MARINE *Life*

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Young people losing touch with the outdoors?

By Tony Neilson https://naturalimages.net.au

'The average Australian child spends less time being active outdoors than a maximum security prisoner.'

That has to be the most 'arresting' opening sentence of all time.

The shock finding is at the core of new research by Queensland-based ecologists Danielle Shanahan and Richard Fuller.

'The Extinction of Experience' is a global phenomenon based on the notion that, for most humans, their experience of nature has been extinguished.

Stork swallowing a golf ball. The death of 'experience' spells yet another danger for global wildlife. Photo: ©Tony Neilson

Only over-45s understand

In southeast Queensland where Shanahan and Fuller's Research Council-funded project is focused, it is clear that understanding of nature is much higher in people over 45 than those under that age.

In a 2016 *Wildlife Australia* article, the ecologists say their work and that of others at the University of Queensland is part of a growing international study of a declining experience of nature, and what that means for people and conservation.

The implication is that people who don't experience nature for themselves are unlikely to value it.

Faster recovery

Shanahan and Fuller say evidence is mounting that an extinction of nature experience is also detrimental for people's health and wellbeing. They cite faster recovery from surgery for hospital patients with a view of trees, and reduced cardio-vascular death rate for people living near green spaces.

However, when it comes to motivating conservation, they say the importance of experiences with nature and the psychology behind it are not well understood. "But it makes intuitive sense. As Robert Pyle said back in 1978, what is the extinction of the condor [above] to a child who has never seen a wren?"

[Thanks Tony, Good brain food. I'd also observe that young people have spongy brains and they will readily learn any new exciting idea you put to them. They are also easily able to visualise things without seeing them. It is also a wake up call for the rest of us to spend more effort educating young people about the joys of nature. Their failings are also our failings- Ed]

Busselton Stinks

The beach at Busselton Jetty has been swamped by sea grass, and it stinks!.

A ***A recent storm has washed the dead leaves out of a nearby seagrass bed. It's a natural phenomenon, but don't we get excited when the smell affects property values.***

In 2014, the WA Government spent $28 million fixing a groyne that caused rotting sea grass to accumulate on the beach every year, but a big storm has made the problem worse than ever. A resident said "It was horrific. At [1:00am] you'd be getting up in the summer time and closing your windows to try and get the smell out," she said.

Sophie Teede, a marine biologist highlighted that the sea grass provides an environment for small marine animals and also helps hold the coastline together to guard against erosion. "It has a really protective element to protect the sand from eroding away from the beach itself," Ms Teede said. In other words it's normal.

What isn't normal are our convoluted attempts to control nature, "I think the way the seagrass has washed up on the beach now has definitely been influenced by the sand bags that have been put out by the City of Busselton. "There's been a big build up under the jetty, and that has forced a lot of it to where it is now."Ms Teede said the seagrass would eventually wash away by itself. The worst effect was likely to be the smell of the material as it dries in the sun.

The local council, which regularly employs front-end loaders to clear away sea grass from the town's beaches during the peak tourism season in summer, is hoping it may avoid a costly clean-up effort to remove the sea debris. Busselton Mayor Grant Henley was striking the correct tone "We'll wait and see what nature does and if it becomes a pressing issue then we'll see what steps we can take."

Interested in tips to reduce Plastics Pollution?

See facebook/plasticfreelaunceston

This active little group has been doing a lot of positive on-ground work in Launceston but has useful info you can use in your home town. Recent events include a "PLASTIC STRAW FREE" campaign. They are promoting the local businesses supporting an alternative to plastic straws. They have also been promoting film events on marine conservation themes. They also have a campaign song. Not exactly an ear worm and you may recognise the tune, particularly if you are a Jewish person, but I dare you to have a look.

They are even nicer to talk to up close. Keep it up Trish! If you aren’t lucky enough to be Tasmanian, check out your local group or start one up yourself if you need to!

Cosmopolitan Darwin

By the late 1870s the Chinese population in Australia was in decline, except perhaps in the tropics, where the stereotypes worked in favour of Asian workers. The working climate in the tropics was seen as too taxing for a white man.

By 1879 Darwin's population was overwhelmingly Chinese, with 3,406 Chinese to just 460 whites. In this situation, white supremacists had to work hard to explain themselves, because the Chinese were mingling well, were trusted and industrious. To White Australia policy theorists down south, this was dangerous,

"The Chinese labourers are treated in the Hongkong and Straits Settlements in a proper manner. They are kept in their place, both in the day and at night. Europeans do not fraternize and hob nob with them, and thus give them exaggerated ideas of their social importance."

But gold had been found inland and the government wanted to keep hardy people there who were willing to win that wealth.

In 1886, 3,000 Chinese workers were employed to build the Pine Creek Railway. The contractor was supposed to make it cheap and quick, and they expected the Chinese to be compliant and easily cowed. Within weeks the contractors were complaining about the "troublesome" Chinese, who "do not seem disposed to coming to terms". One labourer, Jimmy Ah Yu, told his children that during construction of the railway the company attempted to cut wages by 30 percent. The workers responded by getting out their tin-snips and cutting 30 percent off their shovels. The wage cuts were quickly withdrawn. The Chinese remained organised and radical. They continued with a string of strikes, pushing the project's cost to almost twice its budget, and stretching construction out for almost three years.

Darwin's authorities eventually began to fall in line with southern States policy, and deter the Chinese from staying. The Board of Health in the Territory spent the next 50 years overreacting to the threat of pestilence brought in by the Chinese. They would deny medical treatment to any Chinese person diagnosed with leprosy, and immediately deport them. The Chinese often stored ashes and bones in their homes, for return to China. The Board raided Chinese houses to remove them even during funerals. By 1888, they had plans to demolish Darwin's Chinese quarter. The Chinese residents petitioned, but their efforts were ignored and even mocked in the press. Finally, the Chinese railway labourers threatened indefinite and total strike action.

On 1 January 1911, the Labor federal government took control of the Northern Territory from South Australia. If things were bad before, now there was forceful implementation of the White Australia

policy. Just nine days after the take-over, all the Asian workers on the Darwin docks were sacked by order of the Federal minister. They were quickly joined by Asian miners, agricultural workers and fishing crews. Many had lived in Darwin for decades, some had been born there and saw themselves as Australians.

Premises in Darwin condemned by the Public Health Board. "Group of aged or decrepit Chinese repatriated to China". June 1914

They protested and in February, dozens of unemployed Chinese and Malays marched on the government residence to demand work. However, it was all nonsense and also totally impractical. No whites from down south wanted to go to the NT just to work the wharves and Chinese workers had to be rehired.

Today, Darwin remains one of the most ethnically diverse places in Australia, where generations of non-Anglo families have put down roots in defiance of the enormous and long-sustained efforts of White Australia adherents to remove them. They also seem to get along fine.

Really, what was the problem?

