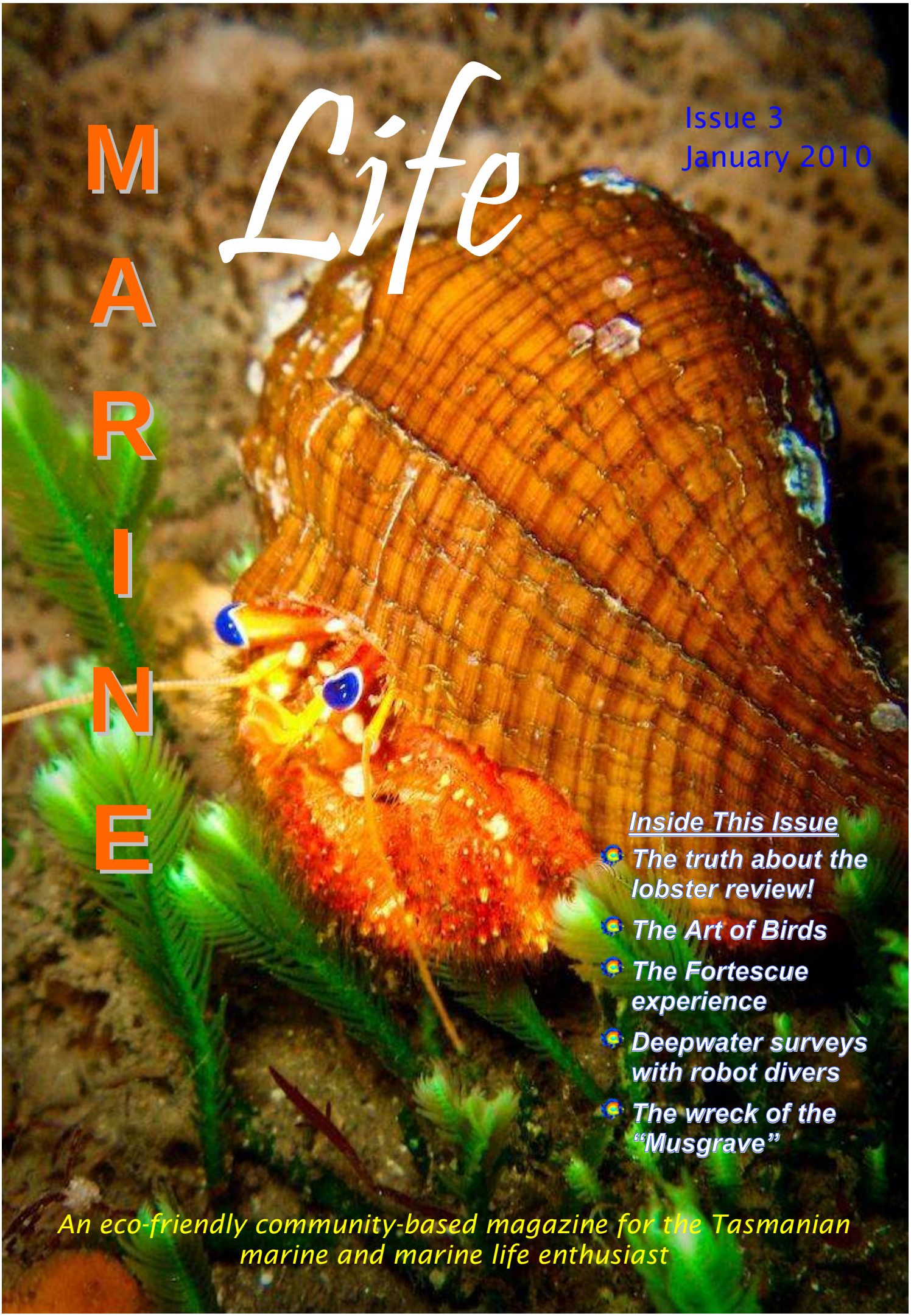


MARINE Life

Issue 3
January 2010

Inside This Issue

An eco-friendly community-based magazine for the Tasmanian marine and marine life enthusiast

Our goal

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

Our Team

Not so cuddly

Editor in chief and author of "Dive Tasmania". According to a reader, who shall remain anonymous (Rebecca), "You don't look at all like a koala".

Super Em

UniTas honours student in marine science. Powerhouse of work, can do three days of survey diving and still edit a full edition in half a day.

The Prince

Our man in the North. Devil may care renaissance man. Romantically linked at one time to Princess Margaret's corgi.

Phil

Our man in the North West. Former KGB double agent and sometimes drinking chum of Boris Yeltsin. Hey, tovarich, where are my articles.

Marine LIFE

Underwater this issue

The big stories…

Tarfish Response to Crayfish Review

TARFish is the independent, government recognised peak body looking after the interests of recreational marine fishers in Tasmania.

The rock lobster fishery has continued to show worrying signs that the fishery faces a number of challenges which are expected to have a detrimental effect on the future sustainability of the fishery unless measures are taken to address the range of issues. The state government commenced the review of the Rock Lobster Management Plan in April 2009 and will be holding public meetings commencing in March 2010 to hear people's views, concerns and ideas on how to address the broad range of issues facing the industry.

1. Recreational fishers have indicated to TARFish that they want to have a fair expectation of catching a rock lobster when they go fishing. Tasmania's 128,000 recreational fishers provide significant social and economic benefits to nearly every coastal community around Tasmania. Recreational rock lobster fishing licences have consistently increased each year since 1996 which means that to ensure a future share of the fishery is allocated to the expected new entrants into the recreational fishing sector TARFish will be pursuing an increase in the resource allocation to the recreational sector from 170t to 250t per annum. The annual resource allocation is not linked to the bag and possession limits that apply to recreational fishers.

2. Some stakeholders in the fishery have indicated that the method used by TAFI to estimate the annual recreational rock lobster catch needs review. To that end TARFish have already prepared a project proposal, which is currently with the Minister for Primary Industries, Parks, Water and Environment, to undertake an independent scientific peer review of the annual recreational rock lobster catch method. This project, if approved by the minister, will be funded by an allocation from the annual marine fishing licence fee revenue collected by government.

3. TARFish, like other key stakeholders in the fishery, remain focused and committed to supporting a sustainable fishery for future generations of fishers. TARFish will carefully consider the range of management measures available to address the broad spectrum of issues facing the fishery. TARFish will actively participate in open discussions and forums to ensure recreational fishers are aware of the information, issues and possible solutions as the Rock Lobster Management Plan Review proceeds in 2010.

"Speaker's Corner"

It's nice to see the readers responding to the last gossip item I had about cray fishing. If you'd like to speak your mind we have a new section where you can vent your spleen, float a conspiracy theory, or hopefully come in with a reasoned debate. While we like robust debate, just remember to be "hard on the issue and soft on the people". - Ed

Response to Tarfish Comments on Crayfish Review

While I respect the fact that Tarfish's role is to represent the genuine views of its member fishers, I personally cannot see that the Tarfish response adds much to the debate. To argue that a group deserves to increase their catch in a time of declining stocks seems like unfortunate timing at the very least. Is the argument that recreational fishers have an 'as of right' priority access to a community resource, so as the stock goes down, so too does everyone else's share of the catch? Its just seems like the old 'catch maximisation' mantra that you hear all the time from every participant in the fishery, which routinely ignores the underlying issues with the stock. It also seems a bit pointless as the current stats show that the recreationals aren't getting their full 170 tonnes anyway. What is of more interest is where the recs are catching them, rather than the total numbers.

You also hear participants go on a lot about how we can't manage the fishery until we get the science right. We already have Dr Jeremy Lyell's stats, which you can pick holes in if you like, but they seem to provide the basic trend information we need to act. More would be nice but we needn't wait until there is the money to have a fisheries officer go out with you every time you get the dinghy wet, or are we really saying that we don't LIKE the science so try again.

One interesting question this discussion does raise is what exactly is a fair split of the catch between participants? At the present time there is an informal agreement that recreationals will get only 10% of the catch, the professionals 90%. I'm not aware of any logic that went into this assessment, was it just a politically saleable idea at the time? Are Tarfish suggesting that the social and economic benefits of recreational cray fishing are so high that recreationals deserve more resource, rather than the State settling for the 'paltry' returns that professional crayfishermen earn. I'm not sure exactly how the figures stack up, but I'm confident we can get some woolly stats from both sides of the argument. I'm also reasonably sure that the export earnings from professional crayfishing are not to be sniffed at and it could be a tall order to argue they aren't at least as important economically. Perhaps Tarfish are talking about Gross Domestic Happiness rather than Gross Domestic Product, in which case I'd like some extra quota for Aboriginal fishing and MPAs while we are at it. There you go, I mentioned the environment. I thought we had forgotten about that completely.

The Skua

Postgraduate Profiles

Jan Seiler

"Non-extractive monitoring of biodiversity on temperate Australian deepwater reefs: using advanced vision-processing techniques to develop and test reliable biodiversity metrics"

Jan's seven-month visit to CMAR Hobart in 2007 culminated in the conception of a PhD proposal that would compare different non-extractive imaging methods and assess their strength and weaknesses to capture benthic biodiversity metrics – especially for rocky reefs beyond scuba-diving depths.

Current progress - Since August 2008, Jan has been analysing AUV–borne (Autonomous Underwater Vehicle) stereo stills and multibeam sonar data, BRUVS-borne (Baited Remote Underwater Video System) video footage, and towed camera platform and ROV video footage. Since almost all vehicles provide stereo imagery, precise quantitative assessments of species abundance will be possible. He will develop and compare several techniques for their effectiveness, including cost-effectiveness, to document and monitor benthic diversity.

