MARINE Life

"We survived the Mayan Apocalypse" edition!

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Our Goal

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

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NATIONAL News Roundup

New Fishing Report – Nothing to worry about!

- commentary by Mike Jacques

"The Status of Key Australian Fish Stocks" report has found almost 90 per cent of important Australian fish stocks are "sustainable".

It also finds two species, the southern bluefin tuna and school shark, are overfished, while a further three are shown to be declining. The media releases that came with it, didn't talk about the fact that we have known about overfishing like this for a long time and done little, or the large numbers of species for which we have little information, or that weren't included in the report.

In total, 150 stock status assessments were undertaken across 49 species. A stock status could be determined for 111 of the stocks assessed, 98 were assessed as sustainable stocks, 8 transitional–recovering stocks, 3 transitional–depleting stocks, and 2 overfished stocks. The remaining 39 were classified as "undefined stocks", meaning we don't know enough about them. That last bit wasn't emphasised in the media releases.

It does seem to be a good snapshot of our present fishing activity. "Of the Australian catch reported in the Status of key Australian fish stocks reports, 91 per cent is from sustainable stocks, less than 1 per cent is from transitional - recovering stocks, less than 1 per cent from transitional - depleting stocks; 3.5 per cent is from overfished stocks, and 4.5 per cent is from undefined stocks."

Everyone then got very keen about making statements to consumers that they needn't be concerned about the status of Australian fishing practices. It was all O.K. Compared to the standard of management in the Philippines that is certainly true, but it doesn't mean our industry is free of problems.

Call me a grumpy old greenie, but I found the over-positive tone of this report a bit sickening, or maybe it was just the Minister's 'look at me, I support industry' antics afterwards.

Apparently it wasn't just me. You can't please everyone, not even your most ardent supporters. Senator Ron Boswell said if so many fisheries were sustainable, it raised questions about why Federal Environment Minister Tony Burke needed to declare the Coral Sea Reserve.
Of course, other grumpy old greenies (the spoilsports) pointed out that things really weren't always that sustainable. AMCS retorted with, "… they say only two species are overfished. It sounds like they've forgotten others such as orange roughy, eastern gemfish and blue warehou whose numbers are so depleted they are at the edge of commercial extinction. This report effectively tries to wipe the slate clean as far as the history of their overfishing is concerned."

WWF-Australia spokesman Professor Michael Harte also said it appeared the Government had reported on the best managed stocks, leaving the status of a further 551 to be surveyed. They also pointed out that it was Great Barrier Reef Marine Park closures - much hated by fishers - had ensured that species like sand crabs were not over-fished.

Patrick Hone, from the Fisheries Research and Development Corporation, says "When you read the report, it tells us where we've got to put our effort in terms of getting better data, or doing better

management, and that is going to be an absolute godsend for fisheries management."

I really don't believe that. The report is largely collating what we already know into one destination, I suspect that there is little that's newly created just for this report. What the report is great at, is the thing we didn't talk up much. It is very well written and puts together a nice summary of each fished species in its current state. It's a great educational tool. "As scientists, we're not saying everything's rosy or everything's bad," Dr Hone said. "We're saying, here's the data."
It gives a good rundown of how the current major target species are fished and the major issues with the management of noted species. Apart from the size of the report, the information is very accessible to registered voter "Joe Public", the intended target audience in my opinion. It has easy to follow graphs and nice photos and artwork, which I'm not going to complain about.

Tantalisingly, the Minister is trying to entice us with vague promises of a bit more substance later. Future editions "...may look at even more species and broader issues such as ecological impacts, economic performance, management performance, and social good."

The report IS well worth a read if you want an overview of fishing in Australia right now, but be warned. At times it overworks the spin (eg, stating earnings figures over ten years to show that fishing is ten times more important than it is). I smell "scent of public relations focus group" all over the summaries and introductions. It isn't a bad start but like all things, you also need to follow up this report with research and reading on your own account.

For the report see http://www.fish.gov.au/Pages/SAFS_Report.aspx

Register your rare whale sighting

- by Mike Jacques

After our last edition published a gripping exposė of the vital importance of sea cucumbers, I was surprised to see Environment Minister Tony Burke announcing that he was pinning his future popularity on a new international collaboration to share information about whales.

Mr Burke said the Australian Marine Mammal Centre at the Australian Antarctic Division will create a database that allows Southern Ocean seafarers to share their photographs of whales. Mr Burke said the database aims to capture images of the whales to help scientists better understand whale abundance, distribution and behaviour. "This is a chance ... to make a valuable contribution to Australia's non-lethal whale science and conservation research," Mr Burke said [*but he really meant to insult the Japanese, as their citizens aren't registered voters*]. Being serious for a moment, the project will hopefully gather information on rarer Antarctic blue and killer whales that are not regularly encountered in the Southern Ocean. The pictures will support other satellite tagging and acoustic research.

AAD want high-resolution photographs, with the date and location of the whale. The photos should include the whales' tails, sides and fins to help with individual identification. The images collected will be sent to existing photo identification catalogues in Chile and the United States. This information will then be fed into the International Whaling Commission [*metaphorically wrapped in lead and fired out of a cannon at the Japanese representative, OK, not lead, maybe a wet teabag*]. The whale database can be accessed through the Southern Ocean Research Partnership.

Queensland News

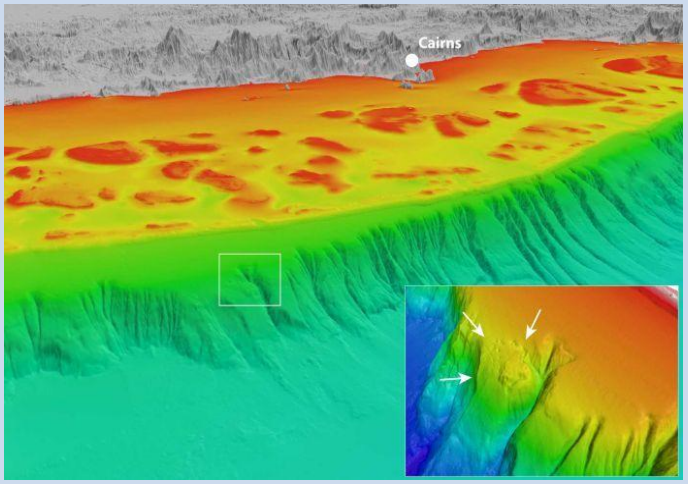
A bit too much ‘violent crumble’ – is the GBR ‘collapsing’?

Media outlets have been posting some catchy headlines saying that a “giant” slab of the GBR is about to collapse and impliedly, cause some kind of human or environmental Armageddon in north Queensland. However, to put this in context we need to look at what was actually said, and exactly what we are on about.

