 2001 and has been widely cited by scientists (over 2,600 times, according to Google Scholar). Other contrary journal articles were ignored *[I assume he means his articles-Ed]*.

To try and rectify this lack of information, the Global Jellyfish Group have created the Jellyfish Database Initiative, or JEDI *[we have 'Star Wars' figurines spread around the lab I take it?]*, to compile available data on jellyfish populations. The article went on to make some good general points about any scientific report, "a true paradigm should

always be based on scientific data, observation and controlled experimentation using rigorous statistical analyses". It also warned to beware of shifting baselines: a lack of older data can lead us to conclude incorrectly that there is a new problem. The critique could have stopped about there, but then started on "myths in science" that are "spread by colleagues". He went on to name names, talk about "bias", etc. In summary, "...there is much discord, even among jellyfish researchers, about whether jellyfish have increased globally".

## Tsunami debris in the Pacific



A tsunami hit Japan on March 11, 2011. When the water receded, it carried with it huge amounts of debris. Now, the debris is floating in the Pacific, drifting with the winds and currents. The majority of heavy debris will

move towards the North Pacific Garbage Patch, a convergence located between Hawaii and California where floating objects tend to concentrate. There it will stay until changes in the winds and currents send what is still floating towards Hawaii's east-facing shores.

## Seabird Decline

A new review reveals that seabirds are now more threatened than any other group of birds and it's getting worse every decade. Of the 346 seabird species, 97 (28%) are globally threatened, and a further 10% are listed as Near Threatened. The World Conservation Union says 102 of 328 recognized seabird species are considered threatened or endangered. The albatross family is especially imperiled, with 17 of the 22 species currently threatened with extinction.



Fishing has a big impact, while non-native rats have been observed preying on roughly a quarter of all seabird species, often with disastrous consequences. The rats attack [bird](#) nesting colonies, eating eggs, chicks, and sometimes even adult birds. Smaller seabird species and those that nest in burrows or rock crevices are particularly at risk. The UK government has recently initiated a project to spend \$3M on aerial bait bombing of just one island in the Pitcairn Group in order to save the Henderson's Petrel.



Australia's Eastern Tuna and Billfish Fishery historically has an annual bycatch of up to 4,500 flesh-footed shearwaters (*Puffinus carneipes*). The shearwaters breed on Lord Howe Island and forage in areas of high fishing activity. They also face threats such as habitat loss, ingestion of plastic, and predation by invasive predators.



Some Fisheries managers are saying that changes to the way we fish in order to save birds are too expensive. "Efforts to reduce fisheries bycatch are improving, but they are costly and difficult to enforce," Dr Pascoe says. "Fishery area closures are one possibility, but these impose substantial costs on the industry

through loss of access to key fishing grounds. They are suggesting that we could save more birds by worrying less about fishing and more about what causes high bird mortality on land. It is stated that rat eradication

could be at least 10 times more cost effective than area closures in conserving seabird populations, "Previous modelling suggests that even modest predation rates by invasive species such as rats may have a significant impact on the seabird population. This is called a "biodiversity offset system", actions at one site that compensate for losses at another. Dr Pascoe and his colleagues found that biodiversity offsets may play an important role as a 'stop-gap' measure to provide initial relief where seabird populations have threats other than fishing affecting their populations. It is acknowledged in the report that these may not be an appropriate long term solution. The mechanism used to fund biodiversity offsets could be individual vessel levies. *[Good luck getting them to agree to pay. I'd say the main focus has to remain on the harm YOU do and the finding of a prompt best practice solution. Having said that the study is still a useful contribution to the debate and maybe we can do more on land too-Ed.]*

### ***New funding to track Australian fish***

New funding of \$300,000 from the Australian Government will extend a successful Tasmanian project tracking fish Australia-wide. For more than two years, many Tasmanians have spotted uncommon fish and other marine life for Redmap – the Range Extension Database and

Mapping project - with the goal of finding out which species are on the move in Tasmanian seas. And now Redmap will be launched around Australia from October.



Dr Gretta Pecl says all Australians will be able to share sightings and photos of marine species that are not usually found at their local fishing, diving or swimming spots. "We are keen to know about sightings of any marine life considered uncommon along the coast – not

just fish but also turtles, sharks, rays, crayfish, corals, seaweed, urchins and prawns," Dr Pecl said. "Redmap started in 2009 as a Tasmanian pilot project. "So far our members have logged more than 400 sightings of 70-plus marine species, including eastern rock lobster, yellowtail kingfish, Maori wrasse and zebra fish, many spotted farther south than usual," she said. "We have around 750 subscribers to the Tasmanian Redmap newsletter and our community sightings have been included in three scientific papers," she said. The new grant will also fund a smart phone application:

Members of the public can become involved by [signing up to the June newsletter](#) and logging unusual fish catches on the Redmap website.

### ***Marine Science suffers from acute skills shortages***

The many unemployed PhD graduates might find this hard to believe, but apparently there is an acute skills shortage in Australian marine science. Dr Ian Poiner, said: "Our oceans need chemists, economists, engineers, geographers, mathematicians, microbiologists, modellers, physicists, statisticians and taxonomists. Unless we do something about this, we will not be able to get the full benefits from our vast marine estate." "As our population increases and coastal and offshore development continues to expand, efficient use and wise management of our marine estate is our greatest challenge and critical to the national interest," Dr Poiner said. "Our greatest challenge is getting the economic benefits whilst maintaining and conserving our marine ecosystem's health and services," Dr Poiner said. "Our current knowledge base is poor and inadequate-at best, we have documented only 20 per cent of Australia's biodiversity."

### ***Giant offshore marine parks***

Environment Minister Tony Burke has announced plans to create the world's largest network of marine parks. It will be located in Commonwealth waters 3 nautical miles from the coast. Almost every State is affected, but the Coral Sea in particular will become one of the world's largest protected areas. It's said to be as big a policy decision as the Franklin Dam or the establishment of the Great Barrier Reef Marine Park. The Environment Minister, Tony Burke, said "It's a bigger step forward than the globe has ever previously seen. Australia is a good manager of its fisheries, but that doesn't mean we can't go a step further and establish a National Parks estate within the ocean".



According to "Fishing World's" Jim Harnwell, Minister Burke, "...has for the past year or so worked diligently with angling groups in an attempt to assuage the impacts of his plans on our activities...While Burke should be given due credit for at least trying to work with us, the fact is there was no need for him to ban responsible rec fishing in his marine national parks in the first place". In fact, most affected waters aren't

accessible to smaller craft anyway, particularly a massive new network offshore from North Queensland.

If there are any losers they are commercial fishermen. Figures in the order of \$100 million have been stated as the compensation needed, but fishermen have rejected this as inadequate. The Minister said, "I don't want to commit to that being precisely the number. We're working it through on a case-by-case basis". Perth-based fisherman Clayton Nelson employs about 20 people harvesting the sea for scallops, prawn and fish. With the area they can fish cut by a third, he fears for the future, "We've got investments in infrastructure, in vessels, in crew's livelihood, their families. It's an important part of our life".

Mining exploration is still up for discussion with environmental groups pushing for exploration bans. WA Fisheries and Mines and Petroleum Minister Norman Moore said the Federal Government's final Marine Reserves Network Proposal was a 'dog's breakfast' that would hurt Western Australia's economy. Mr Moore said the proposal would severely curtail WA's oil and gas industry and impinge on current and future petroleum exploration and production activities.