Jan taking footage of an emperor penguin colony in Atka Bay, Antarctica for a daily online diary documenting the R/V 'Polarstern' expedition ANT XXIII/8 in 2006/2007.

Jan completed a BSc in Applied Marine Biology at the University of Wales, United Kingdom, which gave him a broad exposure to applied marine science i.e. habitat mapping, fisheries management, and aquaculture. During semester breaks, Jan spent his time on research vessels (Clam Survey 2005, NOAA, USA; MATSIS Cruise 2006, UK/Ireland; RV 'Polarstern' 2006-2007, Antarctica) and laboratories (Alfred-Wegener Institute 2005, Germany; CMAR 2007, Hobart, Australia) around the world to further his fieldwork and laboratory expertise, and apply knowledge acquired during term time. Towards the end of his undergraduate studies, he focused on imaging techniques to study benthic communities. This work involved being part of the various steps such as deployment, image acquisition, video scoring, and data analysis, mainly ROV (Remotely Operated Vehicle) video transects off the Antarctic Peninsula and stereo towed video camera platform footage off the coast of Western Australia.

Bias in Selection of MPAs

Information taken from the EcoTone blog

A new study has recently been published using long-term data sets generated by TAFI scientists and the Reef Life Survey organisation showing that human interests are having a disproportionate impact on the selection of marine protected areas, or MPAs, which are meant to protect biodiversity in marine ecosystems. Their paper shows a consistent bias in Australian and Tasmanian MPAs toward areas with little commercial resource value.

Volunteer diver undertaking fish transect in the Abrolhos Islands, Australia. Credit: G. J. Edgar.

The study, led by Graham Edgar of UTAS/TAFI, compared long-term trends for so-called "no-take" marine protected areas, where fishing is off-limits, to nearby marine areas that were unprotected and subject to fishing. The 14 reef communities spanned across southern Australia and Tasmania. He and his team surveyed the areas - by diving to the reef and visually inspecting along transects — from 1992 to 2008, collecting data on the presence and abundance of predatory fish, medium-sized fish and invertebrates. As Edgar says, the declaration of the MPAs in 1992 provided a unique large-scale natural experiment.

> "Experiments of this kind are rarely undertaken at scales greater than a few square meters because of the difficulties in manipulating larger areas of seabed using scientific dive teams," says Edgar. "The best opportunity to expand such experiments to regional scales is through monitoring changes that follow declaration of MPAs, because in each MPA we are effectively removing human predators from a patch of seabed."

At the outset of the experiment, Edgar and his colleagues found that the MPAs had lower fish biomass (total estimated mass of fish in the area) and density than other reef areas nearby. Although these MPA became more diverse than their unprotected counterparts over time, Edgar wonders why they had lower biodiversity in the first place.

> "When the boundaries of MPAs are drawn up, fishers and other stakeholders try to ensure that areas used by them are excluded from protected zones. This is often publicized as a 'win-win' situation because the MPA is declared with little impact on the activities of fishers, who continue fishing in their preferred areas," Edgar says. "However, MPAs located in areas with little resource value also have relatively low value for biodiversity conservation because human activities continue largely unchanged and the community types most threatened by fishing remain unprotected. This bias seems to be widespread worldwide."

Edgar says that to safeguard the full range of marine community types, some sanctuary zones need to be located in areas that are heavily fished.

> "We cannot safeguard marine biodiversity by declaring sanctuary zones only at sites with little resource value," he says. "Heavily-fished areas include the most highly threatened community types, so also need protection in MPA networks."

The article can be publicly accessed here.

The Crayfish Debate – I got it wrong

Well it seems that if we were after reactions from readers it's always a safe bet to bring up fishing, especially if its about possible limits on the way people fish. In the process we did what no professional journo would do and quoted a rumour. Luckily we aren't professional journos, so we will probably keep quoting rumours since its better they are out in the open where they can be moderated, than silently doing the rounds misinforming everyone. Thankfully, Caleb has come back to us with the "Full Monty" on the background to the recent professional quota cuts in order to set the record straight.

Dear Michael,

I'd like to respond to an article in the last edition that discussed the recent changes in rock lobster management. Some of the statements weren't factual and I wanted to set the record straight.

The article stated that the commercials accepted a cut of 20%. There's a subtle error here, which is that the commercials did not just **accept** this cut. They **proposed** the cut then made it their official position through a majority industry vote. There was no government position on the table. It's a rare and commendable event when a commercial industry takes a long term view and responds so decisively. I personally think this is the most significant act in terms of marine biodiversity conservation I've seen because the harvest is reduced by a massive 323 t compared to 2008/09. Contrast this with MPAs where a small amount of stock is involved with no reduction in catch or net gain in biomass (because catch is displaced, not removed). The Tas. industry action is also commendable because it's got industries in other states thinking about managing their stocks and ecosystems better for the long term. I've been asked to explain the Tasmanian process to the Morton Bay Trawl fishery, SA rock lobster, and Western rock lobster.

It's true that the commercials have asked the recreationals to take a similar cut. As I write, this debate continues and is unresolved. It seems to me there's some confusion about the relative impact of the sectors. Commercials obviously have a much higher catch than recreationals – but not in the shallow areas off the east coast. Along the east coast, in water less than 10 fathoms, the commercial catch was around 100 t last year – comparable to the recreationals. This means that if recreational fishers want to alter the probability of unsuccessful trips (about 50% at present) then they need to do more than just accept this cut in commercial catch. Also note that recreational catch is a significant part of the harvest in areas affected by urchins.

The article in the last issue also stated that the commercials chose their quota cut of "*20% because they weren't catching that amount of their quota anyway*." This was wrong as the commercial catch in the previous year was 1492.2 t or 2.02% below the quota, which is about the size of their normal carryover. Their proposal for a 20% cut is a real and substantial reduction in income and I think their action should be applauded, not dismissed.

The article said "*there are a few of the usual theories around about the motives for the professionals".* In fact the motives were clearly articulated in their voting papers: (i) current low recruitment, (ii) the need to be less vulnerable to changes in recruitment in future, (iii) the stock may be changing with climate change, (iv) they've (finally!) recognised that costs are lower when catch rates are higher, and (v) urchin barrens.

The statement that "*a deeper cut was originally recommended by the science community and was rejected*" is also wrong but perhaps confused with 2008 when the science advisors recommended a 10% cut in the quota but industry argued for 3%. At that time industry wanted to hold off a year because they were in the midst of larger reforms, which we accepted and a 3% cut occurred. This latest 20% cut proposed by the industry comes on top of the 3% cut agreed in 2008 and has strong scientific support. My personal suggestion was actually to take smaller changes over a longer period but industry wanted to rebuild stocks faster.

In conclusion, please be supportive of the commercial action. Their cut in catch of 23% since the 2008/09 season shows a high level of stewardship and is a fantastic outcome for Tasmanian marine and marine life enthusiasts.

As noted in the last issue, management is being reviewed in the fishery through 2010 and this gives an opportunity for interested people to shape the future of this fishery.

Dr Caleb Gardner
Resource Security and Future Harvest
TAFI (Tasmanian Aquaculture and Fisheries Institute)

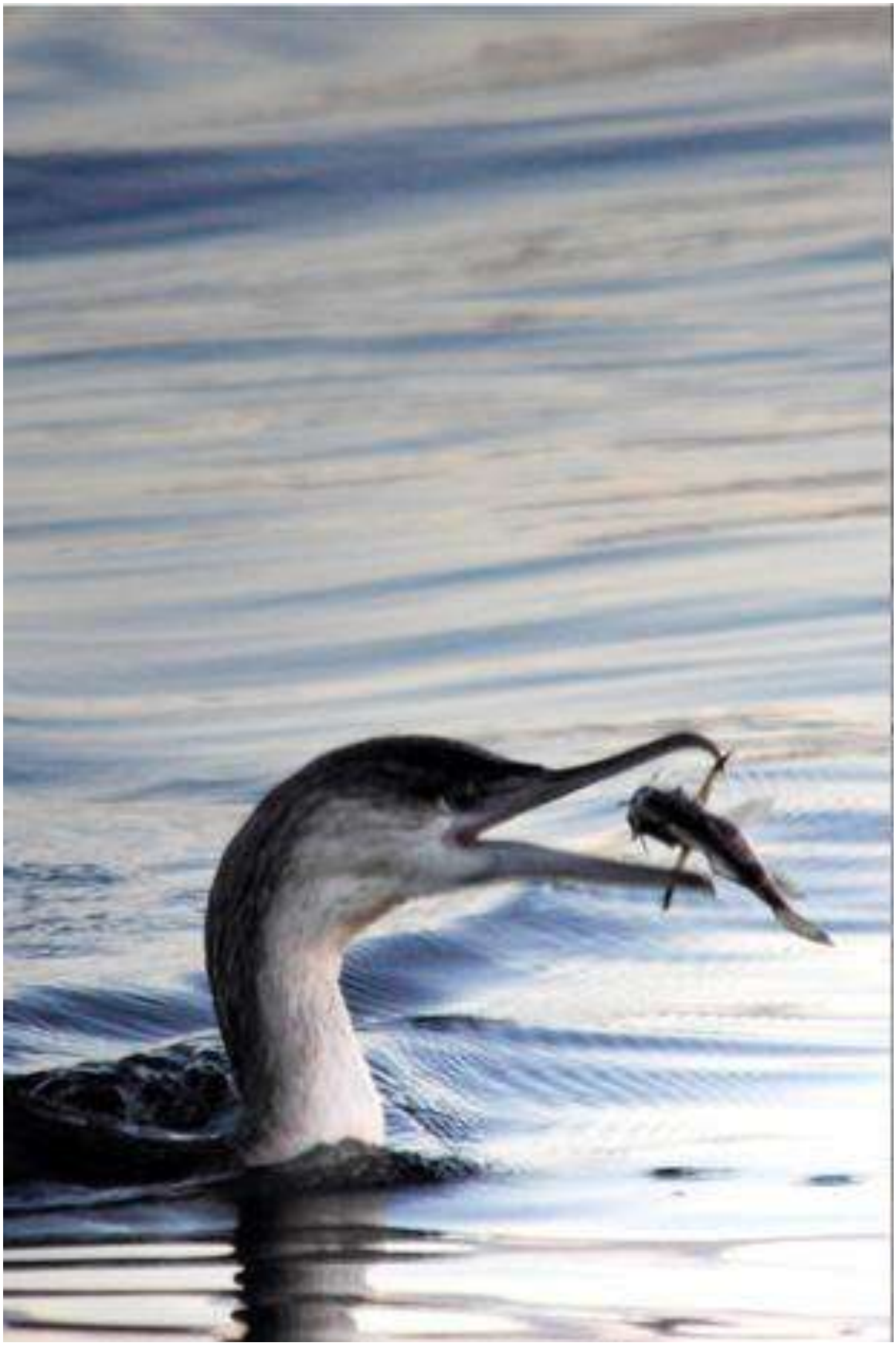
Some of our favourites from your portfolio