Researchers mapping the sea floor near the Great Barrier Reef say they have found a slab of collapsing sea floor that could trigger a tsunami in the future. Apparently it is only a “matter of time” before the slab collapses. This slab, called the “Noggin Block”, is the remains of an underwater landslide. Dr Robin Beaman from JCU says the slab is "... up on the top of the continental slope in about 350 metres of water". "This block, which is about one cubic kilometre ... is in the very slow, early stages of starting to break away from the edge of the Great Barrier Reef."

By Great Barrier Reef, we actually mean the edge of the continental shelf adjacent to what your average layperson would describe as the GBR. The only impacts it will have on the reef, or the coast is if it happens suddenly enough to cause a tsunami. "The only thing that we could find that would trigger a block breaking away on that scale [would be] a very large earthquake in the near vicinity. That is very unlikely," he said.

I suspect (without knowing), that if we looked along the edge of the continental shelf, we might find a few more of these features and that they aren’t especially rare. Lucky then, that we don’t live in a region that is noted for lots of big earthquakes.
It would take about an hour for the tsunami to hit nearby NQ coastal areas. "We don't really know when such a block might collapse. All I can say is sometime it eventually will." Would it be any worse than a cyclone?



According to the Bureau of Meterology, small tsunamis have often hit Australia, usually generated by events across the Pacific. Some have unknown causes and could be related to localised landslides. In 1895, a wave caused ships to drag their anchors at Newcastle. In 1899 a six foot tidal wave washed into Darwin. The origins of these events were unknown. One event that does seem to have a localised cause was in 1874, when a tidal wave hit the sparsely populated Port Davey area in Tasmania. This occurred before the arrival of the sound of an earthquake, sound waves that shook local houses.

While the risks may not be as big or immediate as the headlines suggest, this doesn’t mean we can ignore these kinds of things. I do agree that it would be handy to explore further and see just how widespread these formations are.

WA News

WA heat wave kills fish and attracts sharks

- *by Mike Jacques*

The ocean temperature off the west coast of Australia has risen by five degrees.

Dr Rick Fletcher of the Fisheries Department of Western Australia says the increase in temperature started a year ago. "About two years ago we had an event where the Leeuwin current, which flows down the west coast of Western Australia, which brings hot water from the tropics, was flowing quite strongly. That allowed the water temperature to increase substantially, up to five degrees hotter in some areas."

Although warming of ocean waters does occur, Dr Fletcher says the increase is the most extreme ever recorded off the WA coast. Water temperatures hit almost 30C off some parts of the Mid West, while near Augusta in the South West they were up to 24C.

"On the east coast there's been a general increase in the water temperatures over the last 20 to 30 years, the same as the west coast, but not an extreme event like the rapid increase of five per cent like we're seeing off the coast of WA."

The impact has been devastating on several marine species. "Abalone in the north part of the west coast, up near Kalbarri, we had over a 90 per cent mortality which happened immediately. But what we've seen is some other species have been affected over a longer period of time, we've had a much lower level of scallop recruitment in Shark Bay and the Abrolhos Islands. We've also had much low recruitment of crabs in Shark Bay, and that's to both adults and juveniles".

Inevitably, it has led to speculation about whether this may have contributed to the latest spate of five fatal shark attacks and poor crayfish recruitment.

Great white sharks prefer cooler water and a researcher believes the animals may have been pushed closer to beaches as the warmer tropical water flowed south, forcing the cooler water towards the coastline. He said that along with increased surveillance, the theory was one of the only plausible explanations for the rise in great white activity given the animals took 15 years to reach sexual maturity.

"It may be the sharks are coming in with the colder water or it may be that the things they're feeding on are coming in with the colder water and the sharks are following them," he said.

The stronger and warmer southward current brought some unusual visitors to Geographe Bay where they were seen at the Busselton jetty observatory. The fish probably won't survive through the autumn and winter. Raccoon Butterfly fish, Reef Banner fish and Scissortail Sergeant Majors were seen. *[p.s. You MUST PLEASE send unusual fish sightings reports to Redmap www.redmap.org.au]*

TASSIE News (that 'other' island)

Dolphin Harassment – new guidelines

- *by Mike Jacques*

You may be aware of a recent prosecution of two jet ski owners who apparently harassed dolphins off Lauderdale. They were seen by a group of local onlookers who videoed them "ride through the dolphins". Onlookers believed the riders did it deliberately and repeatedly. The dolphins split up and swam in different directions.

One of the witnesses says it went on for about half an hour and the dolphins, many of them calves, were visibly distressed. I don't know how you would gauge that mostly submerged expression of distress, but it certainly distressed the onlookers. "I felt immensely angry...the anguish I felt was quite alarming."

One jetskier denied that the dolphins were distressed. "It's just been blown right out of proportion over nothing really. We were only just playing with the dolphins as you do when you go out on the boat and jet skis and they'll come and play with you all the time". They claimed the dolphins had been following them before and after the video was taken.

The news was picked up by NBC News online and the NZ Herald (where they reported dolphins were "run over"). The Courier Mail nailed their colours to the mast with the headline "Jetski Hoons Attack Dolphins".

Marine & Safety Tasmania Spokesman Peter Hopkins said, "Having seen the video, it appears the jet skis may have approached the dolphins probably a little bit too quickly from behind." Wildlife biologist Kris Carlyon said it "This is a sad example of people getting over-excited and ruining it for everyone else." MAST didn't prosecute, but DPIPWE did. The offenders pleaded guilty to a charge under the Whale Protection Act of interfering with a pod of dolphins. They got a 12 month good behaviour bond. Chris Simcox from Against Animal Cruelty Tasmania said the sentence was very disappointing. "The courts aren't handing out penalties in line with public expectation," he said.

The facts of this particular case aside, I must say it did raise some questions in my own mind. Dolphins seem to seek out high speed interactions with boats. Did this mean we were also going to get in trouble if dolphins want to surf alongside?

Apparently new rules are based on national guidelines and will account for this curiosity. "We're well aware that a lot of the dolphin species and some of the whale species will actively approach your boat," DPIPWE said. "There's no problem with that at all if they're driving that interaction."

The regulations will require low-powered vessels to otherwise stay 100 metres away from whales and 50 metres from dolphins. The rule for jet skis is 300 metres. Previously boaters were not to exceed 8 knots within 100m of dolphins and withdraw if the animals showed signs of disturbance. Not much of a change really, except that we all seem to agree that we find jet skis annoying, so dolphins must too.

Fundamentally, it shouldn't be that hard. Boring past any human or animal, unexpectedly, closely, loudly and quickly, is likely to upset them. ALL boat users, regardless of craft type, could just use some common sense.

