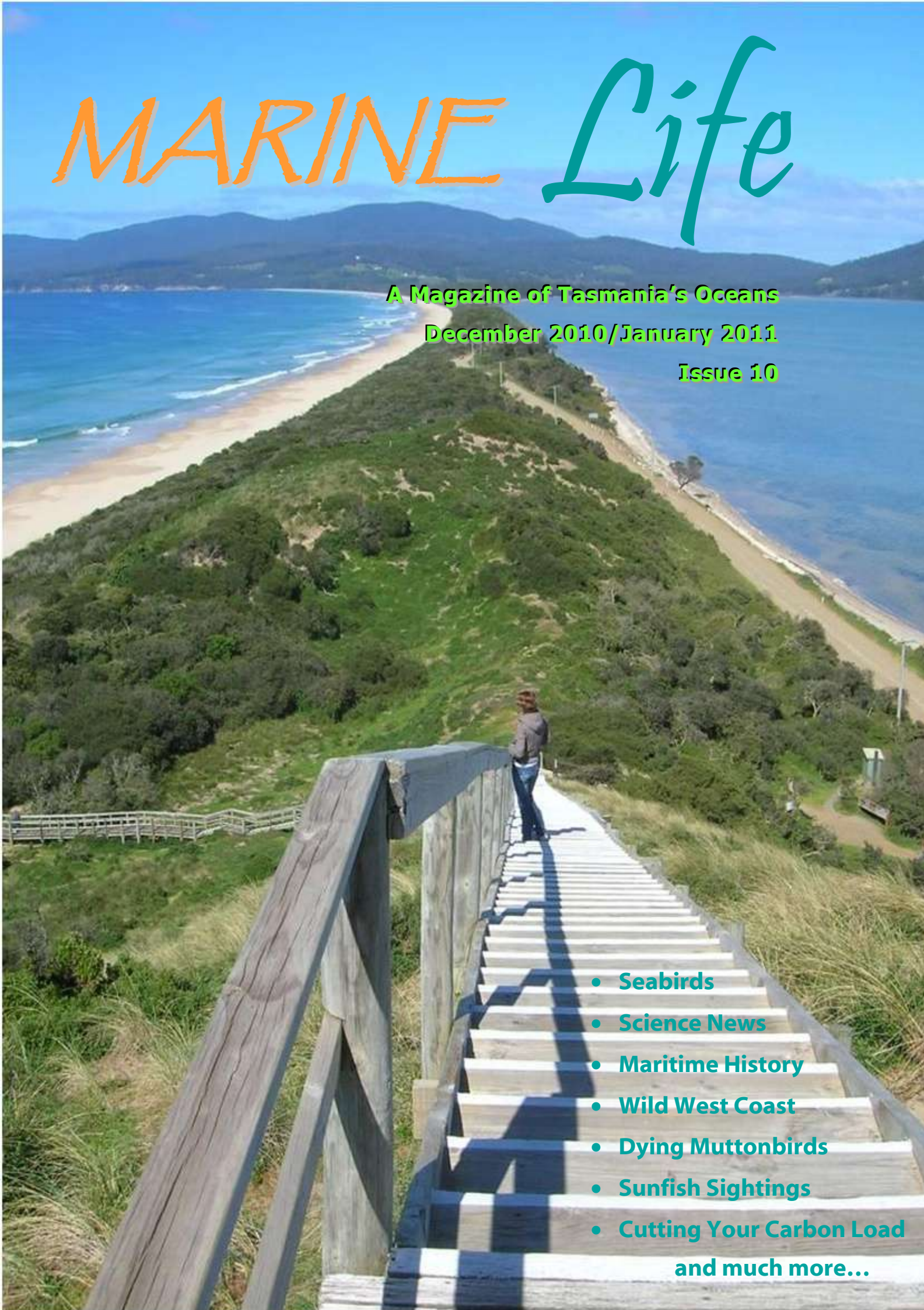
MARINE Life

A Magazine of Tasmania's Oceans

December 2010/January 2011

Issue 10



- Seabirds
- Science News
- Maritime History
- Wild West Coast
- Dying Muttonbirds
- Sunfish Sightings
- Cutting Your Carbon Load

and much more...