Presenting Nathan Giblin – "Lady Marion" Exhibition

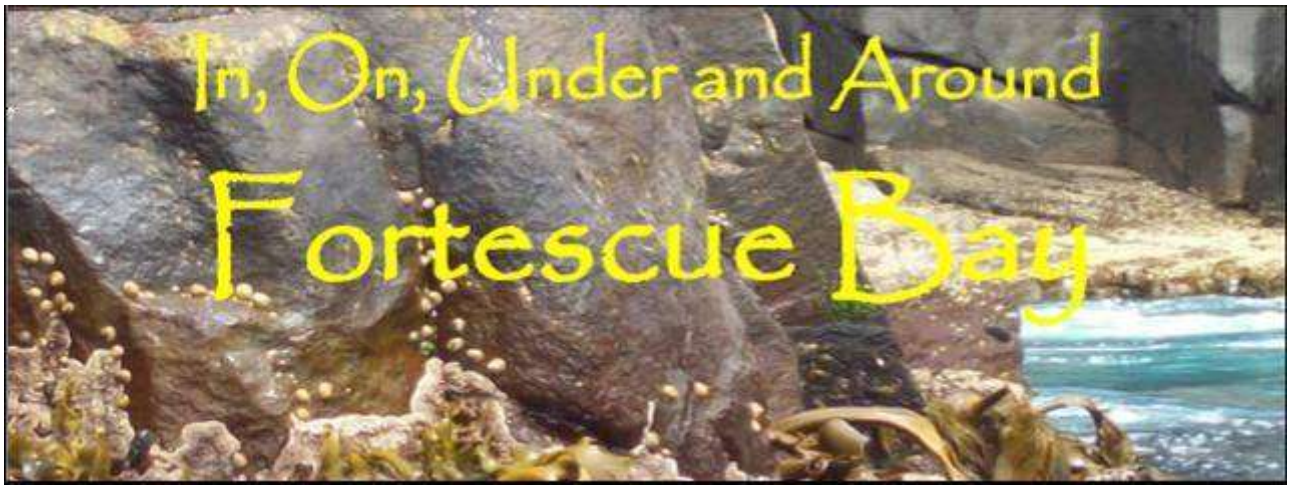
Marine life is on under, over and around us and defies a one-dimensional view of what is important and unimportant. If you ask a naturalist about the character of marine life you will get a picture of a harsh and competitive struggle to survive. The other side, the deeper meanings, have to be left to philosophy and art. The good thing about art is that it is what you want to make of it rather than what you are told to believe. In the skies we have a wealth of live as rich as that in the sea itself and Nathan has captured in a rejoicing way the daily struggle and artistry of this marine life. Nathan's photo exhibition will be at the Waterfront Café at Dunalley until 15th January.

shelter

Tide

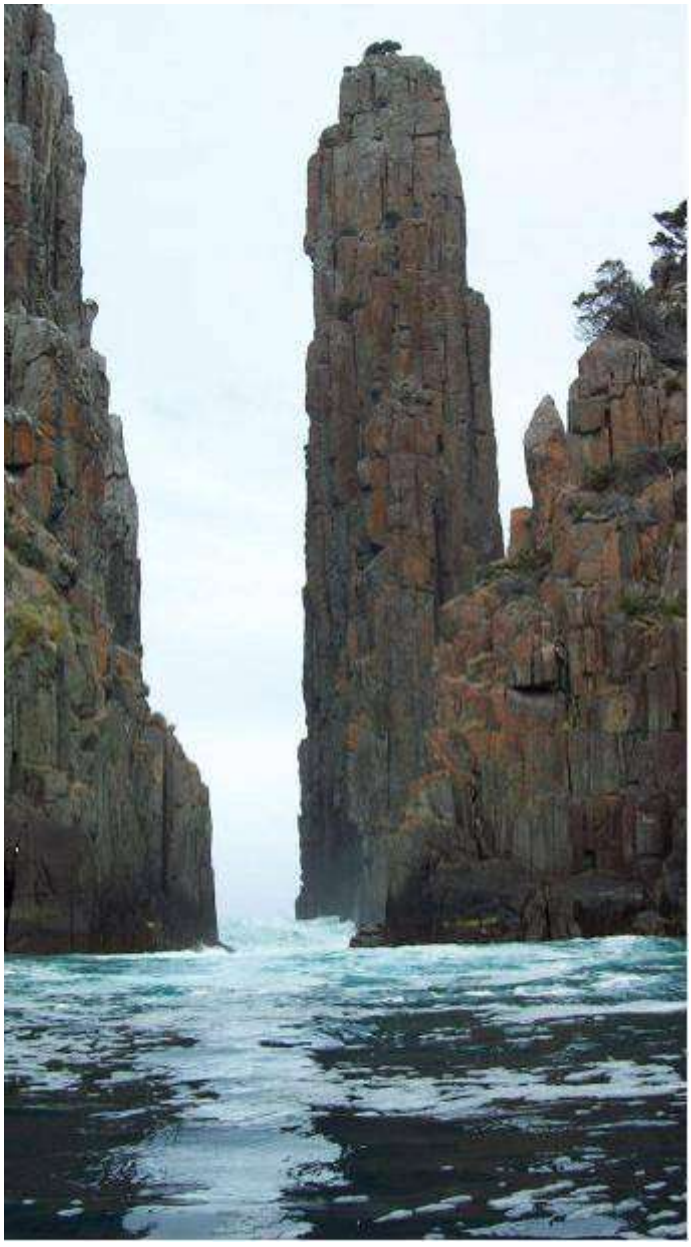


Last Requests



By Mike Jacques
Photos Alison Triffett, Mike Jacques and Richard Mason

One thing that focused my mind on the differences between growing up in Tasmania and elsewhere was a recent revisit to the "natural" wonderland of the Sunshine Coast. They were pile driving outside our bedroom window for a new boardwalk to increase the size of the one they built only 3 years earlier. To get away I went to my favourite snorkelling spot at Kings Beach, one of the few accessible inshore reef areas in SE Queensland, only to see a sign banning all scuba and skindiving in the area to make way for more speedboats.



Forget all the tourist brochures. If you have the spirit to tolerate some grey moments and the odd squally chill then you are already in the right place. Why settle for five stars when you can get a million.

Fortescue Bay is one of those rare things in Australia that Tasmanians just take for granted. A sheltered rock-strewn embayment that can inspire artists, yet is still occasionally devoid of people.

The Journey

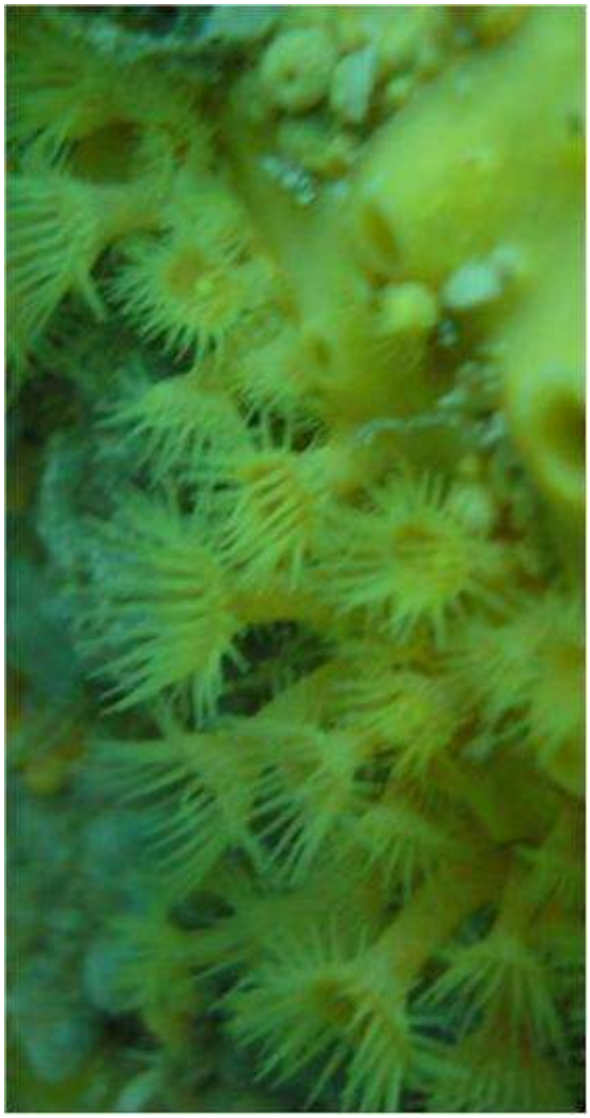
It's the done thing to test out your new boat trailer on the Fortescue Bay Road, a right of passage. The forest near the road has been marred by logging and wildfire. Its only when we get close to the park that you get the feeling of entering a really 'natural' place. The ramp and jetty still sit precariously by Mill Creek where the old 19th Century timber camp once stood. The jetty is built strong but it's just as temporary as the original jetty. We think we have licked the problem with big concrete blocks, but an easterly storm will one day wipe out even this hefty effort, just like it has all the others.