Wreck of the S.S. Brisbane

Source DAVID STEINBERG, DSAC, SLV

One Australian wreck site is a permanent memorial to the trials of Chinese immigrants

SS Brisbane was built in 1874 by Inglis of Scotland and commissioned by the Eastern and Australian Mail Steam Company. It was part of a fleet of ships that became pioneered the Torres Strait passage between Asia and eastern Australia. The company used a mail subsidy from Queensland, and then South Australia, to help fund its efforts in servicing trade between Australia and Asia. As an immigrant ship, the SS Brisbane brought hundreds of Chinese immigrants to Australia.

The 1879 diary of Robert Herbertson explains the lot of the Chinese passengers in steerage: "Besides ourselves as passengers there was a large number of Chinese over 500-600, of which was (sic) coolies destined to work on the wharfs of Sydney, the remainder have leave at Port Darwin destined to try their luck on the goldfields of the Northern Territory. They seem a queer lot huddled together between decks, like so many sheep, as far as I can see we seem pretty crammed full with them, there being very little available space." While there were elaborate facilities for saloon passengers. "Forward is a large range where the cooking is done by steam from the main boiler, besides two other stoves which prepare food for the crew and Chinese passengers."

On 10 October 1881, the ship was bound for Port Darwin from Hong Kong. On 9th October the ship was travelling south along the west coast of Bathurst Island. The officers sighted what they thought was Cape Fourcroy, situated on the SW point of Bathurst Island. It was later revealed that they sighted a reflection on the water. The course

was altered based on that sighting. They accidentally entered Port Patterson, north of Bynoe Harbour, and struck a reef off Quail Island. They anchored and waited for sunrise and the higher tide. At the time the Captain believed the ship had struck Bathurst Island. On the morning of 10th October the ship floated on the high tide. The Captain took bearings from Quail Island and Point Charles in an effort to

identify the ship location. He wrongly identified these visual marks and so again misjudged the ship's location. The vessel steamed north and soon struck Fish Reef, where it became permanently stranded. Fish Reef is located approximately 25 nautical miles from Darwin Harbour.

The Captain and his officers argued that the navigation error occurred because the navigation chart showed the tide flow incorrectly, and because there was a lack of navigation markers in the area. The enquiry decision supported the Captain declaring: '...we consider that the wreck was caused by the current and tide having set the vessel to the southward and westward, also through the bank of haze being mistaken for land and the ebb tide being wrongly marked on the chart as running east instead of to the west. The weather being hazy we do not consider the captain to blame for mistaking it for the land.

Saloon passengers, their luggage and the mail were taken off immediately. Salvage of the cargo continued for a number of weeks. "Fifty-four cases of opium slightly damaged and about 1000 packages of tea in good order reached here from the wreck of the steamship Brisbane. It is thought she will hold together sufficiently long to allow more cargo to be let out". On 25 October 1881 a small auction of water damaged cargo was held, with goods such as tortoise shell ornaments, silks, embroidered shawls, jewellery and lacquered goods being sold. On 23 November 1881 an auction was held. Items listed included marine goods such as blocks and tackle, the compass and sails. Other items included the ship's piano, tablecloths, maple sofas for the courthouse, rifles, blankets 'for the Aborigines' and sheets for the hospital.

The wreck is considerably broken up and a good deal of material has been removed by natural forces and salvage. She is mostly uncovered at low tide and is an interesting wreck. She is one of the few large wrecks of that era in the NT.

Commentary by Mike J

It's Garbage, are we losing focus?

With an undeniable and immediate issue with climate change are we allowing ourselves to be distracted by the easier and less stressful goal of marine plastic control?

I'm old enough to remember Tasmanian Dam protests, when to distract attention from the major issue of public interest, and to establish environmentally responsible credentials, the pro-development parties talked up litter reduction. There were litter drives galore. We called the litter environmentalists "brownies" to distinguish them from "greenies".

I've recently seen politicians of different stripes fighting over marine plastics, apparently pushing it as their issue in an effort to 'own' it and in the process spouting lots of ghee- whizz statistics;

- 8 million metric tonnes of plastic going into the oceans each year
- 16 shopping bags for each metre of global coastline (excluding Antarctica)
- 6,350 and 245,000 metric tons of plastic waste on the ocean's surface,

In February 2016, the then Liberal Environment Minister threw in $60k for urgent research into ocean plastics. That would have paid for the tea and bikkies for the first round of meetings. They would have spent $10k on preparing the media release. In fairness the Minister did follow this up with other action.

Since then, the issue has been taken up big time by left-leaning people (people like me) in a way that climate change hasn't lately. I've been to a couple of left-leaning events where there were big time tears and angry anti-capitalist conspiracy theories all about plastics. In truth, they are products we partly use for evil purposes like sterilising food and medical equipment. Everyone is now talking up plastics, despite there still being very little research to quantify accurately its exact impact on the ocean (especially in terms of food chain contamination).

Those discussions have helped me to realise that I'm a lot more comfortable with the 'science thing' than the 'emotive activist thing'. But who really cares how I feel. More important is how we act on important environmental issues.

What worries me more is that we might be averting our eyes from the hard issues like climate change. We might want to deal with something less contentious and more 'within our power', because the main game issues are all too hard and we are weary. Is the end result that climate change is indirectly made to look and smell like a lost cause?

Unlike the deliberate derailing of the Paris climate accords, there are already G20 summits on ocean litter with active participation by the main polluting countries. The researchers are saying, "This is a problem that is absolutely solvable and we're already seeing some countries make significant improvements," (unlike climate change). There is even talk of "easy wins".

The top two plastic-polluting countries are unsurprisingly China and Indonesia. Less understandable is that the next three are relatively small countries, the Philippines, Vietnam and Sri Lanka where waste management is very poor to non-existent. Australia produces less than 0.01 million tonnes of plastic waste, from a global total of 275 million tonnes of plastic waste, basically nothing in comparative terms. It should be a huge issue in Sri Lanka and a secondary issue in Australia.

However, it's nice not to be the main culprit for once and I'm not made to feel personally guilty (unlike climate change). I can also do my normal thing and drive my gas-guzzler to the supermarket because I won't be committing the sin of buying pears from a packet rather than a bin.

So is this talk about ocean litter all a distraction? Actually, I don't think so. While we don't have massive garbage gyres off the Australian coast and the southern hemisphere is relatively clean, that relatively small amount of Australian produced ocean litter is still 13,888 tonnes of litter per year. Most of the litter on our beaches is from Australian sourced material and it's at the very least unsightly.

We also have enough information to know that it is dangerous to wildlife like turtles. Plastics ARE especially a curse for our seabirds, with plastic ingestion decimating these vulnerable animals worldwide.

We don't know if the surprisingly large amount of microplastics around our coast are poisoning our food chain. Intuitively, it doesn't seem good.

The really good thing about the debate is that people get more activated to take an interest in issues that affect the ocean, because their daily chores are made noble and can be presented in a positive way. They are part of the solution when it comes to plastics.

We can offer technical assistance, technology transfers, loan funds, and participate in international regimes to help the main polluters lift their game on plastics. Heaven forbid, we can even lead the way and it doesn't matter if Donald Trump doesn't approve. Hopefully, that cooperation could be a framework for dealing with other issues too (e.g. CLIMATE CHANGE, CLIMATE CHANGE, or my favourite CLIMATE CHANGE).