Marine Life magazine

Our Goal

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

The Editorial Staff

Michael Jacques Editor, a sun damaged hedonist

Emma Flukes, a sun soaked hedonist

Geoff Rollins, centerfold model, but not in our stuff thanks!

Phil White, former extra in the movie "Alien", was the egg monster in the crashed space craft.

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

Cover Photo ; Bruny Island Neck by Alison Triffett

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Local News

Reminder: Calamari and squid seasonal area closure for part of East Coast

Seasonal closures apply for squid, including southern calamari in some east coast waters from 15 October 2010 to 14 November 2010 inclusive.

The closure applies to all waters south from Lemon Rock (south of Wineglass Bay) to the northern end of Marion Beach (south of Maria Island) and includes Coles Bay, Great Oyster Bay and the Mercury Passage.

Scallop Fishery – Early announcement - Closure for the D'Entrecasteaux Channel in 2011

A closure for scallop fishing has been declared in the D'Entrecasteaux Channel for the 2011 season to protect scallop stocks and reduce the likelihood of long term closures. All other State waters will be open from 16 April to 31 July 2011.

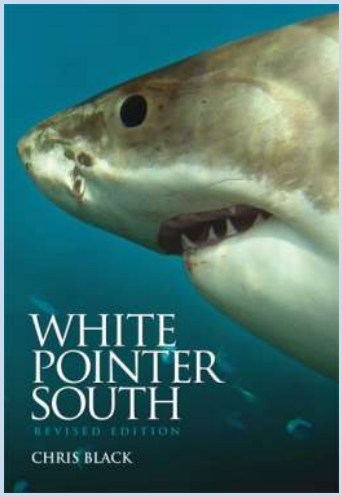
Third and Final Phase of the Crayfish Review

The **third and final phase** of the review is the statutory consultation stage required under the *Living Marine Resources Management Act 1995*. In this phase, the Department will present formal proposals and a set of formal rules for consultation. At the conclusion of this consultation period, the Department makes final changes to the rules and presents the final Management Plan to the Minister for approval.

Coastcare Week

Presentations
Highlights from key projects & initiatives from Coast to Coast 2010
Reef Life Survey Program -
Climate change influences on the Derwent Estuary, Southern Tasmania.
Integrating coastal geomorphic mapping and wave modeling

How do you tell people about sea level rise impacts ?
Thursday 9th of December
Marina Room, Elizabeth Street Pier, Hobart
2:30 – 5:00pm: Coast to Coast Presentations
5:00 – 7:00pm: Drinks, food & launch of Strategic Plan
RSVP by 1 December to admin@nrmsouth.org.au
For more information contact Jill Pearson (NRM South) on 6221 6126 or Kristy Blackburn (Coastal & Marine Branch) on 6233 3947



Book Launch

The book *White Pointer South* by Chris Black has just been updated. The book which examines 200years of human-shark interactions in south-east Australian waters. The first edition dealt with white shark by-catch issues in local waters and the second edition continues and expands on the theme.

"This book will be of especial interest to all those who use our marine waterways whether they be above or below the surface." Dr John Stevens , CSIRO shark biologist and co-author of *Sharks and Rays of Australia*.

Redmap News

The days are getting warmer and more conducive to grabbing the fishing rod or donning the wetsuit and heading out onto (or into) the water. We're looking forward to receiving your sightings of new or unusual species you see or catch in Tassie waters! Don't forget to take the camera with you so that your sighting can be verified.

You've probably noticed we've made a few changes to the Redmap site. There's now a text field for adding a caption to your photo—useful for noting when you see more than one fish (e.g. if you see a school of yellowtail kingfish, you can note approximately how many fish you saw)

PWS - Public Comment Sought on the Draft Pitt Water Management Plan 2010

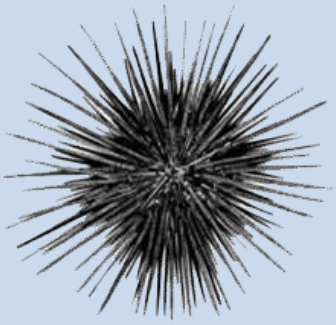
Pitt Water Nature Reserve forms part of the Pitt Water - Orielton Lagoon Ramsar Site, one of ten Ramsar sites (wetlands of international importance) in Tasmania. Pitt Water Nature Reserve is reserved principally for the protection of its migratory species and resident shorebirds, habitat, and threatened species. It is an extensive and diverse wetland and is the only Ramsar site in Tasmania located in an urban area.