The visitor's areas have caused some tree clearing, but this has advantaged the pademelons, Bennett's wallabies and wombats that invade the camp grounds during the night. The park proclamation in 1999 has also encouraged people to leave their dogs behind. The population increase of marsupials has also to be attributed to feeding by visitors, which artificially increases their numbers and can lead to conditions such as lumpy jaw.

The camp grounds are choked with people in the key holiday periods, unlike the permanent deathly silence I enjoyed when I first visited in the 1980s. It is still bathed in shadowy damp light and the smell of untamed forest. Around the beach and lagoon there is white gum *Eucalyptus viminalis* and blue gum *E. globulus*. There is a small area of silver peppermint *E. tenuiramis* forest on dolerite south of the boat ramp. There are even ferny groves in the deeper gullies around the bay. At other points there is wet and dry stringybark *E. obliqua* forests, from which Aboriginal people would have woven their canoes in the days before European colonization.

Nudibranch sea slugs chasing each other in what is probably breeding behaviour.

The other Remnant Forest



Amy,9, is a budding petrolhead and wants to drive the boat. I hold the base of the tiller while she idles around the near the kelp forest.

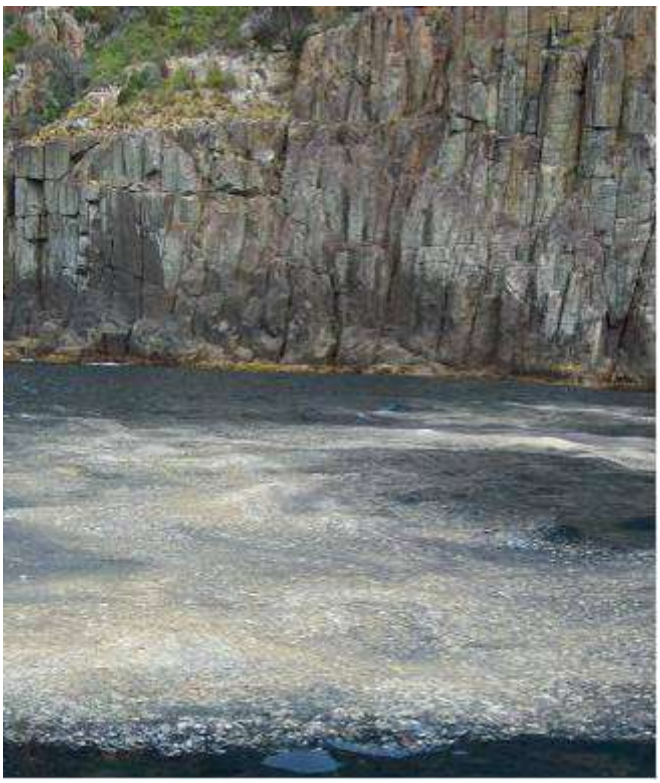
The loss of Tasmania's Blue Gum forests to logging has generated great debate, but when all the mighty kelp forests disappeared it raised only a fraction of the concern. Every marine-minded person can tell you that the kelp was so thick before, it was a menace to outboard motor water intakes. At one point in the mid 1980s it was actually hard to get out of the boat ramp because of kelp. Since then the vast kelp beds, sometimes stretching 20 metres up from the depths to the surface light have virtually disappeared all down the East Coast. The only resilient beds are now at Lagoon Bay and Fortescue Bay. Everyone has a theory, but probably the best one is that it's a side effect of global warming with the strengthening, but nutrient poor Eastern Australian Current (EAC) stunting the regrowth of these beds after storm damage.

A quirk of nature at Fortescue means I can still dive into this vast shadowy canopy. The reduced light encourages different species of seaweeds compared with the open reef and the shelter of the kelp fronds attracts schools of fish and the odd seadragon. This is one of the best shoredives in Tasmania. I pull out a camera and start to catalogue the creatures here, including a few recent arrivals that are starting to colonise Tasmania's reefs as the ocean warms. There are no climate change sceptics in my boat; we see it happening every day.

The tip of the Giant kelp frond divides out new kelp blades at the rate of up to a metre in extra height every day, at least when the water is nutrient rich and cold. Photo Richard Mason

Soon we have come across a NSW black urchin, *Centrostephanous Rogersii*, that is eating out many areas along Tasmanian's East Coast, especially at St Helens. The warming waters have allowed them to breed, but the absence of their main predator due to overfishing, big crays, has also advantaged these tourists. Worryingly a few urchins are already starting to nibble away at the kelp stalks. They mostly just eat down the juvenile algae, and when storms come, or the old kelp dies back naturally, they can graze down the bare areas into a permanent urchin barren. Fortunately we are at the edge of the EAC here, and the black urchin numbers are still relatively low.

Amy has been promised seals and even maybe a dolphin or whales. Only a week before a Southern Right Whale swam over and eyeballed my buddy and I while we sat looking downwards on the bottom oblivious to it all. This was despite the frantic efforts of our boat lookout to raise our attention.



On the way out we spot a swirling slick of decaying zooplankton and what seems to be fish eggs. Lacking a PhD in zooplankton, we can just steal a quick picture and pass on by.

We also see a white-bellied sea eagle *Haliaeetus leucogaster* Currently nest sites are known from Cape Huay and Bivouac Bay and Canoe Bay. Graceful, but way too high to photograph.

The Lanterns

"Oh, they are so cute". We stand off the Monument seal colony as the surf crashes through the opening. The ledges are packed with seals and Amy wants to take one home.

Australian fur seals are the most commonly seen seal species in Tasmanian waters with a total population estimate of approximately 60,000- 77,000. This is believed to be a fraction of their numbers in the 1800s before they were decimated for the fur trade. They are easily told apart from the rarer New Zealand Fur Seal by their larger size, smaller whiskers and the absence of ears.

The fur seals at the Lanterns are use to a daily visit from a tourist boat so they barely wake up these days. This male was sporting a large seal shaped bite mark which he covered to keep the flies at bay, assumedly dished out by another male during a breeding season contest.

Australian fur seals colonies are dominated by individual males defending harems of up to 30 females. They breed only in Bass Strait but are commonly seen on a number of haulout sites on the East Coast. Females produce one pup every one to two years, usually born during November to December.

Overall, it appears that the total Australian fur seal population in the region is increasing but mostly at the major Victorian breeding sites. The site near the Lanterns appears to have been recently reoccupied and was not listed as a haulout site even as recently as 2002. This site may not have been occupied since the 1800s.

Commercial gill netters and salmon farmers have complained of increasing damage being caused to nets by seals, who have adapted to net robbing as an easy way of getting a meal. Prior to the 1980s they were regularly shot by fishermen, but this appears to be decreasing. Very few fishers still call directly for a cull of seals, while about 10% of commercial scalefishers in a 2002 survey admitted to shooting seals damaging their fishing gear.

Canoe Bay

It's back over to the North West of the bay to Canoe Bay. Here there is a quiet cove that escapes most of the swell. A thriving bed of seagrasses, usually highly susceptible to pollution and disturbance are well and truly established in the shallows. The seagrasses look like acres of green underwater pasture and it certainly nurtures a few grazing marine animals and is an important nursery area for fish.

Why motor when you can paddle?

The shelter of Canoe Bay also attracted commerce. The area all around the bay has been heavily logged in the past with the first sawmill in the area starting at Walker's Creek in the late 19th Century. Little remains of that now. The most prominent relic of the past is the wreckage of the old dredge hopper the S.S. "William Pitt". She was built in England in 1904 and used as a self-propelled barge for dumping harbour spoil. In the 1930s B.T. Cuthbertson tried to set up a tuna freezing works in the bay but they were exposed to the damaging effects of easterly storms. In probably the late 1960's they bought the now derelict "William Pitt" and towed her around to be sunk as a breakwater across the mouth of the bay. A huge storm in the late 1970s smashed the facility and even lifted the old wreck off the bottom and moved it into her present position. A few bricks and house foundations are all that remains of the fishing venture.

The old lady has fallen apart gracefully. The algae covered structure set against the rugged backdrop of the bay has given her an elegance she never enjoyed in her sweaty, soot-stained working life. The slow collapse of her deck has also exposed the holds to dancing shafts of sunlight that illuminate a carousel of passing fish, making this a very safe and enjoyable snorkelling and diving spot. The wreck must be a popular angling spot too from the number of beer cans disgracing the bottom. Diving in we pass though the wreck and marvel at the light show. Once again a see a few things that shouldn't be there, Bass Strait fish like Mado Sweep and Scaly Fin.