Spend mental energy and research commitments on plastic pollution but we still need to keep our eye on the main game. IMHO climate change will easily trump anything plastics can do to the ocean, except maybe for seabirds who are particularly vulnerable. Controlling plastic pollution in the ocean is important, but its only one part of a bigger picture of environmental degradation.

Keep dealing with plastics, we can walk and chew gum at the same time. But next time you see a pollie talking up their plastic eco-warrior credentials, take the time to ask them about climate change. Why can't they be as keen about something that's actually tricky? When the G20 summit ends in triumph, take the time to ask, why can't we deal with climate change this constructively too?

I'm with you on plastics, but keep your eyes on the main prize too.

Fitzroy Island

I keep running in to people going to the outer reef to see the hard corals and tick the Great Barrier Reef off their bucket list. Actually, the GBR marine park is only 7% coral reef, the rest includes tidal areas covered in shorebirds, mangroves and lots of coastal islands. If you want to see "the reef" you need to do more than go searching for "Nemo" on the outer reef.

In the Cairns region, if you want to see the continental islands and cays, not all of them are accessible unless you are a local with a big boat. Some islands are connected to tourist charter services. To see sand cays and islands, you could go to Green Island if you don't mind big boats and pretty daunting crowds dominated by Chinese tourists. The Low Isles or Michaelmas Cay are similar sand cays/islands but a bit quieter. If you want to go to an inshore continental island it's a fairly pricey trip to the Frankland Islands, or for a quick day out, go to the granite hills of Fitzroy Island.

It has the advantage of being only 45 minutes away and not too daunting for the seasickness prone.

At the island you arrive at Welcome Bay jetty with all the other day trippers. The settlement consists of a 3 storey hotel, basic camping ground, basic convenience store, beach hire shack, and slightly rowdy pub. Like every tourist spot in the GBR there is also a glass bottomed boat. Sea kayaking can also be arranged. You can also hire a stand up board (although I don't understand why, seems uncomfortable). Most people lie on the beach or go snorkelling off it.

At the end of the beach there is also a turtle rehabilitation centre run by a charity that offer tours. If you ask for a scuba diving charter you will be whisked away to an offshore reef, no-one much dives around the island itself.

Everything happening on the island tends to be organised through the resort.

Just about everybody fails to get past the confines of the settlement, which is great as it leaves the rest untouched for the slightly more adventurous among us. Fitzroy Island was gazetted a national park in 1989. There are a few well-made tracks on the island that aren't too difficult. The tracks go through or past some lovely open woodlands, rainforest and mangroves. The tracks tend to end at excellent lookouts, shady forest groves, or coral beaches.

What's it like? Probably like Cairns before people got there, as Fitzroy is simply a hilly part of the coast that was isolated when the sea levels rose tens of thousands of years ago. Much of the flat coastal plain around it, which is now the Great Barrier Reef, was also flooded at about the same time.

James Cook gave the island its name in 1770. The island became a quarantine station for Chinese people heading to the Palmer River Goldfields in 1876, and later became part of an Aboriginal mission growing fruit and vegetables. All the tourist trappings are relatively recent.

The fringing reef just off the beach is affected by river runoff, and like most inshore areas, doesn't offer picture postcard visibility, 3 metres is probably the average. The reef quality also goes up and down depending on recent disturbance as these shallows are vulnerable to warming events and big flushes of freshwater after coastal flooding events.

It was enjoying a very high cover of soft and hard corals until Cyclone Yasi came through in 2011, but the cover around the island is still classed as moderate. Don't expect too much coral in standing depths where a lot of the more delicate species get broken off. It has survived the recent warming events pretty well.

A variety of reef fish, hard and soft corals and other marine animals can still be seen. The corals tend to be different from the outer reef sites. There is a pretty good chance you can show the kids a turtle and well as spotting many species of reef fish.

The dry parts of the island are quite cute with shady forests, quiet coves, brilliantly-coloured butterflies, doves, scrubfowl, ospreys and pied imperial-pigeons.

A good day or two or three for the whole family.

RV Investigator seabird surveys

Per Yellowthroat Magazine, Birdlife Tasmania

Les Feasey NZbirds on-line

Two more research voyages undertaking seabird and marine mammal observations around Tasmania have been undertaken by Eric Woehler in the last two months, bringing the total to seven since the research project commenced in late 2016. The first was a transit from Brisbane to Hobart that took a week. The highlight of the voyage was the sighting of a feeding flock of almost 20,000 Fairy Prions south of Maria Island. The second was a seabed-mapping voyage in Bass Strait for 11 days. The highlight of this voyage was the high numbers of Fluttering Shearwaters seen near Rodondo Island and Wilson's Promontory. A more detailed report of the main results of the seven voyages is in preparation. The project has secured berths for observers on two voyages later this year, including one to a number of seamounts to the southeast and east of Tasmania, and another four until early 2020.

Ancient pygmy right whale fossil identified

Source ABC News, Whalefacts.org

A fossil gives us an insight in to a little known whale species

PHOTO: *The fossilised ear bone (ABC News: James Hancock)*

An ancient bone was found in bayside Beaumaris by Museums Victoria 60 years ago, but only recently was it identified as a six-million-year-old ear bone from a pygmy right whale.

Little is known about pygmy right whales — the smallest whales in the baleen family. They have a dorsal fin but only spend a few minutes on the surface, making them hard to spot. The fossilised ear bone is about the size of an apricot and one of only 6 pygmy right whale fossils held by scientists.

While the pygmy right whale carries the same name as other whales within the "right whale" family this baleen whale is not considered part of the right whale family.

This whale can be found living in the Southern Ocean and is considered the smallest of the baleen whale species and is even smaller than some of the toothed whales.

PHOTO: *Pygmy right whales Robert Pitman)*

When observed from a distance this whale is confusingly similar to the Antarctic minke whale. It is smaller than the minke whale and has some distinctions with its jaw and flippers. They also have a bow-shaped dorsal fin which is located about 2/3 down the length of its body.

The pygmy right whale can reach lengths of up to 7 metres and weigh over 6 tonnes however most whales measure closer to 4-6metres. in length. The pygmy right whale is considered to be the smallest marine mammal in the baleen whale family.

Despite their small size these whales are part of the baleen whale family and as such they possess baleen plates and bristles that they use to separate their prey from the water. They eat krill and other small plankton. Their small lungs and heart suggest that they are not deep divers so hunting for food likely takes place at or near the surface of the water.

Pygmy right whale can be found in most parts of the Southern Ocean; usually in a pod of 2-3 whales.

Occasionally these whales may end up beached or stranded on the shore or beach line due to being sick or injured. They can be struck by ships and getting caught in drift nets which can lead to suffocation. Rare spottings of the pygmy right whale indicate that they may be a naturally rare species.

New Australasian Gannet colony on Hippolyte Rock

There has been the discovery of a newly established colony of Australasian Gannets on Hippolyte Rock, off Fortescue Bay, SE Tasmania

*By Nigel Brothers (*Extract from Bird Life Tasmania's Yellowthroat Magazine)

Brunyisland.com.au

Based on observation and photography of four advanced nestlings from a boat, it is a significant Australian ornithological event, even more so if the colony expands substantially. To me, it's also personally significant because this old codger has been impatiently awaiting such news for the better part of 40 years.