OTHER bits & pieces…

Microworld of the Open Seas

text Mike Jacques, photos via Aust Museum and Peter Parks

The word "plankton" meaning 'wanderers' in Greek - living things that move mostly with the current. In the ocean they provide a lot of the energy that keeps the whole system going.

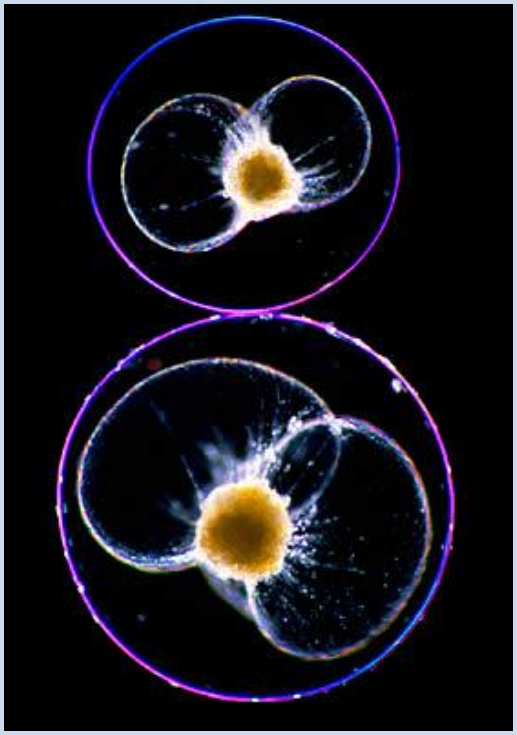
They vary a lot in size, most are way less than 0.1mm, while some jellyfish can be 2 metres across. Plankton contains both animals and plants. They give the name "zooplankton" to the animals making up the plankton.

"Phytoplankton" are the plants in the plankton that get energy from the sun, although some of them actually swallow other plant cells and seem a bit more like animals. Phytoplankton are usually small single-celled plants or drifting chains of small plant cells.

A fashionable way to divide them up is to talk about them based on their size, "microplankton", "nanoplankton", or the really tiny "picoplankton". From 60-98% of Australian plankton is made up of the especially small picoplankton, similar to bacteria. That size is the most efficient for absorbing the sparse supplies of nutrients that are found in Australian waters.

Phytoplankton are the world's most efficient solar battery. They can also divide water into hydrogen and oxygen at room temperature, a job that many multi-celled human chemists struggle to do. As efficient in design as they are, phytoplankton are just plants, so they need light, minerals and fertiliser, to thrive. This means that you only find them in shallow depths, and only in places where there are nutrients and minerals in the seawater.

The plankton isn't everywhere and only some spots in the ocean are really suitable for planktonic blooms.



This 'sea sparkle' phytoplankton produces bioluminescence that can be seen in the water at night

Fish love phytoplankton, but because it is so patchy, 1% of the ocean produces 50% of the world's fish catch. There is a storehouse of complex nutrients and minerals (nitrates, nitrites, phosphate and silicate) lying on the deep ocean floor. Here dead sea animals have decomposed back into basic chemical ingredients. The sea floor also has the small amounts of iron, copper, cobalt, selenium, manganese and other minerals that are needed for plankton's more complicated body structures. Getting it up to the surface where there is sunlight, that is the problem for plankton.

Currents, upwellings and phytoplankton should always be mentioned in the same sentence as you can't really have plankton without the nutrient enriching movement of the deep seas. Australian waters are virtually a nutrient desert compared to northern hemisphere waters and Australia's fish productivity is low. We catch only about 0.2 of the world's fish despite the huge size of our waters. New Zealand's southern fisheries are 100 times more productive thanks to the West Wind Drift currents.

Our major oceanic currents, like the Eastern Australian Current (EAC) and the Leeuwin Current, are very important in providing some productivity to our oceans. The Eastern Australian Current flows from the tropics down the Australian East coast and affects placed as far away as southern Tasmania. This warm-water tropical current is nutrient poor, but that is not the whole story. It causes sea to 'pile up' where it meets colder water. This causes a localized rise in sea levels by up to 80cms and water wants to flow downhill. That movement, along with the wind and the underwater geography of our East Coast, is enough to produce anti-clockwise eddies off the edges of this big current. The effect is a bit like the whirlpool you get if you unplug the kitchen sink. These eddy fields can be as much as 200km wide and reach all the way to the bottom of the continental shelf. They stir up the deep sea floor enough to transport minerals and nutrients to the surface.

Along the Southern Ocean, currents upwellings happen after major storms in winter, but at that time of year there isn't enough sunlight for phytoplankton to exploit this bonanza of fertiliser, so the phytoplankton bloom has to wait. Come spring, phytoplankton get enough energy from the sun to start up the engine of life.

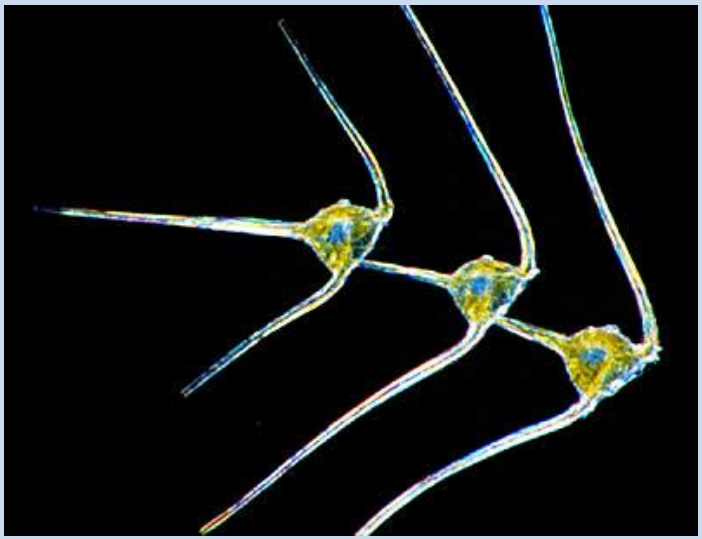
A flood of light and nutrients causes a phytoplankton cell to double its size in quick time. It then reproduces by splitting in half and massive

increases in populations occur. A phytoplankton population boom is closely followed by a jump in the numbers of predatory zooplankton who feed on them, like protozoa. These small protozoa are just the right size food for other bigger animals like little baby sea-stars and cray larvae that also swim around in the plankton stream. Major predators of smaller phytoplankton also include salps, comb jellies and stinging bluebottles. While these jelly-like animals can be a bit indigestible for fish, some animals like turtles are evolved to feast on them.