Ashore and going for a walk this time we leave Canoe Bay and climb through the forest on our way to the penguin colony. The track is part of the walking track that hugs the coast from Waterfall Bay to Fortescue. The fit can keep on going out to Cape Hauy and even Cape Pillar. Our ambitions are modest, with the sounds of the forest punctuated by only a few groans of "are we there yet".

Penguin rookery

A little penguin *Eudyptula minor novaehollandiae* breeding rookery is located in the blue gum forest south of Canoe Bay. Most little penguins elsewhere seem to like tussocky coastal dunes, these penguins love the forest and hollow out burrows under the fallen logs. This is one of the few thriving onshore colonies, one of the largest remaining rookeries in southern Tasmania. The population is estimated to be about 200-500 pairs. Total Tasmanian population estimates range from 110 000–190 000 breeding pairs of which less than 5% are found on mainland sites. The parks website is doom and gloom about their future, but the penguins haven't been listening. I see them colonizing more areas at Bicheno and recently they have been reoccupying suitably fenced areas in the Derwent Estuary. Dogs are a constant threat.

The penguins aren't immediately visible, in fact its easier to use your nose and follow the scent of digested fish and guano. Be careful where you put your feet, the nests are close to the track and can be easily trampled by thoughtless pedestrians. We saw one penguin under a tree and Amy was thrilled.

The penguins usually spend the Winter at sea, where they fish by diving and swimming underwater. While diving they often reach depths of 30 metres and occasionally 60metres *(*the Greek word 'Eudyptula' means 'good little diver'). The penguins diet is varied but they predominantly chase school fish, squid and krill.

Between June and August male penguins return to the colony and start shouting noisy courting displays. The usual clutch of two eggs may be found as early as May or as late as October. In successful years, two clutches might be reared in one season. Breeding at Fortescue has been poor lately with penguins washing ashore dead from emaciation in recent years.

The penguin pair incubate in 1–2 day shifts. The other parent spends all the daylight hours at sea fishing to feed the young. At 5 weeks old the chicks are so big they come out of the burrows waiting to be fed and both parents have to go to sea to keep the food up to them. Within another 2 or 3 weeks they are ready to go to sea. Penguins live for about 6 years on average.

We can show you the photographs of our tentative explorations, but this is a place to experience rather than read about.

See you out there.

Survey of Deep-water habitats of South-eastern Tasmania

Per CSIRO website

So, what do our deep-water coastal habitats look like and what marine assemblages are associated with them?

While near-shore habitats have received considerable attention from researchers using SCUBA diving equipment, deeper shelf habitats (> 30m) that are logistically harder to survey have received considerably less attention. Offshore habitats, however, support numerous commercially and ecologically important species and may contribute substantially to the biodiversity of our marine ecosystems. Currently, this is an important gap in our knowledge and understanding of marine biodiversity in Australia that needs to be addressed.

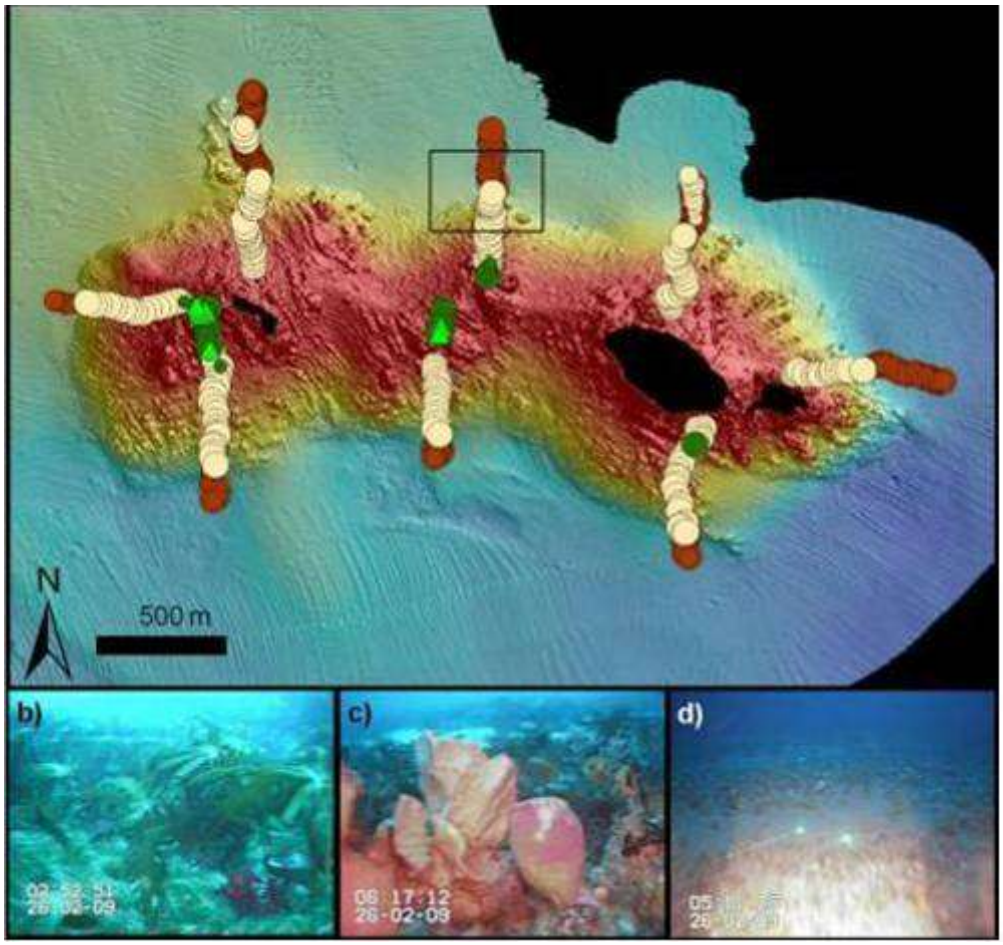
As part of the Marine Biodiversity Hub"s surrogacy program, a team of researchers from Geoscience Australia and the Tasmanian Aquaculture and Fisheries Institute undertook a multibeam bathymetry and underwater video survey of deep-water habitats along the South-east Tasmanian coast during February and March this year aboard the RV Challenger.

Marine Biodiversity Hub researchers Matt McArthur (GA), Neville Barrett (TAFI), Tara Anderson and Andrew Heap (GA) onboard the RV Challenger having just finished collecting seabed characterisations and video footage from the Hippolyte Islands off South-east Tasmania.

This research focused on acoustically mapping the physical structure of deep reefs using Geoscience Australia"s state of the art Kongsberg EM3002 multibeam system. The types of biological assemblages growing on, sheltering in, or swimming around these reefs were then recorded in real time along a series of video-transects that traversed these reefs. The towed-video was tracked across the seabed using a USBL (Ultra-short Baseline) system to enable video data to be co-located with the bathymetric maps. Further surveys were completed with the Integrated Marine Observing System (IMOS) Autonomous Underwater Vehicle (AUV) operated by the Australian Centre for Field Robotics out of the University of Sydney.

High-resolution bathymetric maps and video footage of these reefs identified a variety of physically and biologically complex features. The Hippolyte Islands, for example, were surrounded by steep-sloping and highly fractured bedrock reef. The upper slopes (<45 m) of these islands were covered in moderate to dense kelp, *Ecklonia radiata*, but as we descended these slopes became covered in a dense and highly colourful sponge assemblage (45-80 m). At the base of these reefs, areas of sand were interspersed by patch reefs covered in sponges and sea whips. Beyond these rocky reefs, a brief zone of bare sand was recorded, beyond which the introduced screw shell, *Maoricolpus roseus*, lined the seafloor. High density beds of dead screw shells created a novel and extensive substratum for encrusting invertebrates, such as sponges. The addition of this screw shell habitat has meant that sponge populations now extend out across the soft-sediment habitats of the inner and perhaps outer shelf. Similar patterns of kelp, sponge and screw-shell distributions were observed along the Fortescue

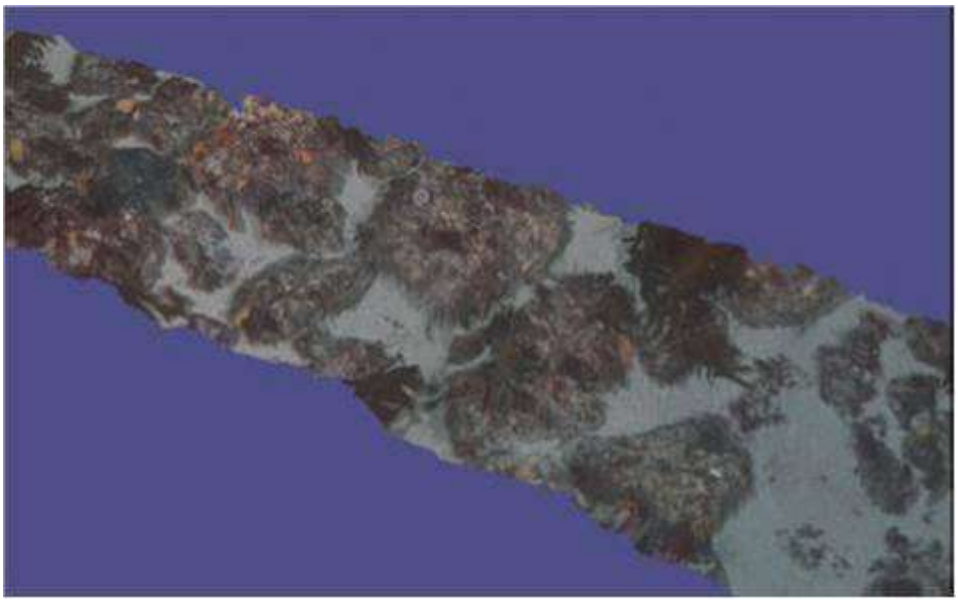
coastal reefs, including the deep-reefs at O"Hara and Waterfall Bluff, and around the Nuggets off Freycinet Peninsula. It is unclear from our survey exactly how far offshore these invasive screw shell beds extend.