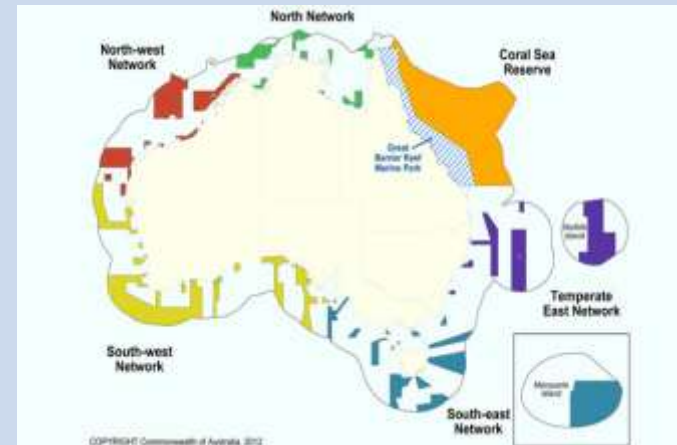
The Minister will make a final decision on the plan following a 60-day consultation process, but warned the process would not involve shifting lines on maps. The parks won't be finally declared until the end of the year. Meanwhile, fishermen have been protesting vocally and running full page ads indicating that recreational angling is at risk (none of the parks are within 3 nm of the shore, and the 'no-fishing' sanctuary zones are relatively small).

Despite the vocal approval of many Green groups, some marine scientists have queried the initiative. Some of the sanctuary zones are out in lifeless abyssal plain, few areas of high productivity are included and almost none of the key habitat is protected from fishing. It also

includes existing reserves as if they are new, and in one case actually reduces the protection offered to an existing sanctuary.

### ***Where are they?***

**Coral Sea Region** - which covers an area of more than half the size of Queensland - supports critical nesting sites for the green turtle and is renowned for its diversity of big predatory fish and sharks.



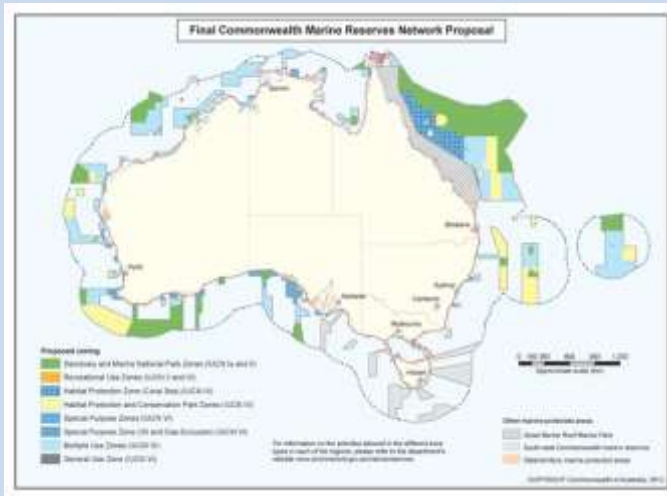
**South-West Marine Region** - which extends from the eastern end of Kangaroo Island in SA to Shark Bay in WA - is of global significance as a breeding and feeding ground for a number of protected marine species.

**Temperate East Marine Region** - which runs from the southern boundary of the Great Barrier Reef Marine Park to Bermagui in southern NSW - includes the waters surrounding Lord Howe and Norfolk Islands and is home to the critically endangered east coast population of grey nurse shark, the vulnerable white shark

\* **The North-West Marine Region** - which stretches from the WA-NT border through to Kalbarri, south of Shark Bay in WA - is home to the whale shark and provides protection to the world's largest population of humpback whales.



The Marine National Park Zones (green on the national map) provide the highest level of protection, banning extractive activities including fishing and petroleum. Passage of vessels is still allowed in those zones, as is tourism and some recreational activities, such as diving. The Habitat Protection Zones and Conservation Park Zones (yellow on the map) protect habitats such as coral reefs. Some low impact extractive activities - including some forms of commercial fishing - are allowed in those areas, while recreational fishing and tourism are allowed. The Multiple Use and Special Purpose Zones (light blue and dark blue on the map) allow for a greater range of activities, both recreational and commercial. Some activities, for example bottom trawl and gillnet fishing, are excluded.



## Seagrass stores more carbon than forests



Coastal seagrass can store more heat-trapping carbon per square km than forests, which means these coastal plants could be part of the solution to climate change. Even though seagrasses occupy less than 0.2% of the world's oceans, they can hold up to 83,000 tonne of carbon per square km. That is more than twice the 30,000 tonnes of carbon per square kilometre of a typical terrestrial forest. Seagrass meadows store 90% of their carbon in the soil and continue to build on this indefinitely.

Scientists found that seagrasses account for more than 10% of all the carbon buried in oceans, also known as blue carbon. The study included researchers from the USA, Spain, Australia, United Kingdom, Denmark and Greece. It was co-authored by Professor Gary Kendrick of UWA.

In addition to storing carbon, seagrasses filter out sediment before it gets into oceans, protect coastlines from floods and storms and serve as habitat for fish, crustaceans and other commercially important species. Seagrasses can be damaged by human activity, such as pollution from oil spills and by boat propellers and cargo that can rake through seagrass meadows and cut through roots. "The good news is if seagrass meadows are restored they can effectively and rapidly re-establish lost carbon sinks and stores, as well as providing a range of other valuable ecosystem benefits, including water quality protection, and as an important biodiversity habitat," says Prof Kendrick. Some of the study's authors are affiliated with the Blue Carbon Initiative, a global plan to mitigate climate change by conserving and restoring coastal marine ecosystems. The initiative is a collaboration between the International Union for Conservation of Nature and Conservation International.





## Antarctic & Southern Ocean News

### ***Satellite shows coastal ice shelf thinning rapidly***

Between September 2002 and October 2010, Envisat radar altimeter measured the elevation of the Antarctic ice sheet along a repetitive track. Each ground track was observed about 85 times during this time. Most of the altitude variations are due to inter-annual meteorological variations. Closer to the coasts, some glaciers can lose up to several meters in altitude per year, especially in West Antarctica.

The measurements revealed places of dynamic thinning in regions of rapid ice flow. In West Antarctica, in the "Pacific" part, this processing show that glaciers are thinning, losing up to several meters a year. Those that are reaching the Amundsen Sea even undergo an acceleration in their thinning. In East Antarctica, some glaciers are losing thickness, but without any observable acceleration.

### ***The ultimate Winter beach clean up***

*Photos Richard Dakin*

Forget your board shorts, it's the monthly marine debris survey at Bauer Bay Macquarie Island. Now it is the Antarctic winter, with expeditioners grateful for any break in the weather that will allow a foray out of the huts during the short daylight hours.

An overland hike in snow and wind was taken to record the amount of marine debris arriving on the island and threatening local seabirds. The

total number of items collected for May was 350, less than the average for the past 12 months which is 647 items. Persistent snow followed by persistent rain may have contributed to the lower than average result.



An example of what was washed up on the beach: glass fragments, plastic bottles and tops, packaging, timber, plastic bags, and netting fragments. Materials could have come from anywhere in the world and been in the water for many, many, months.





## Queensland News

### Gladstone Dredging

- by Mike Jacques

#### ***The impacts of dredging generally***

Ok, so digging up the seafloor sounds like a bad idea for the environment, but humans do it quite a lot as not every place has a port that is naturally suitable for trade or provides safe shelter for ships. Often our ports are near major trading cities and in restricted, polluted, river estuaries. These rivers often silt up after floods. Most ports in Australia need to be dredged from time to time.

How badly dredging can damage the environment depends a bit on how much you do, how you do it, and where. Sometimes it can help a river by removing obstructions and unnatural sediment banks. In areas subject to unnatural levels of silting it can help preserve mangroves and saltmarsh.

Often it is not helpful to the local marine environment. In the short-term marine flora and fauna gets dug up and destroyed. Nasty stuff locked in the sediments, like heavy metal pollution, can be released. Big plumes of stirred up sediments can float downstream and smother subtidal and intertidal communities. It can also change the way water moves around the harbour (hydrodynamics) and cause some areas to erode away, like favourite beaches, while other areas are smothered with new sand.

For the smaller operations, the trouble tends to be confined to within a kilometre or so of the works, depending on the currents. Silt curtains can be used to catch finer particles in some cases. This low-level activity

can still be a big problem if that happens to be near a special habitat, like a sensitive bird nesting site, or turtle beach. Bigger port developments can cause widespread changes.