Occasionally a down-welling will cause buoyant objects to form up in lines on the surface, causing a noticeable 'slick' of larvae, fish eggs, organic material and jellies at the surface. When the wind is blowing onshore, it is a delight for beachcombers and a blight for swimmers. The beaches can be clogged with masses of salps and bluebottles.
Schools of small juvenile fish soon get in on the act. They then attract predatory tuna, marine mammals and seabirds. The most well-known of these phenomena is the 'sardine run' off the east coast of Southern Africa where cold currents from the south cause a temporary but massive boom in marine life.

The water will go cloudy with plankton for a while, but the surface layer will soon become depleted of nutrients because there are soon too many mouths to feed. The plankton starts to die, and only the well-adapted can survive this famine.

As the numbers of plankton drop, the fish and birds will move away to a more productive area. The plankton that is a bit more mobile, like the dinoflagellates that come equipped with a pair of tiny oars, will swim down deeper where there are still some nutrients.



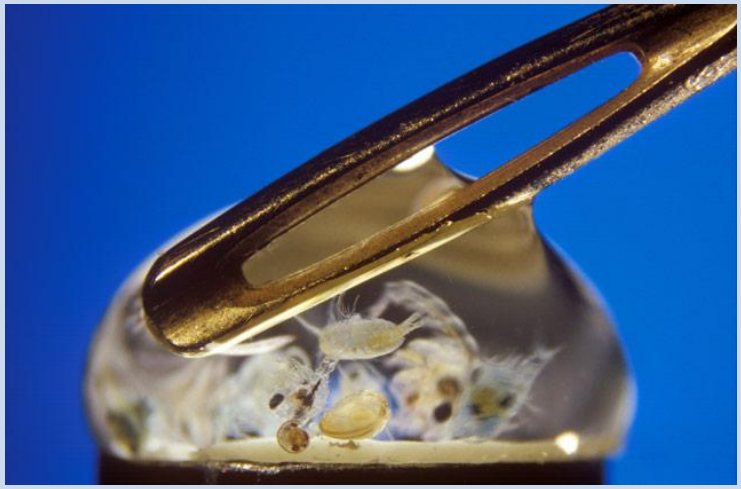
Diatoms are small single celled plants with a hard shell. They can't swim to greener pastures but diatoms can hang on because they are very efficient at extracting nitrogen at very low levels.

Then the wind, or upwelling current eddies again stir up the surface layer and inject more nutrients. The 'boom and bust' cycle takes off once more. Sometimes plankton growth is not halted by the amount of nutrients. In fact, plankton can sometimes get too much of the wrong sort of 'junk' food. Off Sydney it's been shown that vitamin B12 and thiamin deficiency halts plankton blooms well before the food runs out. They have binged on 'cheap takeaways', so the plankton has to wait for fresh currents to bring along the marine equivalent of a dissolved 'vegemite sandwich' before they can start breeding again.

In the open ocean the plankton usually have to handle some pretty rough food, naturally complex nitrates and nitrides that take a bit of eating, but if they travel near an estuary like Port Phillip, Port Jackson, the Derwent, the Swan, or the Port River, the plankton will sometimes find easy-to-use ammonia 'fast food' from sewerage works and other human pollutants. The plankton can bloom so dramatically, that it can starve the water of oxygen and outcompete other forms of life. An enclosed waterway can end up being full of plankton and algae, murky, smelly and lifeless.

Despite occasionally causing us problems, plankton is the foundation of all marine life, including neing the basis of our seafoods. An area of ocean rich in plankton can be up to 5 times more productive than the same area of sea floor. Coastal reef also get a lot of their food from passing plankton. Great Barrier Reef corals have been found to get 90% of their food from oceanic plankton. There is so much of it, that it can sustain the largest animals on Earth, animals as large as a Blue Whale.

We can't see most of them, but as Yoda would say, "size not important, only life important".



Critter Files (with a difference!)

Weird, whacky, and sometimes totally inexplicable animal behavior…

- *by Emma*

Tasmania, like other warmth-challenged areas, suffers a little on the biodiversity front. By this, I mean our plant and animal species are somewhat limited when compared to the deck of cards held by our warmer neighbours. Tassie's underwater world is no exception – we have some seriously awesome marine critters, but they tend to be ugly, or uncharismatic, or just plain boring. Most of our fish are brown, most of our seaweed is brown, most of our reefs are brown… you may be sensing a theme here. It's for this reason that a whole host of amazing critters go totally unnoticed. I spent AGES (a good 3 minutes at least) tapping my fingers and wondering which single critter I could pick to write about for you devout readers. But suddenly it dawned on me - why write about just one of my favourite underwater critters, when I could write about ALL THE THINGS???

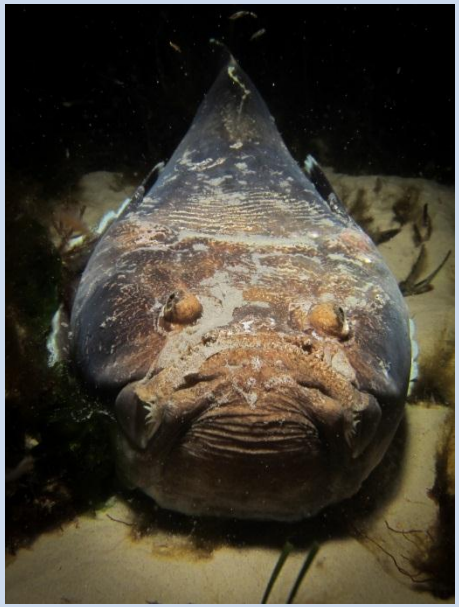
So that's exactly what I did. I've picked out a selection of animals with some particularly interesting behavioural quirks. Some of them you may have never encountered; others you may have seen and always wondered what on earth they were doing. As always, we love to hear from you guys, so if you have anything you'd like to add to this list, or secret fish activities that you just can't figure out, then write in to us at **marinelifetassie@gmail.com** and let us know!

Most images have kindly been provided by John Smith, keen Bicheno-based photographer, with a few of my own thrown in. Big thanks, John!

Blue Throat Wrasse

Ever wondered why female blue throat wrasse are so much more common than males? And why the males are always so big? Well, interestingly (and slightly creepily), wrasse are actually able to change sex during their lifetime. All fish start off female, and their social structure is built around a single dominant male (usually he commands 10 or so females on the reef). When he dies, another female is allowed into the group and the next most senior female undergoes a sex change to become the 'top' male. And you thought you had identity crises…

The Stargazer



Possibly one of the ugliest fishes imaginable. Nature's little accident. Also one of my favourites for that very reason. Stargazers spend most of their days bunkered down in the sand with their beady eyes and gaping mouths sitting flush with the sand surface. When a tasty morsel swims past, these guys use their brute strength to force open those big jaws, creating a vacuum inescapable by the unfortunate passing prey. Also, if you are a diver and happen to rest a fingertip on the sand and manage to prod a buried stargazer, you will be bitten. It will hurt somewhere between losing a limb to a great white and a papercut. A terrifying experience for all involved.