High-resolution multibeam bathymetry map of the Hippolyte Islands, in South-eastern Tasmania with the distributions of dominant biological assemblages: a,b) kelp (green circle = Ecklonia radiata, green triangle = Caulerpa sp.); a,c) sponges (yellow circles); and a,d) the invasive screw shell, Maoricolpus roseus (brown circles). Bathymetric image produced by Cameron Buchanan and James Daniel (Geoscience Australia)

In contrast to the high-relief reefs of the Hippolytes, and the complex but less steep reefs of the Nuggets, deep-reefs off the Freycinet Peninsula were characterised by multibeam surveys as very low-lying bedrock habitats that rose only 2-3 m above the surrounding sediments. Video footage of these areas found flat, featureless, and silt-covered bedrock habitats that supported low densities of mixed-assemblage suspension-feeders such as sponges and ascidians. Other species recorded from these areas included brittle stars - found in high densities around reef edges - giant volutes, fan worms and sea pens. Other areas mapped included deep reefs along a section of coast in the Fortescue region, including O"Hara and Waterfall Bluffs; Deep Reef, immediately north of the Hippolyte Islands; the deep complex

reefs below The Friars, located off the southern end of Bruny Island; and soft-sediment habitats in the Huon and Port Arthur channels.



3D representation of the seafloor from a section of an AUV transect. Images are generated by stitching together the series of stereo still images.

The co-located biological and physical data collected during this survey will be used to examine the fine-scale relationships between the marine flora and fauna and the physical nature of these seabeds, and will evaluate the use of physical surrogates to predict the distribution of these marine assemblages. This is the first high resolution characterisation of Tasmania"s deep shelf habitats which will, with other Marine Biodiversity Hub surveys, contribute substantially to our understanding of biodiversity patterns and habitat representativeness. This knowledge will be used to inform local and regional managers, national regional marine planning, marine park area design, and marine conservation.

Authors: Tara Anderson, Matthew McArthur, Scott Nichol and Andrew Heap, Geoscience Australia Neville Barrett and Nicole Hill, Tasmanian Aquaculture and Fisheries Institute

Deployment of the AUV for the SE Tasmanian surveys. (Photo credit: Justin Hulls)

Southern Paddlers

A spot of paddling action…

Ocean Racing is alive and well in Hobart. After the success of last summers Down Wind Series, Southern Paddlers have put on 2 separate race series primarily catering for ocean skis but people in all types of craft have been competing.

The Twilight Series was set up as an introduction to ocean racing with a 6km, 2 lap triangular course from the DSS every second Tuesday night. The course is designed to give paddlers a sheltered up wind leg and an easy down wind leg whilst receiving constant supervision from the safety boat. Fields of up to 25 paddlers have been competing with the early races being dominated by Pete Genders and the last few by Stew Lawless. Mat Dalziel, Ben Maynard and Ben Oakley have added some interest to some of the races.

The Ocean Series consists of 8 races ranging from 10 to 20 km in length of predominantly down wind conditions with points from each race counting towards an overall series. Race 1 from Kingston to Bellerive was dominated by Jamie Stubbs and Adrian Petrie and the next 8 competitors finishing within a minute of each other in a 20 knot southerly. Race 2 saw paddlers head out into the middle of Fredrick Henry Bay looking for an elusive sea breeze. Again Jamie Stubbs dominated, with Adrian Petrie second and Lester Nation third. Race 3 shocked a few people as there was a typo in the race info advertising the race from Sandy Bay

to Tinderbox as 12 km. The 19km race was again won by Jamie Stubbs at a very impressive average speed of 13.9km/h. A group of 5 paddlers were battling it out for second for about 16 km before Matt Dalziel applied the pressure with Lester Nation third. Race 4 and 5 made up the East Coast Double Header, a weekend at Triabunna with a race on Saturday and Sunday with a social gathering on Saturday night. The first 14km race in light down wind conditions from the Eastcoaster Resort to Oakhampton was won by Stew Lawless, Adrian Petrie second and Ian Cooksey third. The first five finished within 30 seconds of each other. The race on Sunday was from West Shelly Beach to Paines Place, north of Lords Bluff. The 20 knot southerly made for very challenging conditions up the Mercury Passage and bought a smile to the downwind specialists. The race was won by Lester Nation with Angus Sprott second and Steve Price third.

With 3 races to go in the series, Lester Nation leads from Stew Lawless with Ian Cooksey in third.

The next race is part of the Sandy Bay Regatta on Australia Day and the Twilight Series starts again on 9 February 2010. The summer of racing concludes on 27 March 2010 with the first ever state championships for ocean racing.

For full race reports, results and calendars visit www.southernpaddlers.com .

My Compact Camera

Unfortunately there hasn't been much of an influx of pictures from snap-happy enthusiasts excited to share their pictures from underwater adventures around Tasmania, so I'm throwing out another picture this edition (to anyone else wanting to share their images, shoot us an email at *marinelifetassie@gmail.com* – we'd love to hear from you!). This one's a colony of jewel anemones (*Corynactis australis*) on a pylon at the Maria Island jetty. – Emma

Those were the days

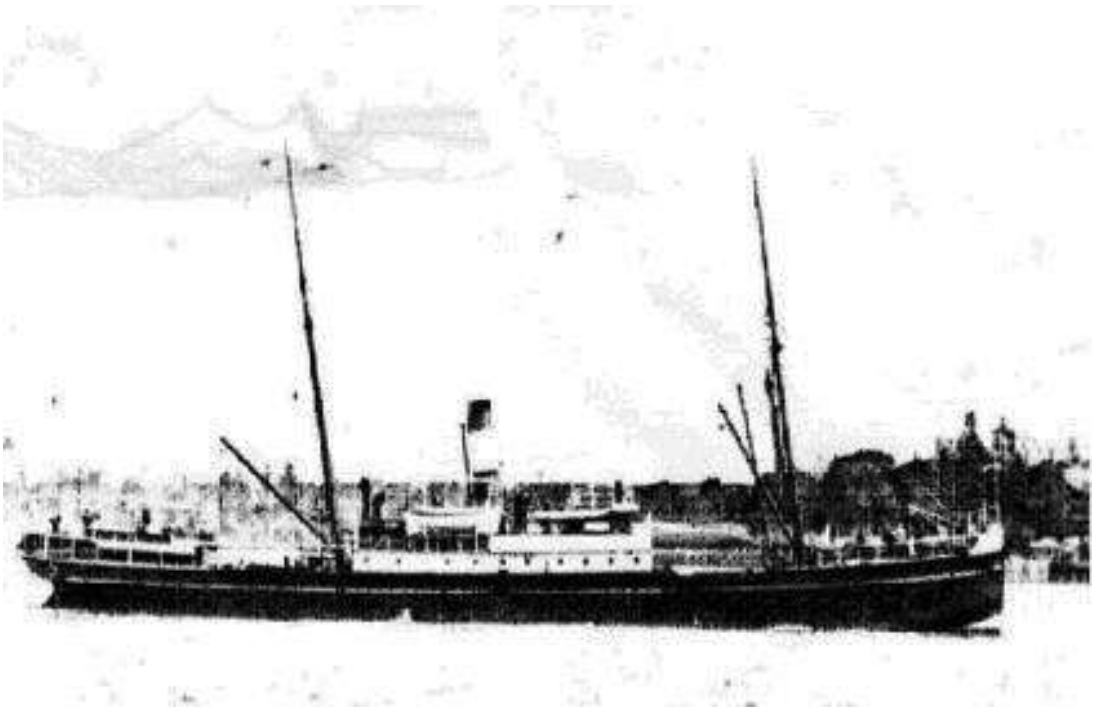
John Smith has come back with some more gems from the back of his garage. The Fenzy was one of the first serious Buoyancy Compensator vests (BC) and originated in the UK in the 1960s as I understand it. Even today it is still a popular vest and a lot of UK divers still swear by them. It was filled from a pony bottle that had to be decanted from your tank before the dive, originally no direct scuba feed. A long time ago I was lent one for a dive on the Hippolytes to 30 Metres. Being young and daft I forgot to ask if it was full and found out three things. 1. how hard it is to swim up from 30 metres while overweighted with no BC when your suit is compressed. 2. how hard you can fin when your life might depend on it and you're too cheap to dump your belt, 3. always be responsible for your own gear safety no matter what some else says.

The BC wasn't commonly used in Tassie until the end of the 1970s, with clubs rapidly enforcing their use after 1975 when a club diver died in circumstances that might have been avoided if a BC was available.