#### ***What's happening at Gladstone?***



Gladstone is already an industrial town with a large port and alumina smelter. The Port of Gladstone is already one of Australia's busiest ports, handling over 1400 vessels annually. It also advertises itself as the 'Gateway to the Great Barrier Reef', although the marine park is actually about 50 km away.

Gladstone wants to provide for the coal gas industry and several industrial sites are to be set up on adjacent Curtis Island. To provide new port facilities the local port authority are in the process of removing 26 million cubic metres of sediment, the biggest dredging program in the port's history. The sand is picked up by a variety of dredgers, from the quite sophisticated, to an excavator on the back of a barge. This material is transported on barges, or pumped along a submerged line, and deposited inside the reclamation area at Fisherman's Landing, or at the East Banks Sea disposal site, a few kilometres off the coast.

The capital cost of construction of the reclamation for the project is estimated at \$343 million over 40 years. The cost of capital dredging has been estimated at \$656 million. The main works will go until 2014, but maintenance of the channel will still be a big job with on-going silting of some of the dredged channels likely to be around 250 000 m<sup>3</sup> per year.





The works required environmental approval and one thousand boreholes 25 metres deep were made to take sediment samples throughout the Western Basin. The samples are taken to

determine the soil and chemical make up in each area. These were tested to see if they contained iron sulphides that were likely to release acid sulphate contamination if exposed to the air. Bad test results meant the area was still removed, but the spoil was buried below sea level in the reclamation area, or dumped at sea.

Plume Modelling was done to see where the sediments would go and how quickly it might settle or dissipate. Some trigger limits for contaminants and turbidity are set by Regulators, but not everyone is happy that is enough. The port authority does have its own monitoring program and claims that the dredging program is not causing major problems.

That low level of public unhappiness exploded into a full blown protest when dead and diseased fish were found around the harbour. The

Environment Department investigated and has repeatedly stated that water quality has been maintained despite dredging. It is saying that sick corals and diseased fish can't be blamed on dredging and the problems are related to earlier natural flooding events.

The proponent has also downplayed any changes, saying that Port Curtis is naturally highly cloudy (turbid). According to the port authority, "It contains several mud flats that are exposed and eroded during low tides and incoming waterways carry large silt deposits from the hinterlands in times of flood". That is true, but a recent Courier Mail photo (if taken in similar conditions) seems to show that the dredging has significantly increased that turbidity.

A recent James Cook University report, commissioned by local business owners, found dark plumes of sediment spreading as far as 35 kilometres from the main dredging site. Report authors Dr Caroline Petus and Dr Michelle Devlin say dredging activity does affect the harbour's water quality. "It challenges what the port and the

government have been saying and shows dredge toxins are travelling quite some distance from the original dredging site." A local fisherman said. "Anyone can put two and two together and realise that this would have an impact on marine life."

The JCU report is the third report Gladstone locals have commissioned through public donations. Professor Barry Hart's was critical of the government's investigations. He stated that the department's work was vague,

did not prove water quality was not causing disease and excluded heavy metals, which made it lack credibility. It is usual for an investigation to



be asked to prove that something is not happening. In a later report, controversial marine animal expert, Dr Matt Landos, said that 43.8 per cent of 623 mud crabs sampled had shell lesions, which was markedly above historical levels. "Dermatitis is a very common lesion across all the fish examined," he said. "The epidemiological pattern is suggestive of a common water-borne irritant across all groups ..." He boldly stated that "...One (cause) is exposure to dredge spill and associated toxicants." Impacts were widespread because of the size of the dredging project and the failure to employ best practice such as the use of silt curtains.

This picture of widespread damage is contradicted by an earlier CSIRO report paid for by Gladstone Ports Corporation. The CSIRO found levels of dissolved metals had not increased in areas where dredging is being done. "The good news is that all those metals we monitored were below the levels of concern," Dr Apte said. Dr Apte said aluminium levels exceeded 'environmental concern level', but that definition "doesn't imply that the levels are unsafe". The report found "elevated" levels of arsenic in some sediment in Gladstone Harbour but not above previous historical levels. Although the report found nickel and copper concentrations were high in some parts of the harbour, it's from natural sources. Metals in suspended sediments were not elevated.

### ***What is the real issue? – My take***

All this is very interesting debate, but even the government regulator long ago accepted that damage would be done. "The EIS acknowledges that the project, and the cumulative effect of other proposed industrial developments in the Port Curtis area, will impact on marine megafauna that use the project area. In particular, key potential are identified due to direct removal of foraging, feeding and inter-nesting habitat for dugongs, turtles and dolphins; decline in water quality from dredging and construction disturbance; and increase in sedimentation that may result in loss of seagrasses and other benthic communities". As for fisheries, the Queensland Dept of Employment, Economic Development

and Innovation (DEEDI) had already suggested that "the proposed development would have an impact on commercial, recreational and indigenous fisheries operating in the harbour and that these should be taken into account and compensation paid where negative impacts are demonstrated to have been experienced".

In that case, I'd say that the debate about reports is a bit of a sideshow. No-one really believes that this development can happen without a significant environmental impact. I'd say that environmental damage of this kind has long been suspected, even if it genuinely isn't yet showing up in the monitoring results. We are still going ahead with it because the government's Coordinator General (basically understanding all of the potential pitfalls) stated that the project was, "...essential to the future development of maritime industries and services in the Port of Gladstone and in particular for development associated with the emerging LNG industries". The LNG industry needs somewhere to go to get to international markets. Gladstone is the obvious place to put a development of this kind.

They are all bending over backwards to make this happen because LNG means money. We aren't just talking big money, it's huge money! The British Gas Group project costs will well exceed \$US15 billion, while Santos will spend close to \$US19 billion on their Gladstone projects. What is being created out of the cloudy waters of Port Curtis is not a shipping channel, but a global economic juggernaut.

Everyone will value the issues differently. The port area isn't pristine, and there are plenty of social and economic benefits. The effects of the relatively distant dredging on the GBR Marine Park is concerning, but isn't fully known. The GBR World Heritage Area covers the coastline surrounding the port precinct and seems to be much more likely to suffer. The risk of increased shipping accidents and oil spills near the GBR MPA and WHA is also a real issue, but can it be effectively controlled?



## All downhill at Cape Upstart



A total of 73 dead turtles have now been discovered washed up on beaches south of Townsville. Queensland Parks and Wildlife Services, says the turtles were nourished with no obvious signs of illness. That eliminates the likelihood of the deaths being linked to last year's starvation deaths after Queensland's summer of natural disasters which has seen over a thousand turtles die.

"The thing that's concerning for us is that we don't really know at this stage. The early tests haven't shown any obvious answers with what's happening with the turtles," "The live ones are obviously sick. They're disorientated, they tend to get washed up into the beach and are unable to get back into the water." "We still can't rule out poisoning as toxicology reports have yet to be finalised."

Most of the green turtles found dead have been adult females, with some adult males and adolescents as well. Adults have a shell length of about one metre and average about 130 kg, although some nesting females can weigh more than 180 kg. The species is considered vulnerable under national legislation and a loss of just one breeding sized individual can have an impact on the population.



WA News

## South Coast Sunfish deaths a natural occurrence

Department of Fisheries' scientists have ruled out disease as the cause of large fish kills on the South Coast of Western Australia in May. The stranding of hundreds of slender sunfish along numerous beaches was a natural phenomenon. Similar occurrences in past years had shown stranding often occurred when a strong Leeuwin Current carried the tropical and sub-tropical species into waters off the South Coast.

"As suspected, these events are an unfortunate natural occurrence, but it is important that we investigate all fish kills to rule out any other risks in the marine environment," Dr Jones said.



"There is some body of opinion that suggests the slender sunfish get trapped close to shore and cannot function well in the colder South Coast waters. We don't know much about the life cycle or biological characteristics of this species and previous research has not been able to determine whether the stranding events are seasonal or less frequent.

"We do know that slender sunfish occur worldwide in tropical and temperate marine environments. Researchers have found it to be a relatively fast swimming species, despite its lack of a true tail. It can grow to around 90 centimetres in length." It occurs worldwide in most tropical and temperate marine waters. In Australia it is known from northern Queensland, south to Tasmania and west to the south-western coast of Western Australia.