Reef fish (in general)

According to John, "many fish are curious of divers but some bluethroat wrasse and jackass morwong seem to go to extremes. Bluethroats, especially the females, will barge into a lot of my shots, while jackass morwong will even push their snouts up against the dome port." I have encountered a similar thing when working in one spot underwater for a long period - the reef fish become very inquisitive and start crowding around. I've noticed when I'm on rebreather (not blowing any bubbles) that they'll come right up to my face and stare deeply into my eyes. While I like to think we're sharing an intimate moment, I suspect this behaviour might have more to do with seeing their own reflections in my mask/John's dome port. Not sure whether it's aggression or simple curiosity, but it's nice to feel like you have a friend on long cold dives :-)

Draughtboard shark

These guys are very docile. I quite literally think they'd rather have a diver drag them around by the tail for 10 minutes than have to swim 5m out of reach. Curious behaviour #1 is that you'll sometimes find them flopping around with grossly bloated stomachs. Big meal? Pregnancy? All possibilities, but these guys also are known to swallow massive amounts of air or water to distend their stomachs and make them appear bigger when they feel threatened. I'm sure it serves a good evolutionary purpose, but they've only ever looked very uncomfortable and sheepish when I've seen them lying on the bottom or flapping around on the surface like this.

Draughtboard curious behaviour #2 – a tendency to run straight into rocks, divers, or even plough headfirst into the sand. They are predominantly nocturnal animals, so perhaps this may be an artefact of poor daytime eyesight? They do remind me a bit of my old cat who was both cross-eyed and I suspect a little mentally challenged. He used to run into things too. And sleep in the clothes drier.

Emma's mentally challenged cat – cousin of the draughtboard shark?

Bluethroat/purple wrasse and morwong

Purple and bluethroat wrasse are frequently spotted lying passively/lazily about on their sides on reef or sand. Even when you approach them as a diver, they seem too focused on their nonchalant posing to care about your presence. This seems to happen frequently around certain "focal" areas of reef, like on a large boulder or patch of urchin barren, i.e. "cleared" areas, and is often associated with "rubbing" against the rocks. I am purely speculating, but I've wondered on several occasions whether this is some kind of lead-in to mating by the females – kind of like women in pubs leaning against the wall preening their hair. Maybe some expert wrasse enthusiasts can weigh in on this one?

Maori Octopus

This species is the octopus the most commonly spotted by divers. Have you ever looked down and noticed a tentacle fondling your knife or shiny BCD clips? Either your buddy is taking the whole "stick together" thing a little too seriously, or you've found yourself a maori octopus. They seem to be either incredibly shy or highly curious, with very little middle ground. Interestingly, size doesn't seem to be a factor in deciding this. The big monsters may disappear into the kelp the moment you look at them, while sometimes it's the little guys that give you the biggest grief/enjoyment as divers. John Smith has had some particularly interesting encounters with local occies in Waubs Bay, who have taken a liking to the shine of underwater cameras. John says "Maori octopus occasionally attach themselves to [camera] rigs, whether through aggression or simple curiosity is unclear. The remedy seems to be to carry the rig with attached occy out over an open patch of sand and leave it there. The occy apparently feels vulnerable and will eventually drop off and head back to its lair, leaving your rig behind. Of course, if the occy is big and your camera is small...". Good tip, John!

Weedy Sea Dragon

As with many members of the seahorse family, it is the males who carry and care for the eggs while they are developing. Towards the end of the egg maturation period, they become covered in algae. Scientists believe this helps to camouflage the delicious looking red eggs from would-be predators, but the way in which algal growth is maintained on the eggs but not the body of the adult seadragon itself remains a mystery…

(Pic #2 from Keith Martin-Smith, downloaded here http://www.bbc.co.uk/nature/13373755)

Cuttlefish

Undoubtedly one of the smartest and most charismatic animals on the reef, cuttlefish are often very interactive with divers. Like octopus, they will flash through their colour ranges and "pinch" their skin into various different shapes depending on whether they are trying to threaten or mate with you (the ability to make this distinction is an important life skill). Often when encountering a big male cuttlefish, he will adopt a "wiggly tentacles up" pose. I always imagine it as the "love pose" – sometimes the tentacles will curl over at the tips to form a rough heart shape (see the cover pic of this mag). When I see this, I always like to think he is signaling his fondness for me, but apparently this is actually a defensive pose to make him look larger/more threatening. It doesn't stop me trying to communicate my affection though.

Sea Monsters - Globsters

- by Mike Jacques

It seems to be a global thing to find bits of unidentified stuff on a beach and proclaim the discovery of a sea monster. The spoilsports usually say that the items are just chunks of half-eaten whale blubber.

This desire to inject our lives with more mystery has grown into a bit of a phenomenon in the blogosphere and Tasmania seems to be the Australian epicenter of "globster" sightings. There could be something strange in the water, or perhaps it's just in the water supply. Sightings are usually of a fibrous mass. Could these sightings be of undescribed deep water species?

In August 1960, Ben Fenton, Jack Boote, and Ray Anthony were rounding up cattle near the Interview River in western Tasmania. They came across a large carcass. It was 20 feet long and 18 feet wide. Although Fenton tried to get people interested in the carcass, nobody examined it until March 1962. Then Hobart businessman G.C. Cramp funded an expedition consisting of Bruce Mollison, Max Bennett, L.E. Wall, and J.A. Lewis. Between the time of its discovery and the expedition, the carcass drifted northward with the tide. Fenton said that the carcass had "no smell, no sign of decomposition, and the skin was as hard as ever."

However, Boote said, "By the time they got there, the thing had decomposed. According to *The Mercury* (of Hobart), "a strong acidic reek came off the flesh, very similar to battery acid, and dogs and horses were unwilling to approach it."

Nobody on the team could identify the carcass. A description of it appeared on March 9, in *The Mercury*:

> *"ABOUT 20ft. long, 18ft. wide and about 4 1/2 ft. thick, with an estimated weight of between five and 10 tons. ... The part exposed was hard and rubbery and in an extremely good state of preservation. ... The party described it in general outline as like a huge turtle, without appendages. It was initially covered with fine hair, described by stockmen as being like sheep's wool, with a greasy feel. ... The animal had a hump of about four feet in front and tapered gradually to about six inches to what they presumed to the back. There were five or six gill-like hairless slits on each side of the fore part. There were four large hanging lobes in the front, and between the center pair was a smooth, gullet-like orifice. The margin of the hind part had cushion like protuberances about 2ft. wide by 18in. deep, and each of these carried a single row of spines, sharp, and hard, about as thick as a pencil and quill-like. There was no appearance of eyes or other organs. ... They made a deep incision in the high part and encountered a resilient flesh which appeared to be composed of numerous tendon-like threads welded together in a fatty substance. At no stage in the investigation did they encounter any bone material ... It was obviously extremely durable and had withstood the weather particularly well.*

From a mention in a small local paper the "globster" went global. Over the next 10 days, the news was picked up throughout the world. One scientist, A.M. Clark, speculated that the carcass was just a giant ray. Ivan T. Sanderson came to a more obvious conclusion, and suggested

that it was from outer space. Before long, questions were being asked in the Australian Parliament. The government decided to mount another expedition.