The management plan for the reserve will help ensure the reserve is managed effectively to protect its outstanding natural values. It is aimed at ensuring the long-term viability of the values for which the area was reserved and outlines the management objectives, strategies and actions. Because the reserve is at the end of a large catchment, many of the impacts originate outside the reserve. Therefore the plan proposes developing close liaison with local Councils and the community to assist in supporting management actions that will ensure the protection of the reserve and its values into the future.

What do you think of the proposals in this draft management plan? This is your chance to have your say on how Pitt Water Nature Reserve is managed over the next ten years. This draft management plan was released for public comment on 1 November 2010. Your comments should be submitted by close of business on 10 December 2010. The plan can be downloaded from here.

Sea Urchin Crisis

Mercury June 30, 2010



The State Government yesterday admitted it could be forced to financially back the rock lobster and wild abalone industries, both worth more than $100 million, which are threatened by the spread of the spiny sea urchin. Primary Industries Minister Bryan Green confirmed the pest population was out of control and had spread from the East Coast as far as Port Davey in the South-West. The creature is believed to have surfed in on warmer than normal sea currents over the past decade, gradually establishing itself along the coast.

Last year international research found that the southern migration of the sea urchin had started to have a "catastrophic" impact on the state's kelp beds, leaving no food or habitat for rock lobster and abalone populations.

Mr Green said no financially or physically viable eradication program had yet been found by the Government. He said as the population continued "to get away from us" and the pressure mounted on fisheries, other support options might have to be considered. The third and final stage of a review of rock lobster fisheries is about to begin.

Meanwhile, Mr Rockliff told a Budget Estimates Committee hearing, oyster and scallop farmers in the River Derwent and around Bruny Island were reporting sea star larvae were impacting the growing periods on their farms. But Water and Marine Resources general manager Wes Ford said there was no financial assistance available to deal with marine pests such as sea stars. Admitting they were now well established within the River Derwent, Mr Ford said it would be "virtually impossible" to eradicate the pest within "reasonable cost". Sea stars were introduced to the Derwent in 1986 through the ballast water of Japanese ships.

Marine ecosystems get a climate report card

This Marine Report Card summarises present knowledge on marine climate change impacts and identifies knowledge gaps and adaptation responses in Australia.

The Marine Report Card was produced by an author team representing 35 universities and organisations, a project team from the CSIRO Climate Adaptation National Research Flagship,

and a steering group comprising representatives from the sponsor organisations [National Climate Change and Adaptation Research Facility (NCCARF); CSIRO Climate Adaptation National Research Flagship; and the Australian Climate Change Science Program (ACCSP)]. This combined media release has more information about the benchmarking study.

IMAS/ANNiMS are running an intensive summer school unit

"Birds and Mammals of the Southern Ocean"

A new summer school unit run by the Institute of Marine and Antarctic Studies and the Australian National Network in Marine Science will examine the significant role of seabirds and mammals in marine ecosystems in southern Australia and the Antarctic.

The Southern Ocean encompasses all the waters from Australia to the Antarctic continent, and is home to a diverse range of seabirds and marine mammals. The history of exploitation of the large whales in particular, is likely to be a major factor in the way this system functions today, and how it may respond to future environmental challenges.

The unit will explore the diversity of birds and mammals in the Southern Ocean, including their taxonomy, physiology and biogeography. It will also investigate the important role that these animals play in the marine ecosystem and how physical oceanography and ocean productivity influences their distribution, feeding and reproductive biology.

The course has particular emphasis on the conservation and management of seabirds and marine mammals, examining current issues such as fisheries by-catch, the potential for competition with fisheries and the current whaling controversy. The course includes a six day field component, during which students will learn basic field techniques, such as at-sea surveys, penguin census methods and wildlife telemetry techniques.