Dr Jones said it was important for people to report all fish kills, whether natural occurrences or not, because they represented a potential health hazard – especially mass stranding events, where there was a lot of rotting fish on a beach.



### Abrolhos Conservation Project restores seabirds

*Photos: Jenita Enevoldsen*

Department of Fisheries had enlisted the support of Durack TAFE students and SeaNet team members, to plan

and carry out work to eradicate non-native species. The project, has already achieved some success, and also involves monitoring the recovery of seabird colonies.

Rat Island in the Easter Group of the Abrolhos suffers human impacts that go back more than a century. There has already been significant work over the years to eradicate cats, rats and rabbits. More than 5000 pairs of Sooty Terns, had recolonised Rat Island after an absence of 70 years caused by the depredations of rats and cats.

After work to track the re-establishment of seabird colonies, the Recovery Project's next goal is to remove the introduced weeds and plants. The August field trip will help map the extent of the non-endemic flora and identify the best way to carry out eradication.

[The Abrolhos Islands - Information Guide](http://www.fish.wa.gov.au) is available online at [www.fish.wa.gov.au](http://www.fish.wa.gov.au).

### Kelp and reef not main influence over lobster distribution



Despite the importance of offshore reefs and deepwater habitats to the sustainability of the western rock lobster, little is known about the factors that influence the species distribution beyond the general requirements of reefs and habitats dominated by kelp (*Ecklonia* sp.).

A new study, from the University of Western Australia's Oceans Institute and the Department of Fisheries, has developed detailed species distribution maps for the western rock lobster fishery.

Using geo-referenced lobster pots, hydroacoustics, towed video and multi-beam surveys, the team produced maps that can be used to accurately predict lobster distribution off the WA coast. Interestingly, kelp and reef were not selected as predictors, as expected. Instead, the models found that a close mix of terrain, hydrodynamics and available shelter and prey were best in determining lobster distribution.

Dr Renae Hovey from UWA Oceans Institute says: "Our goal was to examine the habitats at a scale relevant to individual lobsters. We were aware the finer scale analysis would result in more detailed information, however the importance of geomorphic features was a bonus."





## NT News

### Marine Life Goes to Darwin

Marine Lifer, Mike Jacques, happened to be in Darwin and caught up with Darwin Sub-Aqua Club. The club is now the only diving operation in the N.T., after all the local dive stores closed. Despite having fantastic coral reefs, unique marine life, and a menagerie of historic wrecks, Darwin Harbour often has poor visibility and big tides. It's dive-able on



the neaps only, and that's once every fortnight and often on weekdays. It's too hard for a dive store, but bearable for amateurs.

The Darwin Sub-Aqua Club has active Thursday

night social meets, and dives Darwin's massive war wrecks whenever they get the chance. They are also keen on international travel, with regular trips to south-east Asia. Recent trips to the rarely dived areas of East Timor have been very popular.

The clubroom houses their boat, nitrox tanks and air compressors. I'm jealous. It is also a group with plenty of history. The steering gear from the U.S.S. "Peary", a destroyer sunk during the 1942 air raids, makes a handy spot for drying B.C.s.

The big bonus for Marine Life Magazine, was that Grant Treloar volunteered to help record the goings on of our tropical marine 'tragics'. Thanks Grant and D.S.A.C. , welcome to the Marine Life readership!

### Luxury croc hunts considered

The Federal Government is considering allowing 50 saltwater crocodiles to be shot by trophy hunters in the Northern Territory as part of a



crocodile management plan. At a cost of around \$10,000 per crocodile, Mick McLeay, from the Game Hunters Association of Australia, says most Aussies

will stick with shooting pigs and deer. "I think most of your hunters from America and Sweden and places like are quite willing to pay for such a thing and will probably benefit from it the most."



## NSW News

### Hawksbill turtles survive



The Queensland floods of last November and December saw 65 turtles washed up on the New South Wales north coast suffering from starvation, after flooding depleted their regular food sources such as seagrass beds. Volunteers have worked almost around the clock caring for the turtles. Recently, the last three were released back

into the wild. Polly, Edna and Rusty were returned to the sea at "The Pass" in Byron Bay. A carer said, "They've survived the worst effects of the flooding when many other turtles haven't, so they may in fact have better odds now that there's less competition for their food source." He said the future would be even more promising if a NSW Opposition call for Hawksbill turtles to be listed as endangered was successful. "If it's not a threatened species there's no funding to support the work to try and save it, so it does have a practical impact..." He also backed calls from the Opposition for a moratorium to be lifted on the state's marine park zones. "We need protected areas," he said. "We know the habitat in the Cape Byron Marine Park is in far better shape than stuff 10 miles down the coast that's not protected



## SA News

### Sea Wolves Hook into "Marine Life"

Sea Wolves Dive Club have discovered Marine Life and wanted to share some information about their club with readers. Kevin ("Dr Hook") Newton writes, "We are often described as a "can-do" club of a bunch of (mostly) guys who regularly set ourselves a project and get down and make it happen." Some of their achievements include,

- In 2002, scuttling a derelict 32-metre steel Japanese fishing vessel that was donated to the Seawolves. She was sunk off Witton Bluff as part of the Noarlunga Artificial Reef project.
- "We leased an abandoned clubroom from Council and renovated it ourselves, including building "The Anchor Bar" (decorated with a number of Admiralty Anchors and other paraphernalia); Soon we commence adding a huge new Verandah/paved BBQ area"
- "We discovered and raised a large historic pre-1840 Admiralty Anchor (photo attached) and got custody of it from Marine Heritage, to restore (at our expense). After 5 years, its coming out of the electrolyte bath very soon and will be erected (with new Stock) outside our clubrooms."
- Have their own Compressor/trailer, a huge Club Marquee (for trips), BBQ trailer.
- They meetings every Tuesday Night at Bayford Rise, Morphett Vale (meetings start around 8:30pm).

*After completing their clubrooms project, they are looking for a new Project: possibly another artificial reef/wreck. Check them out on*

[http://www.seawolves.org.au/scuba\\_diving/News/](http://www.seawolves.org.au/scuba_diving/News/)

## New book on temperate marine life

### "Sea Creatures and Sea Shores"



#### SEA CREATURES AND SEA SHORES



An underwater guide to the  
Gulfs of South Australia

Described as "written with a philosophy of 'understand, respect, enjoy'" *Sea Creatures and Sea Shores* is an underwater guide to the Gulfs of South Australia – but the information in it is relevant to much of southern Australia. The book was self-published by local divers from Flinders University Underwater Club, who have a passion for the environment and underwater photography.

*Sea Creatures and Sea Shores* explains the ecology of different environments (reefs and wrecks, jetties, rocky shorelines and seagrass meadows), before introducing 100 commonly seen

marine creatures. Information is provided on their evolution, physiology and reproduction, along with some stunning photographs of each one. Beautifully presented, the book is proving popular with divers and non-divers alike.

Special price, including postage in Australia: \$29.95

Published by Peter Day (co-author)

**An extract from the section on the ecology of seagrass meadows is presented in this issue of *Marine Life*. For more information, or to order a copy, visit [www.seacreatures.net.au](http://www.seacreatures.net.au)**

## Cuttlefish numbers at Whyalla low

In last edition we highlighted a critical problem with the Whyalla cuttlefish aggregation. Locals were waiting with bated breath to see if the cuttles would return in numbers this year. Recently a diver noted that, "In my four hours on Black Point reef I saw 15-20 animals in total. This is the first year I have swum there when the divers and snorkellers have vastly outnumbered the animals. Scientists conducting surveys at other sites where the animals typically aggregate (most importantly Stony Point) have returned counts of zero or close to it.". Lower numbers may have be due to predation from dolphins or a much more complex combination of impacts. These may include industrial pollution, historical fishing pressure, climate change, and water chemistry. The Greens have asked for urgent research by marine scientists and a moratorium on all industrial development at Point Lowly until the cause of the decline is discovered. The recent announcement of an expanded no-cuttle fishing zone around the site may be too little too late.