Maritime History

"The Fateful Spot"

Betsey Island Wreck Graveyard and the S.S. "Musgrave"



Specifications

904 gross tons, 211ft x 30 ft x 15.4ft, built 1883 Glasgow, scuttled 1930

History

The "Musgrave" was built for Colonial Sugar Refineries as the "Fiona" for use in the Queensland sugar trade. She was CSR's second ship of the same name. The first "Fiona" had been wrecked off Seal Rocks in NSW. The "Fiona" was a 19th century version of a bulk carrier and could carry 800 tons of general cargo and sugar. She could make 9 knots while consuming 12 tons of coal an hour. Hardly a racehorse, but that was good travelling for the time.

In 1909 she was bought by William Collin for Queensland coastal trading between Brisbane and Bundaberg. The new owners extensively rebuilt her. She was then bought by Gibson's Flour Mills in Hobart and used for shipping wheat from South Australia.

By 1926, her tired old ribs and engines were no longer worth repairing and the vessel was retired to New Town Bay. Thieves stripped her of valuables before she was sold to Saunders and Ward engineers who salvaged any remaining valuable scrap.

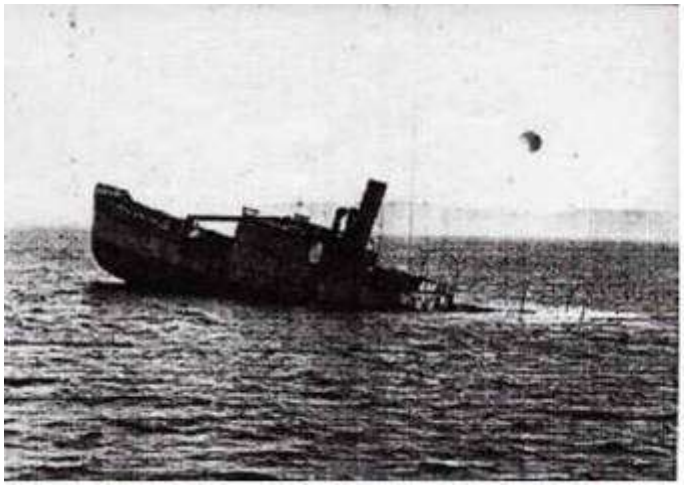
Now a pitiable eyesore the old hulk had to be disposed of as cheaply as possible. It was decided she would be scuttled off Betsey Island in 20-30M where she wouldn't be a threat to other shipping. This area became the ship disposal point of choice for the local marine board and was to later become known as the Betsey Island Wreck Graveyard.

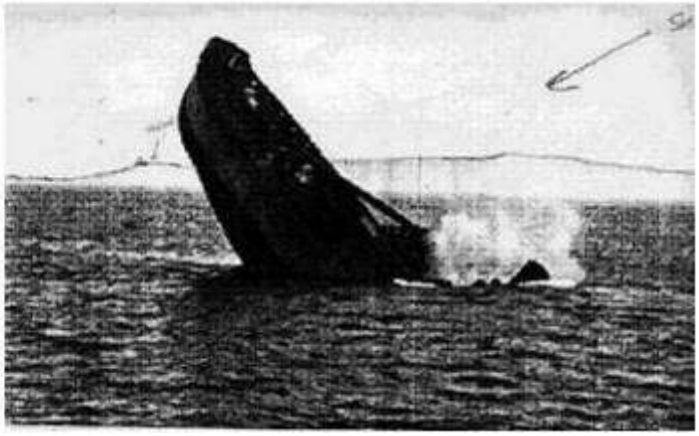
The "Musgrave" was towed down the river by the harbour ferry SS "Dover", only managing a leisurely 4 knots. The engineers had picked a fine day with calm seas, light northerly wind and favourable tides. While she looked ready to go at any time, in fact she was big, still relatively intact and not easy to empty of her huge volume of air. On the way down the seacocks were opened to get the process started before they arrived at the site, but the "Musgrave" was eager to go to her rest and filled quickly with seawater. The seacocks had to be hurriedly closed again when she developed a dangerous list.

To hasten her they decided to blow holes in some of the larger air spaces above the waterline. The first charge only bulged a plate in the engine room, so they added a bit more explosive. The second blew a large hole in the aft hold. Then she took a dangerous starboard list and looked like going over while still in the shipping channel. The hole had to be hastily shored up again.

At 1.10pm, they were approaching Betsey Island. The 4 seacocks were blown off, which started the flooding of the engine room. "The fateful spot was reached" and the last charges were set to send her to her final resting place. Time everyone got off.

The final explosion caused her to sink by the stern but then she held fast as if reluctant to finally slip away. A dinghy was sent out and a nervous worker put aboard. He reported a rear bulkhead was holding on stoutly to the end. At 2pm, the strain on the watertight stern was too much, she finally filled and she sank stern first in 13 fathoms.





I first tried to find her in the early 1980s as part of a group that were rediscovering the wrecks to promote the area as a dive location. We found all the other wrecks but despite several efforts, the final location of the "Musgrave" always eluded us. For the next 25 years we went out religiously nearly every year to try out one more theory as to where she might be.

Then in about 2006, some TSDC divers followed a lead from a local fisherman and found her largely flattened, but not far from the spot we had checked over and discounted in the first year. The other wrecks in the area give a pronounced sounder 'trace' but we had been unlucky and never passed over her remaining upright stern in a spot where it was high enough to register on the sounder.

The subsequent dive was a delight as she still has a relatively intact stern with a prominent exposed steering quadrant. The whole wreck is covered in jewel anemones of pink and white so the wreck looks like it is covered in roses. Time has been kind to her and although she slowly disintegrates with each passing storm she is no longer an ugly duckling. The unwanted "Musgrave" has become a marvel of nature.

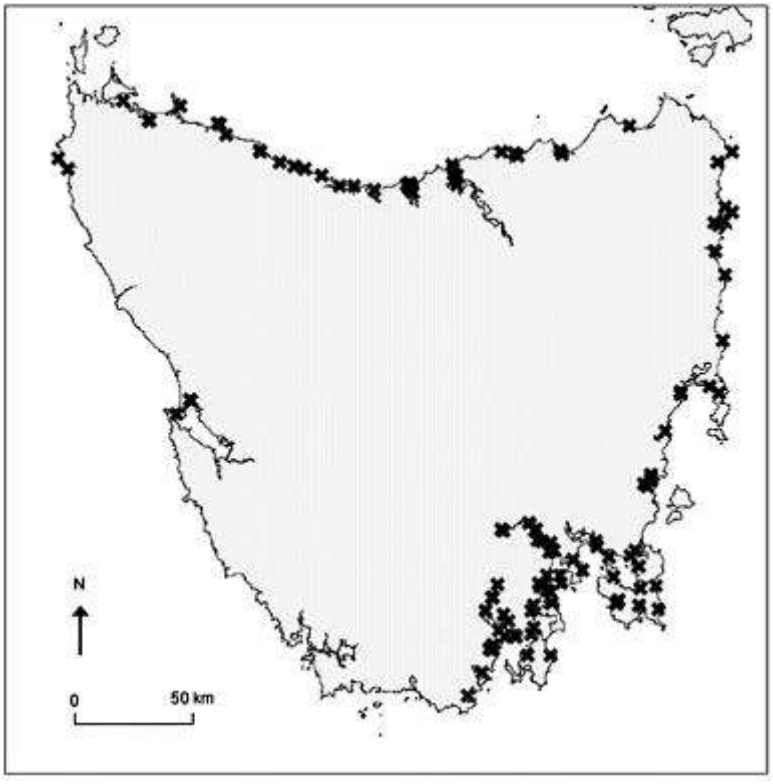
Does fishing further from home increase your chances of snagging a whopper?

Emma's interpretation of Stuart-Smith et al.*'s (2008) paper entitled* 'Spatial patterns in impacts of fishing on temperate rocky reefs: Are fish abundance and mean size related to proximity to fisher access points?' *with less of the jargon…*

It's safe to say that more or larger fish are perceived to be further away from boat launching areas. It makes sense, right? Commercial and recreational fishers are more likely to concentrate on pillaging areas nearby to boat ramps – all fairly logical. Unfortunately in science, it's not enough to just rely on common sense. So Rick Stuart-Smith and his colleagues investigated how the impacts of fishing onshore reefs changes with distance from access points. Data was collected by visual censuses across 133 sites around Tasmania that ranged from 0.6 to 131 km from the nearest boat ramp, and the results were somewhat surprising. But first, a little background…

Tasmanian fisheries

The main commercial and recreational reef fisheries in Tasmania are abalone and rock lobster. Other heavily fished species are the banded morewong, wrasses and bastard trumpeter. Recreational fishing is particularly high in Tasmania compared to natural standards, with approximately 30% of the population actively involved. Recreational catches are therefore a significant component of the total harvest of some inshore reef species, and are highly focused in a few areas due to the distribution of population centres and access points.



Location of publicly accessible boat launching facilities (black crosses), including well-used beach launching

Findings

The results were at first a little confusing, with *more* fish found near boat ramps. However, these abundant fish tended to be small (<15 cm), and large fish were comparatively very rare. All in all, this trend represents what we call an *ecological release* of small fish – basically, there's not enough big fish left to eat them!

To confuse matters a little more, this trend of decreasing large animals near to boat ramps was not obvious amongst all harvested species. Of particular interest was that the heavily-fished rock lobster did not appear to show any size-proximity trends. The authors suggest this is probably because of the long-ranging nature of the commercial fishery which, unlike the recreational fishery, is composed of larger vessels. On a finer scale, clear increases in the size and number of legal rock lobsters further from boat launching areas are evident on the east coast where recreational fishing is highly concentrated. Surprisingly, this suggests that the recreational rock lobster fishery has a stronger localised impact on the rock lobsters at the surveyed depth range (5-10m) than the commercial fishery. In contrast, the banded morwong was strongly affected by proximity to boat ramps. The reason for this is simple: as a live export fishery, survival rates of caught fish will diminish with travel time to boat ramps.