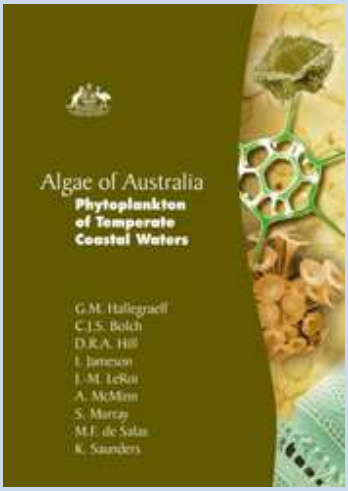
- Lectures start Monday 29 November 2010
- Instruction finishes Wed 15 December 2010
- This leaves Thurs 16 for revision, completing reports etc, and the final exam will run on Friday 17 December 2010

If you are interested please contact Bernadette.UlbrichHooper@utas.edu.au Manager, Australian National Network in Marine Science

The Australian National Network in Marine Science website.

Algae of Australia: Phytoplankton of Temperate Coastal Waters

The first guide for the identification of these fundamentally important microscopic algae in the temperate Australasian region.



Phytoplankton account for more than 90 per cent of the biomass of living organisms in the world's seas and produce 50 per cent of the atmospheric oxygen we breathe. They form the base of all marine food webs and play a critical role in shaping global climate. There is an increasing appreciation of their value as key biological indicators of ocean health and the impact of climate change on marine life, fisheries and humans.

Phytoplankton of Temperate Coastal Waters, the product of decades of research by Professor Gustaaf Hallegraeff and 11 collaborators, provides descriptions and illustrations of 541 species known from the estuarine, coastal and offshore waters of southern Australia. It includes more than 1100 photographs and drawings, and represents the first guide for the identification of these fundamentally important microscopic algae in the temperate Australasian region. The book, incorporating comprehensive bibliographies and a glossary of technical terms, will become an indispensable resource for oceanographers, fisheries biologists, aquaculture managers, as well as enquiring non-specialists.

Rock Lobster Fishery Report

A report on the **East Coast Tasmanian Rock Lobster Fishery : Vulnerability to climate change impacts and adaptation response options**, which was undertaken by TAFI and funded by the Australian Government Department of Climate Change, has recently been completed.

This case study examines the potential impacts of climate change on the Tasmanian rock lobster fishery, and identifies several options and opportunities for adaptation.

Climate change is expected to have a significant impact on the Tasmanian rock lobster industry with declines in rock lobster biomass occurring initially in northern and north-eastern regions before eventually also potentially declining in the south. As water temperatures increase it is also expected that the range of a damaging sea urchin will be extended. The study found that the rock lobster fishery is reasonably well placed to adapt to the challenges of climate change but identified several possible measures that will assist with this adaptation including improved catch modelling, long-term monitoring, better risk assessment, and effective education and communication with the industry. Understanding the impacts of climate change on the Tasmanian rock lobster industry is important because this fishery is ideally placed to be an 'early warning signal' for Australian fisheries generally.

Full report available on TAFI website.

Chemical spills as train derails

ABC November 17, 2010

There are concerns about the effects of a chemical spill into the sea after a train derailment in north-west Tasmania.

Containers carrying 2,000 litres of potassium hydroxide and sodium hydroxide were flung into the sea when a train derailed last night near Penguin.

No-one was injured and there is no danger to nearby residents. But Rosemary Cross from the Environment Protection Authority (EPA) says the chemicals could harm marine life. "At this stage we don't know what that impact might be, we're currently taking samples up and down the foreshore," she said. The containers have now been retrieved.

TasRail Chief Executive Damien White says the situation will not be clear until their remaining contents are assessed. "All we don't know is exactly how much has leaked out," he said.

Tas Museum and Art Gallery News -New Maritime heritage co-ordinator

Elizabeth Adkins is joining us as the new maritime heritage coordinator from Arts Tasmania, where she has been a roving curator for the past 3 years. Previously she has worked at Museum Victoria and for Port Phillip Council.

Past events

Bruny Island Birds Festival

I only arrived on the Sunday but from the number of bottles being carted away, the Saturday night dinner was a big success.

The Adventure Bay hall, was decked out with an excellent displays including some inspired kids artwork.