VIC News

## Mornington Pier Rebuild

Mornington Pier was first built in the 1850's, for steamships carrying holiday makers and vessels carrying produce, before rail arrived in the early 1890's. This area is now a popular angling and dive spot, but it is has also been a busy fishing fleet wharf. The pylons are home to sponges and other invertebrate encrustations as well as a good variety of smaller fish such as schools of old wife, puffer fish, squid and gurnards. This area is close to the city and is popular with underwater photographers, especially on days when the ocean sites are blown out. Mornington Pier attracts about 2 million visitors every year.



Parks Victoria completed the replacement of the middle section of the pier, the first stage of a longer term plan to completely rebuild Mornington Pier. The new middle section has been built to withstand storms. However, in November 2011, access to the outer section of Mornington Pier had to be closed due to safety concerns. It then collapsed cutting the wharf in two. A recently announced \$23 million project will see the full reconstruction of the 75 metre outer section of pier and the installation of new wave screens. Once completed, the outer section of pier to be reopened.



### Northern Pacific seastars make it to 'The Prom'

Divers have removed 129 Northern Pacific seastars from the Tidal River estuary. Extensive searches in nearby estuaries, beaches, inlets, and in offshore areas have found no sign of the spread of Northern Pacific seastars. The precautionary limitations on swimming and fishing have been lifted, however the use of all water vessels including kayaks and canoes in Tidal River remains strictly prohibited until further notice. Northern Pacific seastar females can produce from 10-25 million eggs per year and spread to new areas through the water movements along the coast. It is a voracious predator feeding on a wide range of native animals. They directly compete with many fish, including snapper, which use native shellfish as a source of food.



## TASSIE News (that 'other' island)

### TARFish Report on Artificial Reefs

If you are looking for a good summary of artificial reefs and how they have been developed around the world, I would recommend this report commissioned by a recreational fishing lobby group. It gives a 'warts and all' account of the pros and cons and is a worthwhile read before you decide to spend public funds on an 'easy fix' idea for all your overfishing problems. These reefs have their place, but you also need to be aware of the limitations and shortfalls in our knowledge base. See [www.tarfish.org](http://www.tarfish.org), or if you have trouble contact us and we'll send a copy

### Wreck removal at Sandy Bay



The Hobart City Council mistakenly removed parts of a shipwreck from Long Beach in Sandy Bay. The bow section was

removed as hazardous debris during sand grooming works. The small wreck was uncovered by storms and had been exposed before in 2006. Its identity is a mystery and it has both old and new features. It may be an older vessel abandoned in more recent years. Maritime Museum of Tasmania president Colin Denny said, "It is a sad mistake." Mr Heath said the council understood the wreck was of interest to the maritime community and apologised for the removal. The removed parts are now in storage at Sandy Bay and will be further assessed.

# Critter Files

## Bastard Trumpeter

- by Mike Jacques



Photo Jon Bryan

The Bastard Trumpeter grows to about 65 cm in length. The species occurs in cool coastal waters from the central coast of New South Wales, to eastern South Australia, including Tasmania and New Zealand. It is most often observed swimming over sand near rocky reefs as a juvenile, but has been seen as deep as 60 m. Bastard Trumpeter

are most commonly caught in gillnets, and will only occasionally be caught on rod and line.

Prior to the Second World War the river was very clear and often full of big Trumpeter schools. Local fisherman, Bern Cuthbertson, recalls how much life there was in the river,

*"In the 1930s kids would lie on their bellies around the docks and watch the John Dory, Trumpeter, couta and mackerel swimming around beneath them".*

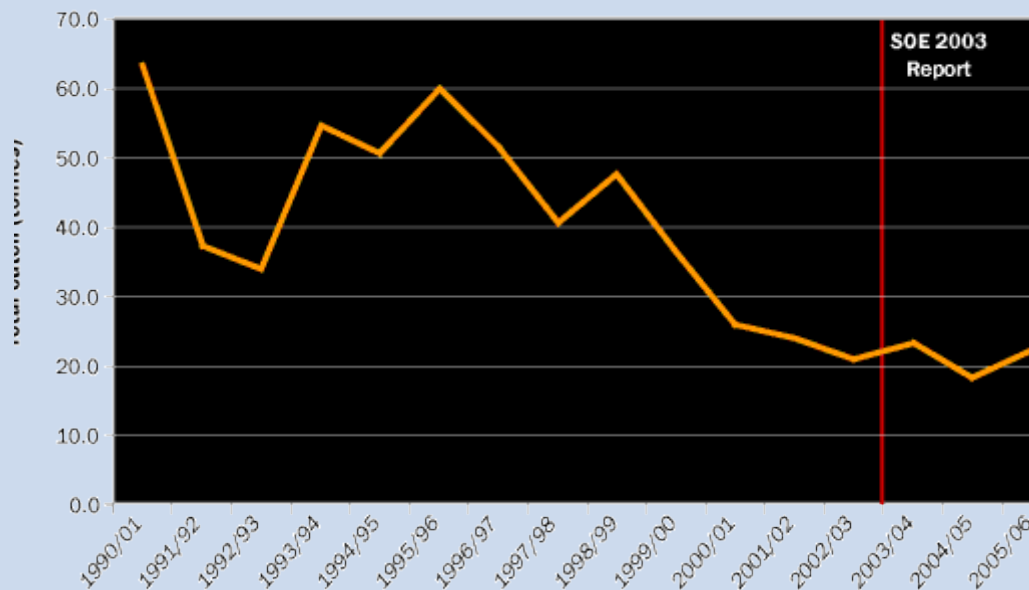
The schools could be easily seen on a sunny day and locals would illegally spear the fish using long spear poles. Then as the river became more polluted the water clouded over and the fish largely disappeared. Outside of the Derwent, Bastard Trumpeter could still be caught in huge schools. So many, that they were often used as cray bait by local fishermen. People still enjoyed eating Trumpeter, although they weren't considered to be the tastiest of scalefish unless caught fresh. Old fishing boats built before refrigeration had established the custom of bringing Trumpeter back to the wharf alive in wet wells. They were even exported in great numbers to Melbourne. According to Cuthbertson, in the 1930s,

*"A novelty was to select fish, Turk would dip it out, knock it on the head and clean it and the customer would then take the fish home...this could not occur nowadays as the river is too polluted.*

This ritual was still being performed in the late 1960s. One of my earliest memories of the wharf is going down to buy live trumpeter. I recall it well, because to a five year old, a fish being bludgeoned with a marlin spike seemed particularly brutal. Then chemical pollutants started to kill the fish in the wells.

When I started diving in 1982, giant kelp was everywhere and so too were great schools of Bastard Trumpeter, they could be seen on nearly every dive. Then both the kelp and the fish disappeared. Bastard trumpeter catches have been declining steadily since the mid-1990s and inshore populations are at low levels.

Bastard trumpeter don't seem to have bred successfully in recent years. This isn't necessarily abnormal. There appears to have been other poor recruitments periods in 1906 and 1917. A newspaper report in 1941 says that no trumpeter had been caught off the SW coast for 3 years, and everyone blamed the seals. However, the latest trumpeter decline seems to be unnaturally long-running, and also coincides with the loss of 95% of the giant kelp on the East Coast. It appears to be a combination of both over-fishing and larger environmental factors.



It wasn't until the late 1980s that we realised that Trumpeter only come inshore as juveniles. The Tasmanian inshore catches of bastard trumpeter are almost exclusively based on immature fish that haven't

had an opportunity to breed yet. Larger adults move offshore into deeper water where they virtually disappear. We know very little about adult trumpeter other than they are believed to spawn in late winter. Always thought of as an ocean-roaming fish, everyone was surprised when Bastard Trumpeter stock levels improved inside newly declared marine parks, even though they fell elsewhere. For a lot of their sub-adult life Bastard Trumpeter don't move about over long distances in huge schools, but to a degree, seem to hang around a favourite reef. They range actively across the home reef in schools. If one net is set anywhere in a reef there is a high chance a trumpeter will get caught at some stage during the day. Once one is caught, the school hangs around and eventually lots get caught. So relatively little fishing effort puts a huge dent in stocks.