The anthropogenic history of gannets in Tasmania is both sad and outrageous. The extinction of the Cat Island (east coast of Flinders Island) colony in the 1990s was largely due to a few professional

fishermen (yes, no women) relentlessly using gannets as bait for southern rock lobster over many decades. The considerable, albeit failed efforts of the Parks and Wildlife Service to prevent the loss of that colony show how hard it is to rehabilitate a colony of long lived, slow breeding birds once unsustainable hunting diminishes breeding to be irregular. Imitation gannets made variously of plastic foam and cement by local school kids were used to attract gannets. Decoys good enough to fool local White-bellied Sea-eagles *Haliaeetus leucogaster* were used by volunteer caretakers, mainly from the RAOU (now BirdLife Australia), to try and deter the eagles from predating the few gannets there but to no avail and the colony fizzled out. What would be incidental predation by eagles on a large colony became overwhelming with a radically diminished colony. It's even possible the decoys gave some real gannets a false sense of security during eagle attacks,making them easier to catch.

One imagines a process of 'extinction momentum' builds with long-lived birds having learned from repetitive local hazards and progressively abandoning breeding. Birds' lives, after all, are a string of risk assessments. Cat Island formerly hosted Australia's largest gannet colony and the only one in a position to fully exploit the pelagic marine food resources of east coast Tasmania.

Hippolyte Rock, with suitable gannet nesting habitat of around 5ha, offers potential for 40,000 breeding pairs, a colony which would consume quantities of marine food probably comparable to what would have sustained the extinct gannet population of Cat Island. This means the Hippolyte Rock colonisation is more a rehabilitation than an expansion of the local gannet population.

There is an issue of whether current management of the 'small pelagics fishery' of key gannet prey species (jack mackerel and redbait) makes provision for the local gannet population to meet its potential (what's the bet no fisheries manager has even thought of seabirds' requirements). The issue may be more one of the proximity of commercial fishing to gannet nesting rather than simply one of overfishing of the total resource.

…Although decades ago Hippolyte Rock did present a likely future gannet breeding site away from expanding traditional nesting localities with birds starting to rest ashore, Ile des Phoques, an island 78 kms to the north (between Schouten and Maria Islands) was considered a more likely new site. Perhaps the access to the top of that island by fur seals negates its potential for breeding by gannets. The Nuggets, a small island group another 40km north off Freycinet Peninsular, offers another suitable gannet colonisation opportunity in this east coast region.

An increase in gannet nesting on Hippolyte Rock could displace most if not all the other seabird species that currently breed here (see *Tasmania's Offshore Islands:seabirds and other features* by Nigel Brothers et al 2001), the most significant being the regionally important Black-faced Shag *Phalacrocorax fuscescens* population. The tenacity of nesting gannets is likely to overwhelm even the similarly pugnacious shags. Burrow-nesting species such as Fairy Prions *Pachyptila turtur* and perhaps shearwaters are likely to have their nesting habitat totally destroyed as gannet nesting progressively expands.

Interestingly, following gannet population increase on the island of Pedra Branca off Tasmania's south coast, displacement of Shy Albatrosses *Thalassarche cauta* has apparently been a consequence. However,such presumably natural processes are of minimal conservation concern alongside other impacts such species face,although those apparently minor influences still should be identified and monitored.

I look forward to more adventures with Tasmania's offshore rocks and most impressive diving seabird.

Nigel Brothers

Seabird enthusiast and advocate.

Awesome Asteroids - Pretty Little Sea Stars

Meridiastra medius

This species scientific name reflects its distribution, occurring in the "middle" of two other similar species. It is found in Southern Australia, including western and central Victoria.

Paddle-spined Seastar Allostichaster palmula

This is the smallest known seastar in the world. It has fissiparous reproduction where the animal divides in two to create new individuals. Limited information is known about it. It can be found on bryozoans and in sediment, to depths of 12 m in central and eastern Victoria.

Meridiastra atyphoida (Clark, 1916)

This small sea star is rarely seen and little is known of its biology. It is found underneath rocks, to depth of 59 m in Southern Australia.

Cushion Star Meridiastra calcar

This small sea star is very common in Eastern and southern Australian rock pools to a depth of 10 m. It comes in an endless variety of colours and patterns.

Photo SURG, *Allostichaster polyplax*

This seastar has a width 30-50 mm. It is found in southern Australia, from South Solitary Island NSW to Houtman Abrolhos, WA; southwest Pacific (New Zealand). Depth range 0-238 m.

Penguin deaths from dog attack

Twelve little penguins found dumped in a garbage bin on the northern Tasmanian coast at the Low Head Coastal Reserve were probably killed by a dog.

Rangers from the Department of Primary Industries, Parks, Water and Environment (DPIPWE) have been conducting extra patrols in the area and contacting local dog owners. Little penguins have only reappeared in Tasmanian cities after breeding areas were fenced off. This is because even the kindest dog or cat will kill wildlife if not controlled. There are heavy fines if your animal attacks wildlife and dogs can be destroyed if they attack or kill other animals. Dogs that are out in public and not in an "off leash" area can also be seized by the Council dog ranger and the owner's fined. I know he is one of the family, but a dog will be a dog regardless of what you think or feel.

Plastics in Sydney Harbour

Per ABC

A project launched in Sydney will recruit students and volunteers to count and record some of the five trillion pieces of plastic in the oceans.

The Australian Microplastic Assessment Project (AUSMAP) will train volunteers to collect micro and macroplastics from coastlines all over Australia.

The project, designed to engage students from years 9 to 12, will use a rigorous scientific method to collect data from coastlines.

Dr Blewitt said. "We're also collecting microplastic, which is one to five millimetres in size so it's visible to the naked eye. "We collect the top two centimetres of sand in the quadrat and we sift that through different size sieves. What's left is what we collate, and we check and we count and we quantify."

"The aim is to engage citizens ... because we feel that the more people are engaged with something like this, the more they're ready to be environmental activists to minimise our plastic rubbish going into our oceans," Dr Blewitt said.

Volunteer straw snorkeler Harriet Spark said while the water could get a little nippy off Sydney over winter, the result made it worthwhile.

"A colleague and myself always used to go snorkelling here and we'd find so many straws, and people were so shocked by them so I thought imagine if we collected them, we could show people just how much of an impact it's having."

Inspired to do more, Ms Spark launched Operation Straw which encourages volunteers to snorkel out into Manly Cove and collect plastic waste.

"We collect straws every weekend and count how many we find and use this to try and make businesses change their practices around straws and other plastics," she said.

"Over summer 2017-18 we found just over 2,500 straws."