Many people took advantage of the bird walks on offer and I was told the cruise out to Pedra Branca was a real highlight.

I was cheap and went for the free walks and talks offered by Dr Eric Woehler. Eric is very passionate about bird conservation and impressed upon us as beach users, that we should stick to the wet sand and keep dogs on leashes. We are loving our beaches to death and causing severe disturbance to beach nesting birds.

The highlight (apart from the young Humpback breaching off the beach) was to be shown an Oystercatcher's nest, virtually invisible to the uninitiated eye and easy enough to unwittingly stumble over and disturb.

Well worth a trip and Bruny put on a show as ever, just look at the front cover.

Wrecked in Cremorne

Photos By MAKEBELIEVE CHILDREN'S ENTERTAINMENT and TROVE

There was a day of activities to commemorate the Clarence Sesquicentenary, unfortunately the "Life Be in It Day" at Kangaroo Bay Oval was cancelled due to rain.

An event that did go off was the 100th anniversary of the wrecking of the SS Nubeena on Cremorne Beach on 7 October, 1910. There are some great photos in the Eastern Shore Sun. Activities included a lantern parade, sand sculpture, photo comp, beach BBQ, with the Cremorne Community Group.

The Clifton surf club 'rescued' survivors from the wreck and the kids re-enacted the cows escaping into the dunes. There was a symbolic 'salvage' from the wreck, including the recovery of a keg of whiskey for the warmth and health of the cold and weary survivors/participants.

Makebelieve Children's Entertainment provided some of the fun.

Parts of the old wreck, mainly a boiler, can still be seen in the surf zone at Cremorne beach although she is slowly being buried and rusting away. The only other relic I know of is a deckhouse, that is still in service in the local area as a chook pen.

Refreshing to see a local community taking such a fun slant on their local maritime history. I'll have to be a spoilsport now and tell you what really happened.

Sorry, there were no pirates.

Climate Change

Tasmanian's vulnerability to Inundation from rising seas and storm events

Summary by Mike Jacques

Coastal areas in Tasmania already have some exposure to storm surge, erosion and other natural hazards without the compounding effects of climate change. For example, approximately 240 square kilometers of coastal area in Tasmania is currently vulnerable to storm surge flooding.

Compared to other states a very high proportion of Tasmania's open coast is hard rocky coast (about half), and much of this is cliffed. Large sections of coast are unlikely to recede significantly within human lifetimes.

At least 20 per cent of the remaining sandy shores backed by bedrock, which may erode with sea-level rise but are less at risk of significant shoreline retreat.

Why worry?, the problem is that the remaining sandy coasts are backed by soft sediments. These coasts are potentially prone to significant recession with sea-level rise.

Bad spots include Boat Harbour, Anson's Bay, Lauderdale, Cremorne, Clifton Beach and South Arm Neck. The Central Coast and Break O'Day may also be at high risk of inundation, with upper estimates of 16 per cent and 23 per cent of dwellings respectively being affected in these municipalities.

The figures do not included information on commercial buildings and transport infrastructure, although these assets will also be at risk of inundation. In 2008, the Tasmanian Government assessed assets at risk using a range of sea-level rise scenarios. Assets identified at risk include critical infrastructure and services, such as emergency service facilities and sewerage and wastewater systems. Inundation or failure of these assets would significantly impact communities and coastal ecosystems.

Key findings

• Between 8,700 and 11,600 residential buildings in Tasmania may be at risk of inundation from a sea-level rise of 1.1 metres and storm tide from a 1-in-100 year storm event. Based on this analysis, Tasmania has a relatively small number of residential buildings at risk in comparison to other states.

• The current replacement value of the residential buildings at risk is between $2.4 billion and $3.3 billion.

• Local government areas (LGA) of Clarence, Central Coast, Break O'Day and Waratah/Wynyard collectively represent 50 per cent of residential buildings at risk in Tasmania (upper range estimate).

• Between 1,850 and 2,250 residential buildings in the LGA of Clarence may be affected by sea level rise and storm tide inundation by 2100, equivalent to approximately 10 per cent of the existing housing stock.

• There are approximately 6,100 residential buildings located within 110 metres of 'soft' erodible shorelines, of which approximately 1,800 are within 55 metres of soft coast.