This expedition consisted of local scientific identities John Calaby, A.M. ("Mick") Olsen, Eric Guiler, and W. Bryden. None of the scientists on the original expedition were included on the government's 2 day expedition. On their return, they submitted a report to Senator John Gorton. Several of this team's observations contradicted those of the earlier expedition. They said that the carcass was 8 feet long, 3 feet wide, and 10 inches thick. They also did not find any spines. The government's team said that, "it is not possible to specifically identify it from our investigations so far. But our investigations lead us to believe that the so-called monster is a decomposing portion of a large marine animal. It is not inconsistent with blubber." However, later that day, Senator Gorton declared, "In layman's language, and allowing for scientific caution, this means that your monster is a large lump of decomposing blubber, probably torn off a whale."

In March 1965, another globster would be found, but this time in New Zealand at Muriwai Beach. It was 30 feet long and 8 feet high. The head of the zoology department of Auckland University, J.E. Morton, said, "The object has a tough quarter-inch thick hide. Under this is what appears to be a layer of fat, then solid meat. Hair four to six inches long covers its length. Cut from the hide and washed clean, the hair has a soft wooly texture."

According to J. Robb, the creature was not covered with hair, but rather fibres of connective tissue. This was, in Robb's opinion, the remains of blubber, and the carcass was a whale, possibly a humpback whale.
In 1970, a second Tasmanian globster washed up. It was discovered by the same Ben Fenton who was connected with the 1960 find. It was found a few miles south of Sandy Cape.

All of these carcasses have several things in common. All of them were "hairy" or fibrous. They were white or a similar color. They were difficult to cut. If any tissue samples were ever analyzed, they were found to be made of collagen. Collagen is found in both squid and in the internal organs of whales.

NEW SIGHTING! – The South Arm Globster

I recently found a very similar thing on Hope Beach. It was a lump of pale and fibrous material. It does seem just like the reported globster sightings!

But before you get your hopes up, I can reassure you that these are the decomposed remains of a juvenile humpback whale that stranded there some months earlier. Sadface.

Supertrawlers, Science and the Media

- *commentary by Mike Jacques*

The Supertrawler may have gone away, but it has left some unanswered questions. Why did the scientific community's information appear to have little impact on the debate? Does this mean marine science is no longer respected?

We ARE science savvy

The short answer is "no, it doesn't mean that", we still respect science a lot more than most sources of information. The long answer, however…

A recent Victorian Government survey shows that only a minority of people are totally disengaged from scientific messages. While 50% of the population may be functionally illiterate by most modern measures, not even these people are necessarily negative about science.

Most of us are reasonably science savvy and responsive to a well-framed scientific message. Over half of the Victorians surveyed actively search for information about science and technology, a majority do so at least weekly and not always because of their work. Many are simply curious, or like to understand how new developments will impact on them. We still believe that scientists are impartial and the best people to explain the impacts of scientific and technological advances.
We are also getting better at understanding science news. The proportion declaring that the information they find is hard to understand has declined significantly to 23% (from 32% in 2007). Google and other internet search engines are the predominant tools used to obtain science and technology information.

Six in ten Victorians believe that scientists are trustworthy. Industry based scientists tend to receive lower levels of trust than those who work for public institutions. The qualitative research showed that where a lack of trust in scientists exists, it tends to be the perceived influence of money that fuels these reservations. In March 2011, the Australian Science Media Centre noted that science is increasingly well represented in news and current affairs programming, and noted an increase of over 50% in the use of scientists in the news media.

We are a very science aware population and scientists currently hold a uniquely trusted position, but that is shifting. Dr Craig Cormick refers to our present situation as "a time of rapidly changing sources of information and trust".

When does the message struggle to be heard?

We trust science, but only when it seems very certain…

There is a tendency – even among the more educated and literate – to want the headlines or the executive summary, and want to believe that this information is cold, hard, indisputable fact. The way that science is taught in schools seems to create the often false idea that science is a series of hard facts, with no component of individual interpretation or opinion. Although there can be strong consensus on many issues among scientists, this 'absolute truth' notion is a misunderstanding about how science operates. Scientific debate is actually supposed to be lively, and science is meant to encourage a contest of ideas. However, when this contest is played out in the media it is confusing for us and we just don't want to hear it.

An ASMC study also noted that scientific issues are now very likely to be picked up by the media only after the issues have attracted political interest. Media loves conflict as it excites the readers. Even if the media acts with altruistic motives, they will try to seek out two extreme sides of a story, thinking they are giving 'balance'. This can sometimes ignore the overwhelming majority of scientists who support a position and the fact there are often more than two extreme sides to a story anyway. Because we want to believe in the 'absolute truth' of science, we may react very badly to a negative story about science, eg, a story about a failed fisheries management regime. "People have an in-built negativity bias, one negative story may need four or more positive stories to counterbalance it". The trouble is that there is an increasing and bewildering array of negativity out there.

Tell us what we want to hear or feel

The human brain is responsive to any story that seems to confirm what we think we know and feel, and we hate to be told that we are wrong. Survey respondents "…were most interested in knowing that an application of science and technology aligned with their values". Studies have shown that factual content of stories can have a limited impact, and not be as effective as emotive stories when facts run up against a reader's existing biases.

We could point to heaps of examples of this in both sides of most environmental debates. We think we know the 'real story', and won't be told differently.

We don't trust science complexity

Science isn't trying to do things the way we like to read them, like a media story – short and simple. Science is driven by long deadlines, detailed peer-review of facts and spelling out very complex findings in detail.

This has led to a perception that science has its own elitist customs and rules. The use of unfamiliar language and jargon can make it seem like scientific discussion is designed to keep the general public away. This is especially problematic if you don't often read or read complex articles. There is a link between social literacy and science literacy.

The 35% of people who are totally disengaged with science tend to have a background of bad experiences with learning about science as they grew up, especially bad school experiences. They are much more likely to trust friends and relatives as credible sources of information ("uncle Bob reckons…"), often without reference to any kind of expertise. This is especially noticeable among older people.