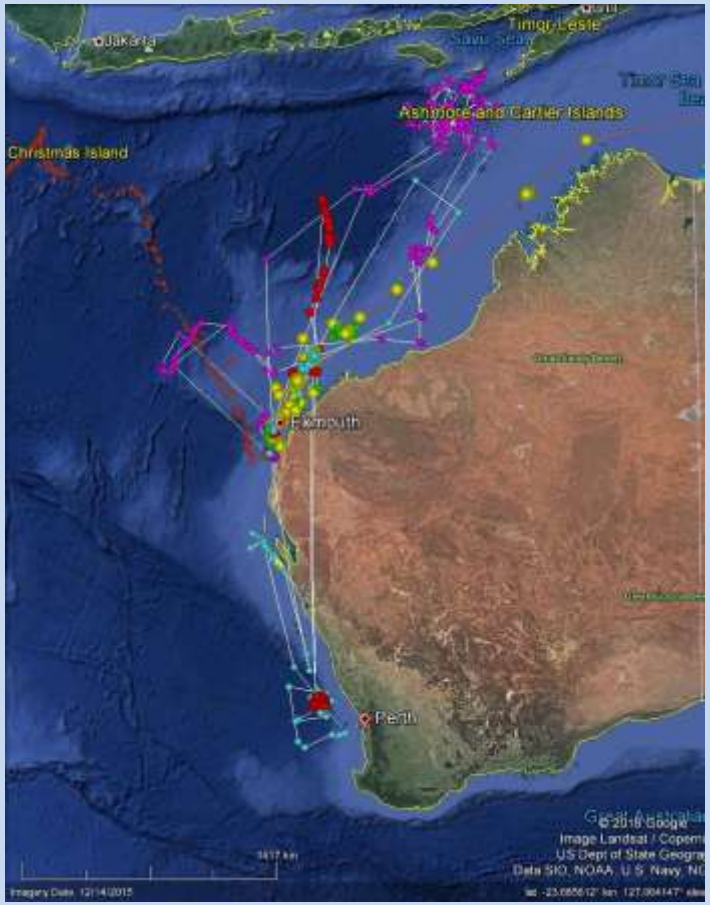
"We can all say no to a straw, but if a business says no to a straw they're cutting so many straws from ending up in landfill or bins or ultimately the ocean."

The mysterious beast of Ningaloo Reef: revealing the secrets of whale sharks

Source Natalie Kikken, CSIRO

Whale sharks are the largest fish in the sea but much of their behaviour is still unknown. A new project at Ningaloo Reef in Western Australia will be attempting to determine how old whale sharks are using DNA samples. Placing trackers on them will also help to discover where they travel and how deep they go.

We know they gravitate to Ningaloo Reef because it offers an abundance of krill in winter. Only one in six whale sharks that cruise around Ningaloo Reef are female. The whereabouts of all the other females remains a mystery.



Tags have revealed that whale sharks travel as deep as 1.8km. They also venture to Christmas Island, 1500kms from Ningaloo Reef, and even the Gulf of Carpentaria, 3500kms away. The current research is funded by BHP

Too many sharks?

World-first genetic analysis reveals Aussie white shark numbers – they aren't increasing

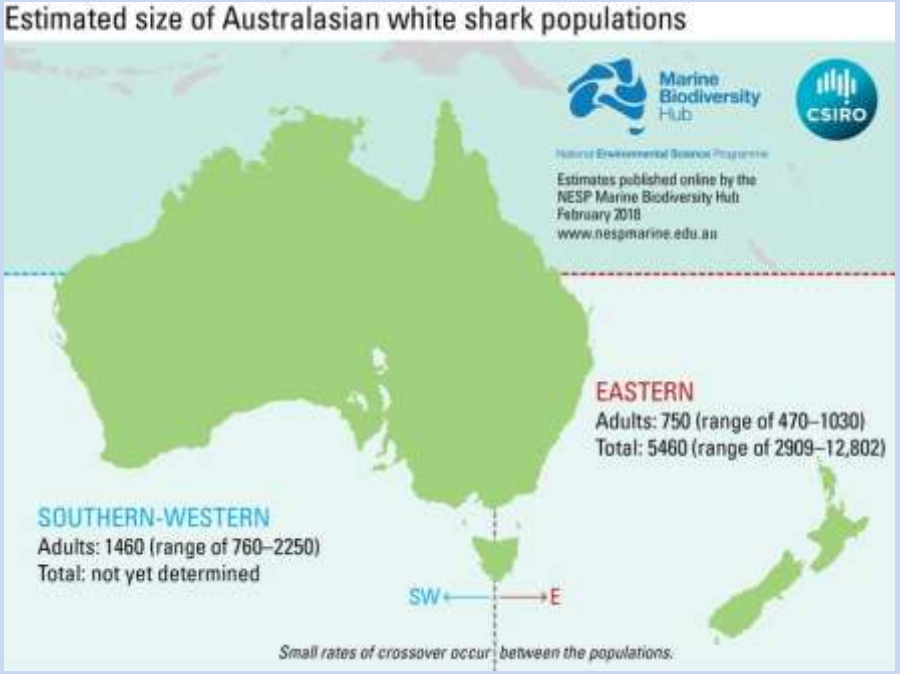
Source Rich Hillary, Russ Bradford, Toby Patterson CSIRO

CSIRO estimate that the total number of adult white sharks across the Australasian region is around 2,210. They're lacking data on juvenile sharks so it's difficult to say what the total Australasian population is, but it's likely to be in excess of 8,000-10,000 animals.

Until now, researchers have had to rely on patchy sources, like historical catch data. The various shark control programs do not provide usable data on relative density over time. We do have information on white shark migration and population structure from electronic tagging and previous genetic studies, but these don't tell us about shark numbers.

"Close-kin mark-recapture" was developed in 2000 for assessing tuna populations. It first involves taking a tissue sample from a shark, alive or dead, obtaining a genetic profile of the animal, and then comparing it to all the other sharks and asking: are these sharks related, and if so how are they related? The probability of finding half-siblings is mathematically linked to the size of the adult population, and the survival rate of adult sharks.

Currently, CSIRO believe there are two main populations of white shark in the Australasian region: the "Eastern" population, which is basically everything to the east of Bass Strait (including New Zealand), and the "Southern-Western" population, which appears to range from west of Bass Strait, around the South Australia and West Australia coasts as far north as Ningaloo Reef.



The close-kin approach can find the adult population, however. To find the survival rate of juvenile sharks 70 juvenile sharks were fitted with acoustic emitters, archived under Australia's Integrated Marine Observing System. CSIRO estimated that juvenile sharks had an annual survival rate of around 73%.

In Australia white sharks have been protected since 1999. Between 1995 and 1999 a national recovery plan was in effect. CSIRO found that in both populations the adult population trend since protection has been essentially flat, with no evidence for a substantial increase or decrease. However, the picture is more uncertain when it comes to estimating population changes for younger white sharks. This means there aren't any more adult sharks. The shark fatalities aren't happening because there are more big sharks. That doesn't mean there won't be increases in future. If protection has increased survival, as White sharks take 12-15 years to mature, an increase in adults won't become apparent for another 5-10 years.

Statistically shark attack is more common in the USA, but Australia has more fatalities. Australia has the three species of shark most likely to attack humans and they are big sharks.