Closed areas have been suggested as about the only way to really effectively manage the stock, but Tasmanian regulators appear to have a psychological aversion to this.

The Bastard trumpeter catch is all net related, the species doesn't take a hook readily. The species is extremely vulnerable to netting. The advent of the live morwong fishery greatly increased commercial netting effort within the core range of the species. Currently about 21 tonnes are still caught commercially. A tiny catch that has an economic value of only \$90,000.00. However, its recreational fishing that takes the lion's share of the remaining Bastard Trumpeter, estimated at 43 t in 2000-01. "Given that there are no catch limits placed on recreational fishing efforts, there are no management measures in place to constrain the total number of fish taken from targeted fisheries"[SOER Report, Dept of Justice]. The numbers of fish have fallen again since that recent assessment.



# FEATURE - WA

## Ammo Jetty

- by Mick Lee



Ammo Jetty in Cockburn Sound, Perth Western Australia is magic. I am a bit biased, I just love this site. But what is it about a dive site that is renowned for rubbish visibility, full of silty murk and rubbish discarded from fisherman, that makes me and others come back time and time again?

It's the diversity available, the fact you can easily and safely get 90 minutes of bottom time, easy entry and exit or all the above. For me it has to be all the above. It is just so cool how on any given dive Ammo Jetty gives you something new to find – sometimes you just need to look a bit closer. From colourful nudibranchs, cute baby cuttlefish, the odd eel, juvenile lionfish, leatherjackets, box fish, cardinal fish with mouthfuls of eggs (not always) and more occy's than you can point a lens at. Ammo Jetty is heaven in a murky muck sense. This is a macro photographer's, well ... wet dream

Ammo Jetty is the perfect family dive location. Great carpark with close access to all amenities. Bring



the kids down and they can play on the grassed picnic area and when your dive is finished how about a BBQ. Toilets are available, and they are clean.

Once underwater I don't really stick to a "game plan" or navigation plan its pretty easy swim out reach the end have an explore and head back. There is plenty of time to explore the pylons and rubble underneath.



Points of interest throughout the dive include:

### *The Shopping Trolley*

On the Southern side of the jetty someone has kindly donated a shopping trolley to nature. I always stop off here for a peak. On the outside a few nudibranchs can be seen and poking your head in will see some Cardinal Fish, Octopus and at the time of writing a real cute little juvenile Old Wife.

### *Diagonal Beam*

From the shopping trolley, head back in under the jetty and you come across a diagonal beam. Here in the midst of the wood and rubble usually hide the odd octopus at ground level and as you head up the beam, nudis and juvenile fish can be seen.



### **Overhead Beams**

Further down towards the "T" at the end of the jetty is a massive under hang beam running full width. This is where I spend a fair amount of time scanning and poking about. Seahorses are best seen here hanging onto the soft corals and trying their best *not* to get their photo taken.



### **The "T"**

At the end of the jetty is a large beam on the ground and heaps of over hangs and poke abouts. The end is a great spot to just sit back scour and observe. I find that at Ammo if you focus too hard on looking then you won't see a thing, but just scan the area and critters appear.

### **The Bottom**

When all else fails just glide along the bottom, careful not to stir it up too much, and have snoop. Everything can be found here hiding in the silt or heading from one pylon to the next. Keep your eyes open and you will be amazed.

So how do you get to Ammo Jetty. Well once you get to Perth use Google Maps search for Nyyerbup Circle, Cockburn. Or use this [View Larger Map](#)

Best time to dive the Ammo Jetty is all year round, although I do tend to stick clear when the onshores winds have been up for a day or so. It's murky most of the time but swimming into a pylon is not fun.

All up Ammo Jetty is a gem of a dive, for those that dive it on a regular basis know this and once you have dived it too I'm sure you will like it as well, especially if you are a macro photographer.

So after talking up Ammo Jetty it is with a heavy heart that I say I am upset and angry and the senseless killing of beautiful creatures that live there. Over the past months we have seen sharks, rays and even blow fish killed, maimed and tossed aside in the name of fun and sport. They are not being taken for food but killed and tossed aside. It is the minority of fishermen/women doing this and not the majority who follow the rules and laws. But a rogue element within who do this for kicks. Whilst some of the acts may not be "illegal" they are disturbing and cruel and this must change.

Click LIKE on the Facebook page, join the voice and save our wonderful marine creatures. [\[Facebook page HERE\]](#)



# FEATURE - SA

## Ecology of Seagrasses

- by Peter Day

*Peter Day is an environmental consultant who is a co-author of the book "Sea Creatures and Sea Shores". When he isn't earning a living from the wise use of resources, he is a keen diver and photographer.*

Seagrasses are flowering plants, but they are not true grasses - they are not members of the grass family (Gramineae). They are called grasses because of their grass-like habit - their leaves are similar to



blades of grass and they have an underground root (a rhizome) that stores energy and is involved in nutrient uptake and gaseous exchange.

The distribution of the seagrasses is controlled by depth (light availability), substrate (e.g. a

sandy bottom), wave exposure, nutrient supply, temperature, salinity and (for some) the degree of tidal movement. Shallow, sheltered areas, with sandy and muddy floors, offer ideal growing conditions. Sea grass meadows typically extend to 15-20 metres depth, but may occur down to 40 metres.

There are very high levels of production and nutrient cycling in seagrass meadows but the plants themselves are not a valuable food resource for most fishes. Seagrasses are more valuable for:

- the growing platform and, for some, the food they provide to algae and a wide range of creatures (which in turn serve as food for other animals),
- the shelter they provide for a rich web of species, including the juvenile stage of many fishes,
- the service they provide in stabilizing sediments, and
- their food value when decomposing.

### Seagrasses

Commonly seen seagrasses are; tapeweed (*Posidonia*), wireweed (*Amphibolus*), garweed (*Zostera*), paddleweed (*Halophila*) and *Heterozostera*.

Tapeweed is the species most likely to form extensive meadows. It and wireweed are the longest lived and the ones most able to form a sheltering canopy. Although slow to recolonize, *Posidonia* traps sediments and organic detritus and, over several thousand years, builds up a fibre mat that may be several metres thick. Fibrous sheaths from their leaves can be rolled together by water motion and get washed onto beaches as '*posidonia* balls' while their leaves form dense beds, termed 'wrack', on some beaches.

An extensive array of organisms, referred to as epiphytes, live attached to the leaves of seagrasses. They include algae, fungi and invertebrates, such as sponges, bryozoans, hydroids, worms and ascidians. Other invertebrates, such as crustaceans, molluscs and worms, live amongst the rhizomes.

The volume and variety of invertebrates in seagrass meadows provide rich pickings for fish and other organisms. Detritus (decaying organic material) washed from seagrass meadows also feeds invertebrates and microbes in adjacent reefs and mudflats. Although not significant in



terms of grazing pressure, some creatures (including garfish, sea urchins and molluscs) consume seagrass directly. Others (e.g. some leatherjackets) 'eat' seagrass, but excrete it intact – minus the epiphytes that are their real food target.

The canopy of seagrass meadows also provides excellent protective cover for many species, including the juvenile stage of fish that may later migrate to deeper waters. Some species rely on seagrass as a spawning area. King George whiting, garfish, southern calamari, razor fish and blue swimmer crabs are often found in association with seagrass. Seahorses and pipefish are also commonly found amongst seagrass, with Leafy Sea Dragons found on the margins of seagrass beds and reefs.

Being flowering plants, their ancestors evolved on land and they can reproduce sexually; but they can also reproduce asexually by the cloning of rhizome segments. *Amphibolus* has separate male and female plants, but the other species have both sexes on the same plant.