Dr Cormick noted cryptically "science stories need to be primarily about other things than science". To a disinterested person we can't talk about the substance of science like statistics. It has to be focused more on why the issue is important and what the simple take home message is.

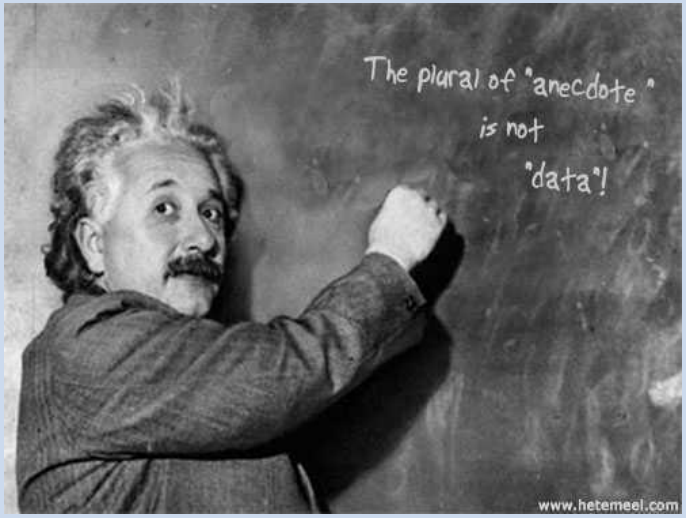
There has been a lot of talk about science education programs for journalists, and more media education for scientists. There is even talk about making scientists hold public communication skills as a condition of public research funding.

Too much information

The major change in the media is the rise of the internet and social media. Science savvy people can get access to lots of primary

information. Many will do it in a sophisticated way, and others will have less success with the blogs and other sources of information they can now see or create for themselves.

Younger people are more interested in being involved in decisions about science. It appears that their higher level of understanding of science and technology drives people to want more personal control and input. Not always such a great thing either if you believe the adage that 'a little bit of knowledge can be a dangerous thing'. You can overdo complex things that really need professional input.



There are a small proportion of people who, for one reason or another, can't or won't weigh up evidence in a considered way, but still have a internet portal to build up an audience for extreme ideas [*he means nutters-Ed*].

Science institutions are still grappling with ways to get a firm presence in the 'rough and tumble' of social media. Already, many are using Twitter and Facebook, to post articles or deliver news to a mobile phone. There are some concerns about the value of science that has been trimmed to 140 characters or less, but it could trigger a person to go to a link for more detail.

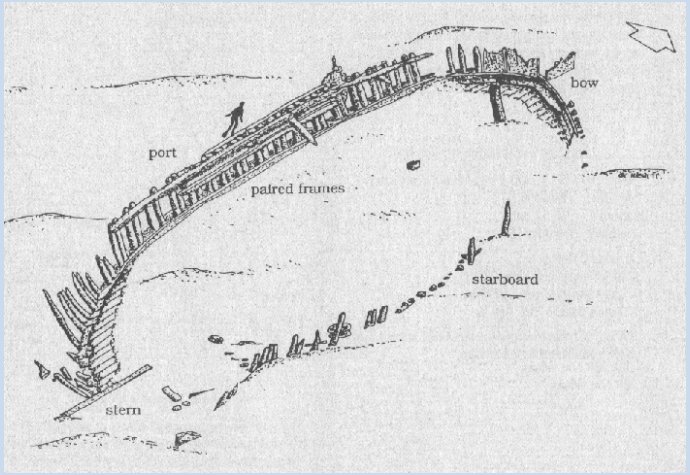
The issue seems to be to provide easy-access information that is trusted, as people will otherwise simply seek out the information that conforms with their existing values and biases. Some of it is total c**p! According to Peter Pockley, scientists can only retain a high level of trust if they are brutally honest and avoid massaged media releases. These days we can spot 'spin', self-promotion and twee sincerity a mile away. The reporting "…should not be seen as working for the glory of the scientific establishment and institutions." "The days of the breathless "Gee Whizz" style of science journalism needs to be replaced by regular doses of "Watchdog" reporting on scientific affairs, issues and social and political implications."

The thrust needs to move to a more simple, honest and direct style that is designed to encourage informed debate and build confidence in the message rather than the methodology.

(HERITAGE) FEATURE - VIC

The Wreck of the "Clarence"

Depth: 4-5 meters
Longitude : 144"43'16" east latitude : 38" 12'14" south



The wreck of the "Clarence" is in the news as it is currently being excavated by a team from six countries under the leadership of the University of Western Australia. Fickle weather has been hampering the work.

The Clarence was a 67-ton, two masted wooden schooner measuring only 50ft. It was built in 1841 on the Williams River in northern NSW. On 2nd September 1850, the Clarence was carrying a cargo of 132 sheep from Melbourne to Hobart when the anchor cable broke and it blew ashore on a sandbar between Coles and West Channels, about two miles south of St. Leonard's in Pt Phillip Bay Victoria.

In 1982 the Maritime Archaeology Association of Victoria (MAAV) discovered the wreck. It is the best-preserved example of an early Australian built schooner found in Australian waters. The basic hull remains and on a good day, the wreck is clearly visible from the surface.

A protected zone has been declared around the Clarence wreck site to stop boats anchoring over the vessel. Though the site is heritage protected for a 200m radius, fishermen have long risked prosecution for its whiting.

Recently, a 60-strong team has been raising, recording and re-burying artefacts and fragments from the wreck. Revelations have included that it was carrying an unusual ballast of clay.

The Clarence project recording technology is at the cutting edge and includes the use of X-rays. Objects are returned to the sea bed packaged in geotextile and shadecloth then covered with sand. The walls of the wreck are now protected by sandbags to help prevent further degradation from boat anchors.

Explorers and their early Marine Life Observations

Part 2 – End of the 'bromance': Bass & Flinders, post 1800

In March 1800, Flinders sailed for England to agitate for a new voyage of discovery. He was selected to command H.M.S. *Investigator*, and was ordered to explore in detail an unknown part of the southern Australian coastline from the head of the Great Australian Bight to the Victorian border.

Flinders sailed on 18 July 1801 and sighted Cape Leeuwin on 6 December. On 28 January 1802 he landed in Fowler Bay S.A. and then continued making landings along the coast. He seemed to be taking the ultimate tourist route, seeking out the most exotic looking spots, "in order that the naturalists may have time to range about and collect the produce of the earth". He charted the coastline with great accuracy and named most of the remaining prominent features of coastal Australia. In February he found the Spencer Gulf, Kangaroo Island, and the Gulf St Vincent. Then took the time to chat with the French explorer Baudin, that he bumped into at Encounter Bay. Then having carried out his mission he headed for Sydney. On the way he made another brief landfall at King Island and the Kent Group, but it must have been 'old hat' by now and he made few comments.