My guess from this data is that the increase in WA shark deaths is related to changes in the feeding patterns of adult Great Whites, not increasing numbers.

Should you worry? Well it is an issue, but you are possibly sending your kids in to the water with poor or no swim training. The facts are that people are 20 times more likely to drown than be killed by a shark.

Photo: irishmirror.ie

Thanks Bird Counters!

The annual Winter Gull count in Tasmania was a great way to keep on top of what is happening in the ocean and how it is affecting marine life.

You can also have a close up encounter with the fascinating foreshore life along our coastal bays, and have a fitness walk too. This time we saw sea eagles and seals out in the river.

The survey helps us to see the effect of our dirty ways on animal behaviour, with gulls being very responsive to any human excesses when it comes to food. From where the birds are roosting, we can also detect trends in natural food availability too. Marine Life was out (Dave, Mike and Richard) as well as many other local volunteer counters.

This year there was a huge jump in the numbers of silver gulls and Pacific gulls, with lots of the birds found at fish farms, as we tidy up our tips and the birds adapt to new opportunities.

If you can count an area in future please let Eric know and get on the email list. Eric can provide ID guides, data sheets and signup forms for non-BirdLife members. Contact eric.woehler@gmail.com

If you are not from Tassie there are likely to be similar programs in your local area. I'm aware of a cool albatross cruise done out of Port Kembla I'd like to go on one day.

Volunteering for the simpler scientific surveys is a great way of having fun AND doing something useful. Get Googling.

http://tassiebirds.blogspot.com/2012/05/patience-rewardedpacific-gull.html

Albatross from Macquarie Island caught in Chile provides new insight into bird habits

Per ABC Georgie Burgess

PHOTO: Melanie Wells

A black-browed albatross that was banded as a chick on Macquarie Island nine years ago was caught almost 10,000 kilometres away during fishing operations off the South American coast. Observers on board the vessel saved the bird and discovered its unique leg band.

Chile's Fisheries Development Institute contacted Australian authorities and shared information about the bird which showed it hatched on the Tasmanian sub-Antarctic territory in 2009.

Wildlife biologist Kris Carlyon said the discovery was significant because little was known about where the birds travelled prior to reaching breeding age and during the non-breeding season. "What it highlights is the huge distance these animals can travel during their foraging activities."

Black-browed albatross live to about 40 years, so at nine years old the bird is still considered a juvenile. It won't return home until it's ready to breed, which occurs when the birds are aged between seven and 10.

Dr Carlyon said the bird's encounter with the fishing vessel was a reminder of the threat that long-line fishing posed. "If we're to protect these species properly we need to think about conservation on a global scale rather than simply worrying about conversation in our local area," he said. "We do need to recognise these animals travel long distances and are subjected to threats that are perhaps beyond our waters and beyond our control."

While the fishing industry and authorities have introduced a range of measures over the years to mitigate bird deaths, this particular albatross was lucky to survive its encounter with the vessel.

Endangered spotted handfish adapt to survive, with a bit of help!

Per ABC

Hobart artist Jane Bamford is making 3,000 ceramic spawning habitats which it is hoped will be used by the critically endangered spotted handfish in the Derwent River this spring.

Spotted handfish normally like to lay their eggs on a naturally occurring stalked ascidian, an invertebrate sea squirt, which has been decimated by siltation and the invasive North Pacific sea star. As a result, a fish unique to Tasmania is now rare. "They shouldn't be a rare fish, they used to be very common," "There should be a spotted handfish every five metres of so in good habitat." There are now only eight known locations — all in the lower Derwent River — where the spotted handfish is known to exist.

Dr Lynch of the CSIRO said that each fish lays up to 200 eggs after a courtship dance between the male and the female, and the female then cares for the eggs until they hatch. With good habitat in decline, the handfish are adapting to man-made substitutes.

Dr Lynch said even discarded beer bottles were being used by handfish for breeding.

"There are a couple of sites, one over near Bellerive and Howrah and another one near Battery Point, where there are bottle reefs … which provide good habitat," he said. "The seastars can't eat the bottles at least, and we often find spotted handfish hiding behind discarded bottles.

Over the past 10 years a range of people, including other scientists and volunteer groups, has placed about 6,000 plastic sticks on the river bed for handfish to lay eggs on.

The CSIRO and its project partners are hoping to deploy ceramic Artificial Spawning Habitats (ASH) to aid in the recovery of the species. Early feedback from divers indicates that ceramic ASH are strong and negatively buoyant, making deployment easier. The race is on now to get 3,000 of them in place before the species spawns in September.

Dr Lynch said there were various projects to help the handfish's survival and the work over past 20 years had probably kept the species going.

A $40,000 grant from the industry-backed Zoo Aquarium Association and matching funds from the CSIRO's Marine Diversity Hub will also fund a new program to start a captive breeding program for the species.

The breeding program will begin with the capture of a small breeding population which will then be propagated at the Sea Life Aquarium in Melbourne and at Seahorse World at Beauty Point.

The second step would be an insurance population and the third step would be captive breeding and the release of fish back into the wild.

Giant spider crabs: Where do they go after their annual migration in Port Phillip Bay?

Per ABC James Oaten, Photos: Pang Quong

Every year, giant spider crabs migrate to the shallows of Port Phillip Bay, reaching their biggest mass by June.

It's commonly accepted among divers and biologists that the crabs stick together to provide safety in numbers, as they squeeze out of their old, hardened shells and expose their new, soft shells that allow them to grow in size.

But what happens afterwards is a mystery. The spider crabs disappear into the depths for almost a year and no-one really knows where they go or why.

But despite decades of experience, diving enthusiasts Pang Quong and Sheree Marais have been unable to solve the many mysteries that surround the giant spider crab migration.

Mr Quong suspects the mobs stick together and move to the deeper parts of the bay where fewer divers explore. Other divers think they disperse throughout the bay and

"When they're moulting, they're growing their new shell, they need as much nutrition and food as what they can get," Ms Marais said, even resorting to cannibalism. It's also common to see large stingrays preying on the spider crabs at this time of year.

But another lesser known predator is the invasive Northern Pacific sea star is decimating the aggregations. It's a slaughter. "I think we definitely should be concerned," Ms Marais said.

Sheree Marais and Pang Quong want to see more money flow into researching the migration. "It would be great to tag them and do some genetic testing," said Ms Marris. "So we can see where they're moving and who's related to who."

"Most people think to see diversity or any action under the water you need to go to the tropics or the Great Barrier Reef," Ms Marais said. "You don't have to. We have kelp forests, sponge gardens and so many weird and wonderful animals.

Rubbish or refuge, Who wants an old oil rig?

Australia's offshore oil and gas structures are old and crumbling and the resource is running dry. While most want them removed, some experts believe they should remain where they are.

https://rebrn.com/re/looking-down-the-legs-of-oil-rig-eureka-172941/

Australia has over 2,000 wells, around 30 platforms and thousands of kilometres of undersea pipeline.

Offshore platforms are effectively huge artificial reefs, according to ecologist Peter Macreadie from Deakin University.

"These huge rigs that are metal available for free, could become a new dive site, improve the local economy and enhance local fisheries." He believes decommissioning regulations should be modernised.