### **Snorkeling and dive sites**

Seagrass beds can be found off many beaches. Divers can explore seagrass meadows in their own right or enjoy them as an adjunct to a dive on an adjacent site. One thing is for sure – if you take time and look carefully – a dive over seagrass will reveal creatures that are not seen when diving reefs, wrecks or jetties; and it will give some insight to an amazingly complex and incredibly important marine environment.



## FEATURE – WA

### The Frenzy Continues

- by Mick Lee

Another shark attack off the Western Australian coast has started up the shark cull debate once again, and this time it is gaining support.

So far within the past 10 months Western Australia has dealt with 5 shark related fatalities; all of which pointed at the Great White Shark. Immediately beaches were closed and planes and boats dispatched in search of the culprit; the initial orders were for catch and tag but this was later changed (depending on what media outlet you listened to), and catch and kill orders were given.



On first hearing this most were horrified at the attack, with various viewpoints from members of the community being, "well we are in their domain so it is bound happen". But the increase in attacks and sightings

over the past year is making West Australians very cautious. This is affecting our way of life. We have some of the best beaches, world class surfing and diving locations and the only previous threat would have been 'will my car get broken into?'. We love the ocean in Perth - it is our natural birth right to enjoy the ocean environment - and now it is revolting against us.

Something has changed over the past few years with more and more sightings of Great White Sharks than before. But the fundamental question that researchers, experts and the media cannot answer is what the change *is*. Of course it needs to be remembered that we have more planes, helicopters and even shark big brother now, so yes the potential to make these sightings has also increased.

Sure there are theories and even the odd conspiracy one at that but the fact is no one truly knows. For me I have noticed that over the past couple of years the Leeuwin Current has been coming closer to the mainland. This warm water current brings down rich nutrients from the tropical north and with it more marine life. The whales have been coming closer and enjoying the safety of the waters to feed on the new abundance of fish and krill and frolic for high paying tourists. The seal colonies are going through a mini population explosion that this brings and of course they are number one on the menu for sharks.

Could this be the reason for the increase in shark activity? Once again we just do not know, and until then, a definitive solution cannot be provided. The current call from the State Government is to remove the Great White Shark off the protected species list. The theory being there is obviously enough of them now so they do not need protection. In my view this is a flawed reasoning and why the Great White Shark does need continued protection. By not having enough information on Great White Shark behavior, taking them off the protected species list will not increase our knowledge of them. What it will do is give some of those in the angling community a chance to land the big one for nothing else but glory and a set of jaws to hang in the pool room. It will once again just

prove to the natural world that we are not prepared to co-exist and find safer solutions to live and play in the marine world.

So how can we co-exist? The research is needed; the State Government has already dedicated a significant investment into research and tagging of sharks. This research will help build a picture of what has changed to bring more sharks than before to West Australian waters. If the problem is man-made then that can be removed. The whole picture needs to be looked at and analysed before any kneejerk reaction such as removal from the protected species list.

There are a few options on hand that can be considered, some good some bad. Introducing shark nets is one example. Sure these will keep sharks away but what about the dolphins, turtles and other marine life getting caught in the netting? Then there is the use of electromagnetic pulsing or air bubble clouds. These may seem a less intrusive way of keeping sharks away, just like the Shark Shields that divers and surfers use they can be set up along the coast and provide a 'force field' protecting us. Of course we're still unsure if they harm other marine life. The last thing we want is a pulse setting something off in dolphins and they start attacking too (I may have watched too many episodes of The Simpsons I think). The State Opposition made a case for more beach pools just like in Sydney and Melbourne. What a great idea of a way to get people still swimming in the ocean water but with a great big concrete wall around it (mmmm more dive sites). These are a consideration also; all of these and more need to be factored into decisions prior to considering removal of sharks from the protected species list – that is the last resort.

Along these lines also is education, using what we do know about sharks and their habits and plan your surfing, diving and swimming about that. Cloudy days with little swell and wind and you may as well cue in the Jaws theme. This is where the media needs to step up to the plate. Up to now the media reporting here in West Australia on shark sightings and attacks has been disgraceful to say the least. I have never before even imagined there could be so many adjectives and verbs used

to describe sharks. People of Western Australia already are fearful and this is not helped by overzealous reporting describing an attack on a human in its full blood churning detail of how the man-eating beast stalked its human prey for hours before waiting until the opportune time to launch its callous and frenzied attack. Sure the media has a role and like other subjects it needs to be balanced. The tagging of sharks allows for beacons to be set off when they come into range, sure let us know – when they are close enough.

For now the state of balance is quite thin on sharks and the emotions are still high following this last attack. The research needs to be conducted; industry groups need to be involved from fishing, diving, surfing swimming and even tourism with detailed recommendations acted upon. The sharks will always be there and so will those of us who enjoy, love and respect the marine environment. Through this we need to find a solution that enables coexistence between two animals at the apex of the food chain.



# HERITAGE FEATURE – TAS

## A MELANCHOLY SHIPWRECK

### - *The wreck of the "George the Third"*

by Mike Jacques

In 1835, Captain W. H. Moxey of the convict transport "George the Third" made for the opening of D'Entrecasteaux's Channel. His chart showed no obstructions on the western side of the Actaeon Islands. He was eager to shorten the journey as he had lost many convicts to scurvy and a further 30 were on death's door. He headed up the channel at night, navigating by bright moonlight.

Moxey was still wary and posted a lookout. He also ordered a seaman to take regular soundings. After they had passed the breakers of the Actaeons and Blind Reef, he took the officers and passengers into the cabin, and satisfied them that we were now out of danger. Shortly afterwards the seaman at the sounding lead yelled out, "hard to port". The Captain cried "my God -what is this" as the ship grounded and bumped lightly on a hidden reef. Then the rudder post struck, throwing the first officer from the wheel.



As they launched the ship's boats, strangely the swell began to rise suddenly. In a few minutes the swell was breaking violently over the reef. The passengers were thrown off their feet by the pounding of the hull on the rocks. After about the fifth shock, the mainmast snapped and dragged the rigging over the

starboard side. The wooden upperworks splintered under the impact of the falling rigging.

The ship groaned and started to fall apart. Boats were launched with great difficulty and several passengers were spilled into the sea. There wasn't enough room in the boats for all the crew and soldiers, let alone the convicts. They were still below decks. Down in the hold, the water was up to the convict's knees. The ship's surgeon noted, "...the prisoners were screaming in almost violent and agitated manner-"Oh, let us out!-let us out, in the name of God let us out "' The poor fellows put their hands through the grating and seized me by the hands-"you promised to stand by us, Doctor, you promised to stand by us,"".



The barricade around the main hatchway had been broken down and three or four of the convicts were putting their heads through. Soldiers formed a guard around the main hatch to prevent them from rushing the boats. After some threats they

fired into the convicts with their muskets. Two convicts were killed. "Three or four minutes after the shot was fired, the convicts were perfectly quiet, and only cried for mercy". Some of the convicts made it to the deck as the ship disintegrated, the others were entombed.

The man who seems to have ordered the volley was in a state of panic. Major Ryan seized the surgeon by the hand, "what can we do now, Doctor?" the surgeon replied solemnly, "in a few minutes, we shall be in eternity!"

The longboat did manage to escape the wreck and its tangle of ensnaring rigging, but it was overloaded with forty men. They made for land and after a few failed landing attempts they saw a sheltered bay. The surviving convict were put ashore, along with a guard. The boats

then returned to the wreck as dawn broke. They rescued the women, children, and surviving invalids.

The male passengers and soldiers had now regained their composure and were orderly. Many were quiet and resigned to their fate. They did not attempt to rush the boats, but bravely waved off the lucky survivors as they rowed away to safety. Fortunately, a local schooner had been alerted to the wreck and soon came alongside to save the remaining passengers.

About half the ship's complement were lost, one hundred and twenty-eight prisoners, three children, one woman, and two of the crew. The next morning there was the gruesome sight of the drowned body of one of the convicts, still chained to part of the ship's timbers.