After overhauling the ship, Flinders sailed north to make a detailed survey of the Queensland coast and the Gulf of Carpentaria. Soon after passing through Torres Strait, the *Investigator* was leaking badly she was driven ashore on sandflats for repair. She turned out to be rotten through and through. He had to abandon his survey of the Gulf and run down the W.A coast instead. He rounded Cape Leeuwin and, after navigating the Bight in winter, brought his leaky, rotten, old ship safely into Port Jackson on 9 June 1803.

That year his friend George Bass, also set sail, but from Sydney Town on a commercial voyage in his own ship, the "Venus" [*not the one from the infamous sea shanty*]. He was sailing for South America, into hostile Spanish waters. All aboard were never seen again. Reports surfaced that George Bass had been captured and forced to work as a slave in the silver mines of Peru. These reports were never verified and he may just have died out in the lonely expanses of the Pacific during a storm. Flinders had plenty more smashing adventures left in him, but he needed to return to England to garner resources for a new voyage. He embarked on the *"Porpoise",* but she was wrecked. The replacement ship was damaged and forced into Mauritius. France and Britain were at war, so the French imprisoned him. Years of prison life sapped him of his remaining strength. He wasn't freed until 1810. Returning to London in very poor health, he still managed to complete his book, *"A Voyage to Terra Australis"*. Matthew Flinders died aged 40 years, on the day his book was published.

Flinders suggested the name "Australia" for the island continent, the name was adopted in 1824. Just about every major port in Australia got a visit from Flinders on one of his voyages and just about every maritime heritage buff has an annual re-enactment in their home town. There is a Bass and Flinders Museum at George Town in Tasmania including a replica of the "Norfolk", one of the tiniest boats that have ever tried to navigate Bass Strait. Here you can get a first hand appreciation of just how dangerous the voyages really were, and what a simply smashing, adventure-packed bromance it really was.

Flinders and the pelicans of Kangaroo Island

On Flinder's second visit to Kangaroo Island in 1802 a longer stay was made. The ship arrived on April 2nd, and did not leave again till the 7th.

Very few Aboriginal people were seen and these only through a telescope. More wildlife was seen at Kangaroo Island compared with the sparse and arid Gulf of Carpentaria region. Thirty emus were observed on one day, kangaroos were plentiful. *"Never perhaps has the dominion possessed here by the kanguroo been invaded before this time."*

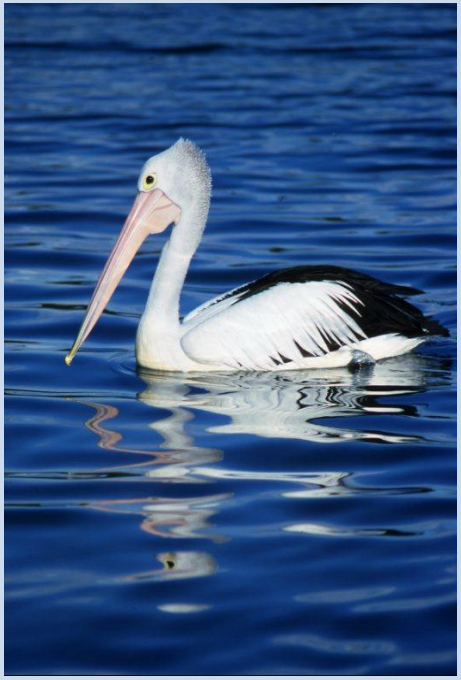
A large colony of pelicans were seen on the island's eastern lobe, causing the name "Pelican Lagoon" to be noted on the chart. He saw a untamed nature everywhere, but Flinders intuitively understood how fragile nature was. He recorded his feelings, that this natural idyll would not long outlast the arrival of Europeans,


VIEW ON KANGAROO ISLAND.
(Reproduced from the engraving in Flinders' Journal, after Westall's drawing.)

"Certainly none more likely to be free from disturbance of every kind could have been chosen, than these inlets in a hidden lagoon of an uninhabited island, situate upon an unknown coast near the antipodes of Europe; nor can anything be more consonant to the feelings, if pelicans have any, than quietly to resign their breath whilst surrounded by their progeny, and in the same spot where they first drew it. Alas, for the pelicans! their golden age is past; but it has much exceeded in duration that of man."

In 1979, biologists approached private land holders in the region and explained their need for a secure base and 150 Hectare of private land along the northern shore of Pelican Lagoon has been set aside for research. Free from rabbits and foxes, the lagoon permits field research under near-pristine conditions.

The Australian Pelican



Pelicans are widespread on freshwater, estuarine and marine wetlands and waterways including lakes, swamps, rivers, coastal islands and shores. The Australian Pelican is found throughout Australia, Papua New Guinea and western Indonesia.

Pelicans are highly mobile, searching out suitable areas of water and an adequate supply of food. Pelicans are not capable of sustained flapping flight, but can remain in the air for 24 hours, covering hundreds of kilometres. They are excellent soarers and can use thermals to rise to considerable altitudes. Flight at 1,000m is common, and heights of 3,000 m have been recorded. By moving from one thermal to the next, pelicans can travel long distances with a minimum of effort, reaching air speeds of up to 56 km/hour.

Pelicans mainly eat fish, but they are opportunistic feeders and eat a variety of aquatic animals including crustaceans, tadpoles and turtles. They readily accept 'handouts' from humans.

A flock of pelicans works together, driving fish into a concentrated mass using their bills and sometimes by beating their wings. The fish are herded into shallow water or surrounded in ever decreasing circles. The bill and pouch of pelicans is sensitive and this helps locate fish in murky water. The pouch does not function as a place to hold food for any length of time. Pelicans plunge their bills into the water, using their pouches as nets. The bill can hold up to 13 litres. There are sightings of pelicans drinking by opening their bill to collect rainwater.

During the courtship period, the bill and pouch of the birds change colour dramatically. The pouch becomes bright pink, while the throat region turns yellow. Parts of the bill change to cobalt blue. To show off to females, the males may pick up small objects, like sticks or dry fish, which they toss in the air and catch again.

The nest consists of a scrape in the ground prepared by the female. Both parents share incubation. Pelicans are colonial breeders with up to 40 000 individuals grouping on islands or secluded shores. Wild birds may live between ten and possibly 25 years.

Pelicans are very cute, but they are wild animals and by necessity, are aggressive. The first-hatched chick may attack and kill its nest mates. During periods of starvation, pelicans have been reported capturing and eating seagulls and ducklings. The gulls are held under water and drowned before being eaten head first. Pelicans will also rob other birds of their catch. So feed them fish frames at the boat ramp by all means, but watch out for that hooked bill when they want more, they bite and it hurts.

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/marinelife.php