Like shipwrecks, other human-made structures that are left in the ocean can become artificial reefs, creating new habitat for marine life.

"While they've been sucking oil out of the ground for 30 or 50 years, they've become home to all sorts of fish, corals, and rare things that trawl fisheries can't access," he said.

Some animals rely on these structures even more than you'd think — and there's evidence that in time, they can transform into breeding grounds and nurseries.

"We found that a lot of the fish seemed to have been born there, which was an important finding given the debate about whether fish are produced by these rigs or simply attracted there," Dr Macreadie said.

It's more than a matter of biodiversity though, according to fish ecologist Todd Bond from the University of Western Australia, who said fish aggregating at oil and gas pipelines on the North West Shelf could be enhancing the value of commercial fisheries in the area.

"On the pipeline there are more, and bigger, commercial fish than in the surrounding areas," Mr Bond said.

Fishing is banned within a 500 metre zone around the structures, so removing them could also take away protected habitat for the porpoises and other animals, Dr Todd said.

In the Victorian Bass Strait, female Australian fur seals were detected navigating to and hunting around oil and gas pipelines, and a recent study found several different sharks, commercially-important fish, and a "likely new species" of roughy (a type of large deep-sea fish) at deep depths around wells on the North West Shelf.

Dr Todd believes it's a strong argument for leaving certain structures in place.

For some people, a rig at the end of its life amounts to waste material, and shouldn't be left in the ocean. "If you are proposing to leave it there you're effectively — according to the United Nations guidelines — dumping waste at sea," senior Greenpeace campaigner Nathaniel Pelle said. Greenpeace maintains the environment should be returned to its "original state" for any situation, if it's the best environmental outcome for the ecosystem. And protecting the biodiversity around a rig might not be more important than returning the ecosystem to its natural state, Mr Pelle said.

Many of Mr Pelle's concerns mirror the questions scientists and industry want to investigate.

"We want to find out how long one of these rigs would last for, if you left it in the marine environment based on corrosion," Dr Macreadie said.

The cost of Australia's decommissioning bill over the next 40 years is conservatively estimated to be over $40 billion, some of which will be picked up by the taxpayer.

Under current regulations the industry pays petroleum resources rent tax (PRRT) once they start making a profit, and when they are done with a platform and decommissioning becomes an expense, they can claim back some of that PRRT from the taxpayer, Mr Bills said.

A decommissioning industry established to permanently convert offshore oil and gas structures to artificial reefs would need to be supported by science, and Australia has a long way to go in understanding the overall impact of leaving these offshore structures in place, Dr Macreadie said.

There hasn't been much research to support decommissioning alternatives.

"Our knowledge is rudimentary compared to other parts of the world," he said.

I note that in the Gulf oil companies in the USA just walk away. The oil rigs are a menace to shipping but also great for fishing. They would still need to be marked and/or rendered safe for navigation by demolition.

The Australian rigs aren’t usually near populated spots so the are potentially less of a hazard but also not that easy to dive or fish. Tassie will take one or two mobile rigs as we seem to have no luck in getting a Navy dive wreck off the ground.

Oil Rig Wreck Dive – The loss of the Key Biscayne

26-42M

GPS: 31° 09.89 S , 115 ° 11.81 E

In 1983, this off shore oil platform rig was being towed south for a refit. Gale force winds were encountered and the tow lines parted. The rig began to wallow and list as water entered the rig. Eventually she turned turtle and sank 10 nautical miles off Lancelin. It is now lying upside down in 42 Meters of water with the highest point at 26 Meters. The visibility and fish life are often good including jewfish and snapper. The rig has partly broken up. The deck of the rig is flat and relatively featureless, with the best life on the legs. The three triangular legs now laying splayed out on the sand. These legs sit 10m off the bottom and are at least 200m long. It is renowned for its sharks, harmless Port Jackson and Grey Nurse sharks. This is a deep dive for experienced divers only.

Imagedive.com.au

Breaksea Cod, Epinephelides armatus,

Source: Rick Stuart-Smith / Reef Life Survey.

A relatively large cod found only in Western Australia. The Breaksea Cod has a large 'square' tail and is highly variable in colour, ranging from yellow, pink or greenish, to brown or grey, with a distinctive black blotch around the anus (hence one of the other names - Black-arse Cod). Unlike many other cods or groupers, this species does not change sex during its life. Endemic to Western Australia, from the Recherche Archipelago in the south, to Shark Bay on the west coast. Inhabits offshore limestone and coral reefs to depths of 100 m, commonly to about 35 m.

Like many other groupers, the Breaksea Cod is long-lived and matures slowly (3–4 years) making it vulnerable to overexploitation. Maximum age is about 20 years.

Cave cardinal

This deep-living species is widely distributed and occurs in caves and reefs. Its population in the greater Caribbean is possibly threatened by the invasive lionfish, but this is not considered to be a major threat on a global level. It is likely easily targeted by the invasive lionfish given its small, shallow body and nocturnal, demersal habits. At least 11 Apogonidae spp. have been documented in the diet so far. Due to the lionfish's ability to consume a variety of fishes smaller than 15 cm, both adults and juveniles of this species are likely consumed. In the Bahamas, a 65% decline in lionfish prey biomass over a period of two years was observed (species-specific data are not available at this time) (Green et al. 2012). However, this is only a threat to its population in the greater Caribbean region.

Seagrass means food for humans

Seagrass underpins the survival of the 25 most-fished species on our planet.

The 72 known species provide a safe nursery habitat and a source of food for baby fish. Fish such as Walleye Pollock, Atlantic Cod and tiger prawns rely on seagrass to support young. The habitat has varying importance for fish across the planet, researchers discovered: in the Indo-Pacific an estimated 746 species use seagrass habitats; in Australasia, 486; in the Caribbean 313 species were found to be dependent. In the Mediterranean alone, seagrass covers just 2% of the seafloor–and yet about 40% of fisheries landings in the region are made up of species that depend on these habitats for their survival.

The study also highlighted the extent to which smallscale fishers depend on these easily-accessible ecosystems for food (seagrass meadows typically occur in shallow coastal waters). For these fishers, the meadows aren't only a source of finfish, but often of creatures like worms and crustaceans that are either used for human diets, or as bait.

Destruction by coastal development, pollution from runoff, and damage by recreational boats and fishing trawlers that have already destroyed 7% of seagrass habitat globally. Another looming threat is climate change, which is warming coastal waters in many parts of the world, and placing pressure on the growth of these undersea meadows.

Because of this, the researchers argue that we need to significantly ramp up our protections of this habitat

Source: Unsworth et. al. "Seagrass meadows support global fisheries production." *Conservation Letters*. 2018.

Issues and Activism Roundup

Australia

MARINE PLASTICS -Plenty of ongoing activity around marine plastics with the Greens and Sea Shepherd and many others being active in a number of public events and campaigns. Everyone seems keen to get in on this issue. A huge spread of nationwide events were on offer for Plastics Free July.