Overall, the efforts of commercial and recreational fishers are likely to be concentrated around access areas. However, their impacts are likely to be greatest for species that are used in a live export market, and for those that are fished heavily by small vessels.

So, as a recreational fisher, does fishing further from home really get you better catches? The short (and annoying) answer is "it depends". On the species you're fishing, and the area you're fishing in. But if you think you're witnessing a case of The Incredible Shrinking Lobster/Morwong near your local boat ramp, you're probably quite right.

Critter Files

Johnston's weedfish (*Heteroclinus johnstoni*)

Habitat: rocky reef
Depth range: 0-20 m
Size: 35 cm
Diet: small fish, crustaceans

Johnston's weedfish is the largest species of weedfish found around Tasmania, and can grow to a hefty size of over a kilogram. It is relatively common and is the species most frequently encountered by fishermen and divers. The tentacles on the snout are long and branching and project forward over the mouth. Often found peering out sheepishly from amongst the kelp with their bright yellow colouring and ridiculous nasal appendages, these large fish are not known for their stealth camouflage abilities and are easily spotted.

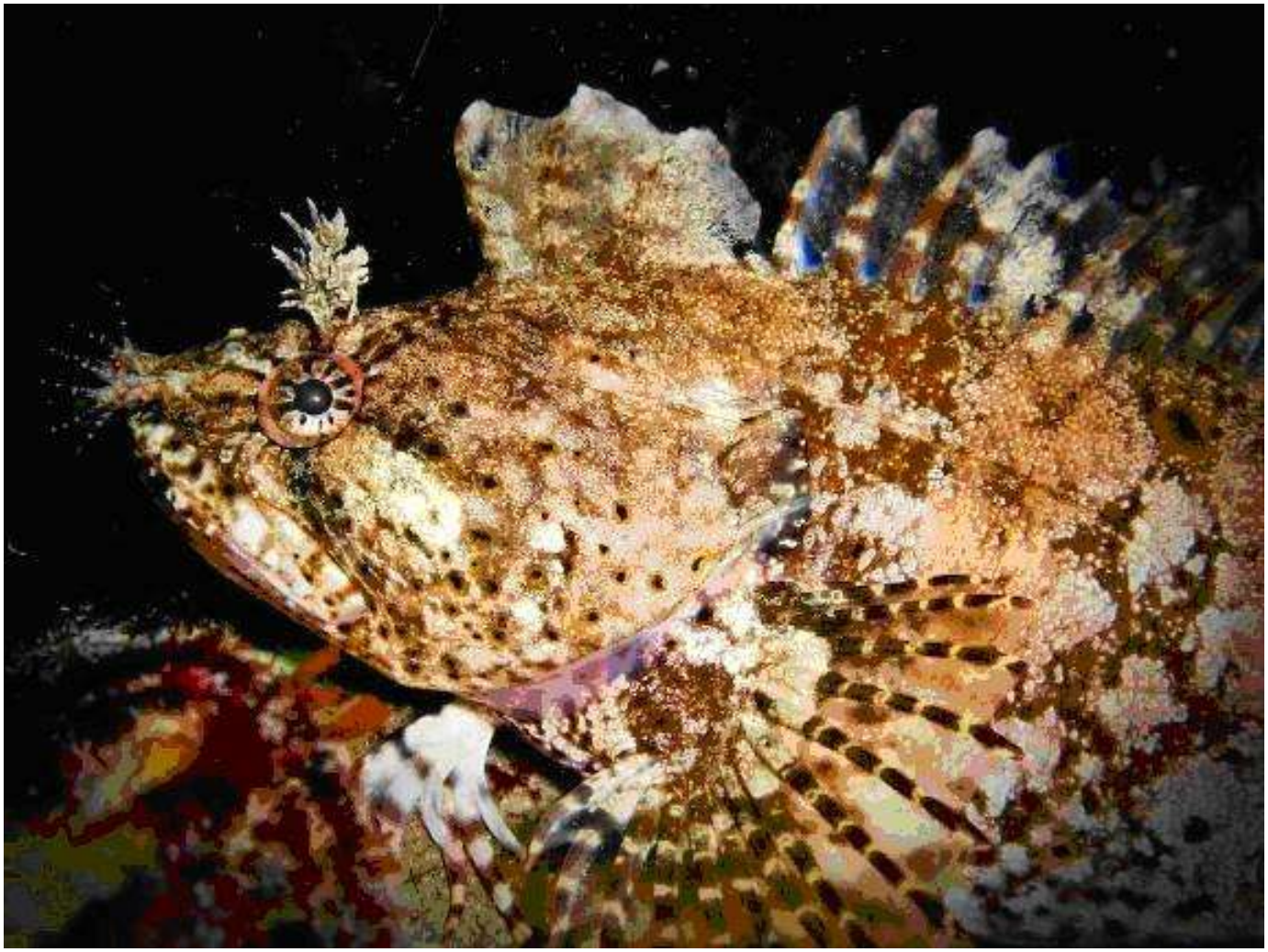


Photo © Emma Flukes

WHATS ON in January 2009

Major biological events and Sighting Reports

Pupping season has started in Bass Strait with Jan/Feb being a busy time around seal colonies for young pups learning how to swim and also for White Pointers, attracted by the pups who wash away from the rocks. Great time to dive Barrenjoey, but only if you are up for the slightly increased risk of meeting a big Noah.

Rolli has spotted about 15 Port Jackson sharks (between 2 and 5 feet) all sleeping under a bommie. They may be females congregating post-breeding, article to follow in a future edition.

Hector has been attacked lately by a swarm of highly discerning leatherjackets in Bass Strait. Apparently they avoid other divers and go straight for him.

The Eastern Australian Current is hotting up, so you can also expect to see lots of migratory school fish on East Coast reefs over the next few months. Keep an eye out for anything weird following this current down from NSW and report sightings to the CCRedmap project website.

Organised Events

Like to get in touch with someone for a dive or day out? Email us and we'll forward your message. If you would like to advertise your club calendar also drop us an email.

South East

DIVING

9th January - cleanup dive after the Taste, Hobart Docks, Environment Tas, Tas Uni Dive Club & TSDC

10th January – Pt Arthur, (TSDC)

Also Check out Go Dive, The Dive Shop, or your favourite local dive shop who are also likely to be running regular outings throughout the month

KAYAKING

26 Jan Australia Day - Sandy Bay Regatta racing

9 Feb – 27 March Twilight Racing Series (Southern Paddlers)

EXHIBITION

To 15 Jan , Lady Marion art exhibition, Waterfront Café Dunalley

East Coast

Try Bicheno Dive Centre or Bay of Fires Dive St Helens , or East Lines St Helens

16 Jan Mistaken Cape (TSAC)

North

Oceans Plus Dive Club may also have ad hoc dives planned

15 January week of, - Kent Group (organiser TSDC) (Bring us back some photos guys and gals, we'd love an article) – trip now full as we understand it

26 Jan week - Cape Portland camping and wrecks (TSDC)

Go Dive Launceston ask if Fitzy is going anywhere

North West and West

Aust Day weekend, Rocky Cape (TSAC)

Wynyard Dive Centre

Canoe N'Surf Devonport

Leven Scuba Club generally take the rubber ducky out on of Devonport any calm weekend

Essential news and links for the perfect day out

Likely water temperature

http://www.bom.gov.au/cgi-bin/nmoc/latest_YM.pl?IDCODE=IDY00004

Divers are reporting as low as 14 degrees in southern rivers and only 15 degree in some spots in the North West in the recent past.

Water is temp is approx. 18C in the north, warming up with the typical warmer currents flowing down the eastern seaboard.

East Coast temp should peak at 20C by Feb.

Vis recently

Best bets – sea temperatures appear to have eased, and with it the algal blooms, good conditions likely nearly everywhere while the wind stays away, go for it.

Rolli reports that the Tamar Vis is between 10-25m at various sites such as Garden Island, George Town and Low Head. Long spell of still weather has been useful, although the Tamar has its usual hanging sediment.

Link to marine wind forecasting

http://www.bom.gov.au/jsp/marine/wind/index.jsp

Moon phases and Tides - Low Head, Hobart & Burnie

http://www.bom.gov.au/oceanography/tides/MAPS/tas.shtml

Advanced weather planner based on past records

http://www.bom.gov.au/climate/averages/tables/cw_092003.shtml

How to help us get the message out

We are asking people and organisations to help circulate the newsletter. Please ACTIVELY distribute Marine Life amongst your interest group, friends and colleagues so we can get the message out there, or give us email contacts (after asking your people for any objections to release of email contacts) so that we can distribute it for you.

How to make a contribution

This involved sending us an article by email, preferably not too long and with a photo or two. Sorry, no money, its all a love job and just for the glory. We'll use your contribution for the purpose for which it was given, for non-commercial uses and with attribution. *Contact Us; marinelifetassie@gmail.com*

OH NO, SCUBA DIVING OVERLOAD!

We are trying to appeal to all non-mainstream marine activities in, on, under, or near the ocean like, surfriders, beachcombers, shell-collectors, coastcare, fishcare, canoe and kayak, sea bird and marine mammal enthusiasts, marine scientists, sustainable fishers, scuba divers and snorkelers, et al. So send us your news and photos and give these scuba divers a run for their money. If it gets wet and salty at least twice a day we want to know about it.