An "experienced" free-diver claiming to hail from Bermuda, and three Tasmanian Aboriginal men, were brought down to salvage the wreck, but little was saved. The swell quickly pummeled the wreck into tiny fragments.

The shipwreck enquiry criticised the convict's poor rations. Scurvy had been rife due to efforts to save money on provisions and up to 60 convicts were bedridden at the time of impact. However, they did not criticise the decision that caused most of the deaths, to keep the convicts below by force. The reason given was, *"...had the whole body of men been upon her upper works, she must have been on her beam ends entirely; one or two such seas as were then breaking over her, would have swept every soul into eternity"*. The witnesses didn't mince their words as much, they didn't want a rush on the limited number of lifeboats. It was pure fear.

The free passengers tried to soft-pedal the shootings, later saying they weren't sure if any shots had been fired into the convicts. Surviving convicts Robert Hart and James Elliott confirmed that, *"a shot was fired down the main hatchway, which killed Robert Luker. I saw him shot and*

*fall back, I was on deck when the man was killed he fell in the main hatchway."* John Shaw was about two foot from another man who fell dead, and named the victim as William Yates. He also saw two dead bodies lying on the deck, a fact also confirmed by another convict.

The wreck attracted a lot of attention in its day and dramatic accounts were published. Inaccurate, romanticised sketches were done, highlighting the trials of the few free passengers killed. The convicts didn't rate much of a mention in polite society, and Tasmania's large ex-convict population understood the hidden double-standard. Anti-transportation sentiment was already growing among many in the colony, and the loss of the *George III* contributed to a desire to convert the colony into a new society. Tasmania was then a huge open-air prison, with an underclass of second-rate citizens freed by servitude. All that was set to change.



Today a few fragments lie scattered around the reef. Nearby lies a memorial to the victims that was erected on remote Southport Bluff. Southport Bluff is coincidentally the only known locality for the endangered Tasmanian

endemic heath species, *Epacris stuartii*. This species is extremely vulnerable to root rot fungus *Phytophthora cinnamomi*, which is absent from the bluff. Therefore, the reserve remains closed to public access. Even in its heyday the lonely memorial was rarely visited and so it remains today.

For more information on George III reef see our Jan/Feb 2012 issue.

# WHAT'S ON in August-September 2012?

## National Events

**Biodiversity Month**, 1<sup>st</sup> – 30<sup>th</sup> September - Biodiversity Month is held in September each year. The Department of the Environment and Heritage provides support throughout the year with a variety of resources for local groups promoting biodiversity.

## Threatened Species Day

National Threatened Species Day is held on 7 September each year to encourage the community to help conserve Australia's unique native fauna and flora. We can all take action to prevent further extinctions by restoring healthy numbers of endangered species and ecological communities in the wild. Website: [www.environment.gov.au/biodiversity/threatened/ts-day/](http://www.environment.gov.au/biodiversity/threatened/ts-day/)

**National Science Week**, 11<sup>th</sup> – 19<sup>th</sup> August - An annual celebration of science in Australia – go to an event, visit your local museum, take part in the online national project, organise your own event or get your school involved in an activity.

## Centenary of Antarctica

<http://centenary.antarctica.gov.au/events>

**58<sup>th</sup> Scientific Meeting of the Australian Mammal Society**, 23<sup>rd</sup> – 27<sup>th</sup> September, Port Augusta - Marine Mammal Symposium, Reintroduction Biology Symposium, Upper Spencer Gulf marine tour. [Further information and registration.](#)

## Local (Tassie) happenings

### SCUBA diving clubs online calendars

**TUDC** – [www.tudc.org.au/diving/dive\\_calendar.php](http://www.tudc.org.au/diving/dive_calendar.php)

**TSDC** – [www.tsdc.org.au](http://www.tsdc.org.au)

Contact us for TSAC, Ocean Plus and Leven upcoming events.

### Seafarers Festival

21<sup>st</sup> October, Bellerive

## Nation-wide stuff

### Victoria

**Field Nats Marine Research Group**, Various walks and activities, [www.fncv.org.au](http://www.fncv.org.au)

### New South Wales

**Deep Oceans exhibition**, 14<sup>th</sup> October, 09:00 – 17:00, Australian Museum NSW

**Fish in Australian Art**, 5<sup>th</sup> April to 1<sup>st</sup> October, 09.30 - 17.00, Australian National Maritime Museum, 2 Murray Street Darling Harbour, Adult: \$7 Children: \$3.50 <http://www.anmm.gov.au/fish>

**Remembering Titanic – 100 years**, 29<sup>th</sup> March to 11<sup>th</sup> November, 09.30 - 17.00 - The exhibition draws on replica objects, ship models, newspapers and graphics which concentrate on the human stories behind the disaster On display will also be nine costumes and selected props from the Academy Award-winning film Titanic including outfits worn by Kate Winslet, Leonardo Di Caprio and Billy Zane. Entry is included with general admission.

**SIMS Harbour Hike and Marine Festival**, 2<sup>nd</sup> September – 07:00 – 16:00, Bradfield Plaza to Chowder Bay - A new community walking event for Sydney in support of the Sydney Institute of Marine Science (SIMS).

**Creatures of the Coast**, 8<sup>th</sup> December, 10:00 – 12:00, Clifton Gardens, Chowder Bay - A walk and talk along the shore, finishing with a shore side snorkel.



## Queensland

**[Burnett Heads Lighthouse Festival](#)**, 27<sup>th</sup> October, Fun activities for all ages, live entertainment, a great display of boating, fishing, camping and leisure gear.

**Coast to Coast 2012 - Living on the Edge**, 17<sup>th</sup> – 21<sup>st</sup> September, Brisbane Convention Centre - A forum for Australian coastal workers from universities, consulting companies, community organisations and all levels of local, state and federal government. A great follow on from the 2010 conference in Adelaide, the NRM Workshop and the intervening State Coastal Conferences.

## Western Australia

**[WAMSI Kimberley Marine Science Seminar Series](#)**, 21<sup>st</sup> September & 9<sup>th</sup> November, 14:30 to 16:30, Western Australian Conservation Science Centre, Dick Perry Avenue, Kensington - A series of 3 seminars focusing on the marine science in the Kimberley

**[Climate and Environment over the last 100,000 years in the monsoon region of North-western Australia](#)**, 22<sup>nd</sup> June, 15:00, Western Australian Conservation Science Centre, Dick Perry Avenue, Kensington - presented by Associate Professor Karl-Heinz Wyrwoll from UWA School of Earth and Environment.

**Indian Ocean Festival**, 12<sup>th</sup> – 13<sup>th</sup> November, Jurien Bay - Local ministers individually bless the rock lobster fleet. Entertainment and market stalls provide a festival atmosphere.

[www.visitpinnaclescountry.com.au](http://www.visitpinnaclescountry.com.au)

**HMAS Sydney II 71<sup>st</sup> Anniversary Memorial Service**, 19<sup>th</sup> November, Geraldton, held at the HMAS Sydney II Memorial.  
[www.geraldtontourist.com.au](http://www.geraldtontourist.com.au)

## Northern Territory

**Darwin Boat & Leisure Show**, 1st & 2nd September

## South Australia

**[Fossils of Ediacara Biota - What Did the First Marine Animals Eat?](#)**, 11<sup>th</sup> September, 18:00, SA Museum, Pacific Cultures Gallery – FREE! Bookings essential on 08 8207 7090



## We're on Facebook!

Check out our "Marine Life Magazine" page on Facebook to interact directly with us famous people, and to hear the latest news and updates.

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## How to make a contribution

This involves sending us an article by email, preferably not too long and with a photo or two. Sorry, no money, it's all a love job and just for the glory. We'll use your contribution for the purpose for which it was given, for non-commercial uses and with attribution.

Contact Us; [marinelifetassie@gmail.com](mailto:marinelifetassie@gmail.com)

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## Back Issues

We have been gathering together a lot of information and stories since November 2009, so if you are new and interested, please log on our back issues page which has been generously hosted by the Tasmanian University Dive Club, <http://www.tudc.org.au/news/marinelifeph>