CLIMATE CHANGE - How about a climate change free August too? Fortunately, there are a few of these events down the eastern seaboard, especially in Canberra.

https://www.eventbrite.com.au/d/australia--australia/climate-change/?lc=1

NATIONAL SCIENCE WEEK - Its already started so get your skates on https://www.scienceweek.net.au/

POPULATION - Group plans its own demise. Now there is a thought, why not join the fashionably long list of species that have gone extinct thanks to the pressures imposed by industrialised civilisation. We are not bitter and twisted.

http://www.abc.net.au/news/2018-08-05/voluntary-human-extinction-movement/10071036

VIRTUAL SCIENCE DIVE - You can't get cold, fail the medical, smell slightly of wee, squeeze into a neoprene corset after those big lunches, have snot running down your face, what's the point? Science and GBR conservation of course.

http://www.abc.net.au/news/science/2018-08-06/virtual-reef-diver-great-barrier-reef/10069510

Tasmania

MARINE FARMING - Marine farms are still in the news with the industries stocks with environmentalists appearing to fall further. There have been localised protests about fish pens near Nubeena along with the new facility at Okehampton. Lack of a "social licence" keeps popping up in literature and the marine planning laws are a renewed focus. Read Environment Tasmania's industry critique here, https://d3n8a8pro7vhmx.cloudfront.net/marine/pages/600/attachments/original/1502759329/Cleaning_up_Tasmanian_Salmon._FINAL.pdf?1502759329

HANDFISH - Recently, a proposal to place two harvesting pens in prime habitat for the critically endangered red handfish territory off Green Head in Norfolk Bay has also hit the news. These handfish are 6 times rarer than Giant Pandas and are only found in Tasmania. As a handfish devotee, I'd much rather this didn't happen here, and hopefully it isn't moved to a place just as bad. We need more surveys and scientific work in this area.

http://www.abc.net.au/news/2018-08-11/fears-salmon-move-will-affect--red-handfish-habitat/10106684

COURT CASE FAILS - Ironically, Huon Aquaculture is the proponent at Green Head and they have recently been trying to portray themselves as the environmentally sound alternative to their main commercial rival, Tassal. This recently included a Federal Court case against Tassal over Macquarie Hbr overstocking, recently decided against Huon. If I have spare time I'll try to read it, but if you are very keen have a go at this http://www.austlii.edu.au/cgi-bin/viewdoc/au/cases/cth/FCA/2018/1011.html?context=1;query=salmon%20huon;mask_path=au/cases/cth/FCA

TAS/NT

SINKING OF FRIGATE DARWIN

Love it or hate it we are going to spend up on a new dive site, or rubbish tip, depending on your point of view. All depends now on the State Government agreeing that it's a good spend of taxpayers cash. But Hurry, now Darwin wants the "Darwin", the cheek!

https://www.themercury.com.au/news/tasmania/hmas-darwin-tipped-for-new-dive-site-in-tasmania/news-story/c6c3ed05bbb944b9294da45232e371d6

http://www.abc.net.au/news/2018-08-11/darwin-mayor-unhappy-about-frigate-pledge-for-tasmania/10107830

NSW

MPAs- The usual ignoring or even active gutting of marine protected areas continues with the NSW government the most recent culprit. They have recently been rolling back MPAs in a lurch to the right. Former State Premiers of various stripes have been relatively easy-going or even supportive on the issue. With all mainstream groups increasingly needing the support of minority parties as our politics fragments, is the public increasingly being held hostage to extreme ideals?

https://www.nature.org.au/media-releases/2018/06/government-halves-length-of-coast-protected-in-marine-sanctuaries/

SYDNEY MARINE PARK

This idea is intermittently in and out of the news and doesn't seem to be going away,

https://npansw.org/npa/campaigns/statewide-campaigns/sydney-marine-park/

QLD

ADANI PROTESTS GET WHACKY - You can find out why we need this eye-catching headline if you bother to subscribe to the Townsville Bulletin, but instead you could read a properly researched free article about a contaminated water spill from the ABC, while its still has the funding to do so,

http://www.abc.net.au/news/2018-08-10/adani-spent-a-year-trying-to-hide-reef-spill-details/10090632

WANT HALF A BILLION FROM THE GOVERNMENT BUT WERE TOO FRIGHTENED TO ASK - There is hope, with no particular background and without even asking, you too might be given $440 million. This is an exaggeration, the money is just to be handled by this private foundation and then most of it hopefully will be given to people who know what they are doing, hopefully. I'm assuming the usual government grant requirements will apply?, or do you just need to be 'friendly' to get it? As this group was unaware they were getting the job and have never done this before on this scale, I suspect even they don't know.

http://www.abc.net.au/news/2018-08-09/barrier-reef-foundation-grant-shocking-myer-former-board-member/10090780

Maritime Heritage Snippets from AIMA

The **Underwater Cultural Heritage Bill 2018** is through the House of Representatives! This Bill intends to modernise the Historic Shipwrecks Act 1976 and align with the UNESCO 2001 Convention on the Protection of the Underwater Cultural Heritage

https://www.aph.gov.au/Parliamentary_Business/Bills_Legislation/Bills_Search_Results/Result?bId=r6095

A team of Flinders University archaeology researchers have successfully used **electrical resistivity tomography (ERT)**, to 3D-map the paddle steamer barge, *Crowie*, sunk at anchor in the late 1950s in the River Murray at Morgan, 170km northeast of Adelaide
https://www.couriermail.com.au/news/national/beaumont-case-grave-finding-technology-used-to-locate-shipwrecks/news-story/37bf579d61a6e5d7ba1cb3af25b2b6b6

An ambitious project by Japan's philanthropic Nippon Foundation and GEBCO, a non-profit association of experts, aim to **map the remaining 93% of the worlds oceans by 2030**
http://www.thisisplace.org/i/?id=fb134ab4-728e-4adf-be10-ae07b17caefe
https://www.niwa.co.nz/news/nz-scientists-launch-their-part-in-bold-project-to-map-seafloor

MAAV have discovered the **SS *Vicky*** wreck in the Bass Strait! This 7 News Melbourne Report details the find and provides some background on shipwrecks in Victoria
https://www.facebook.com/AIMAunderwater/posts/2167106090192453

Code of Ethics for Diving on Underwater Cultural Heritage Sites! We encourage all divers to read it and consider how their behaviour can contribute towards the protection and preservation of sites all over the world.
http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/divers/code-of-ethics/

Flinders University is seeking interest from anyone who has a connection to the **Garden Island Ships' Graveyard in SA**, or who has memorabilia or photographs relating to any of its vessels. Willing participants will be asked to complete a short questionnaire and possibly a follow-up interview as part of the TREASURED COLLECTIONS project led by Erica-Jane Miller, an Archaeology Honours student. Please contact mill0781@flinders.edu.au to participate or for more information.

Our Goal

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

The Crew

Michael Jacques, Editor
SA Advisor – Peter Day
Media Monitor – Alison Triffett

Cover photo, *Tony Neale Cairns Egret*

We are now part of the wonderful world of Facebook! Check us out, stalk our updates, and 'like' ourpage to fuel our insatiable egos.
Contact us: marinelifetassie@gmail.com