Figure 5.31 Images of Kingston (Kingborough LGA) in 2009 and with simulated inundation from a sea-level rise of 1.1 metres and a 1-in-100 year storm tide using medium resolution elevation data (not suitable for decision-making). © CNES 2009 / imagery supplied courtesy of SPOT Imaging Services and Geospatial Intelligence PTY LTD.

Figure 5.32 Images of Ulverstone in the Central Coast LGA in 2009 and with simulated inundation from a sea-level rise of 1.1 metres and a 1-in-100 year storm tide using medium resolution elevation data (not suitable for decision-making). © CNES 2009 / imagery supplied courtesy of SPOT Imaging Services and Geospatial Intelligence PTY LTD.

A Gifted Amateur - Tasmanian Naturalist Thomas Lempriere

Source; **http://www.utas.edu.au/library/companion_to_tasmanian_history/L/TJ%20Lempriere.htm**

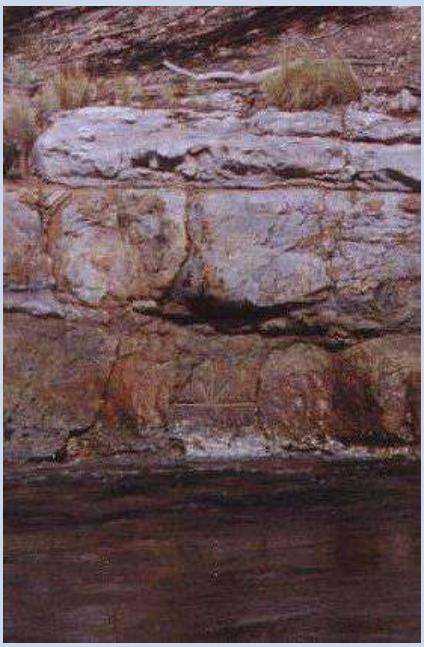
Lempriere was a minor British official from a respected family. He served the Commissariat Department in France, Flanders and the West Indies (1815–16).

Lempriere sailed for Van Diemen's Land, arriving in Hobart in 1822 to commence his own business. A shipboard romance resulted in his marriage to Charlotte Smith in 1823, and their large family was born over twenty years from 1824. Lempriere's business failed and by September 1825 he was insolvent. He returned to the Commissariat and served at various penal settlements.

Lempriere commenced a first-hand account of the colony's penal settlements in 1837, but this was not published until 1954. He was of note as an artist of sketches, scenic water colours and portraits in oils. At least 135 of his works are in private or state collections.

From his time at Sarah Island, Lempriere collected fish mammals, birds and insects**.** He formed a museum at Port Arthur in 1837 and kept tidal and meteorological information. The Thornback Skate (*Raja lemprieri)* was named in his honour He died at Aden in 1852.

Lempriere was one of the first naturalists to capture specimens of Red Handfish, that were easily caught in dip nets at Port Arthur. Apart from his sketches one of his other lasting contributions was to create a sea level mark at Port Arthur. This mark is now an important piece of evidence in the study of sea level rise.



Sea-level mark at Port Arthur

It is one of the earliest reference points in the world against which changes to sea level can be scientifically measured. Taking account of vertical movement of the land, the rate of sea-level rise is between 0.8mm/year and 1mm/year, with approximately 13 cm of sea level rise since 1841. This is consistent with rates of change recorded at Sydney Harbour based on 82 years of data.

A Tasmanian Wreck - steamer 'Nubeena' beached

Mercury 10/10/1910

The steamer Nubeena, 138 tons, J. Franklin master, ran ashore at Pipeclay Lagoon, Frederick Henry Bay, between 10 and 11 o'clock on Friday night. She was bound from Tasman Peninsula to Hobart with passengers and cattle, having left Koonya at 6 o'clock on Friday night. In order to avoid a heavy beam sea the vessel stood for Sandford. The night was very dark, and it appears that the mate, who was at the wheel, mistook the course, and the vessel ran up on the beach. There were between 20 and 30 passengers on board. The stewardess was the only woman aboard. The vessel lost her propeller, so no effort could be made to refloat her. The passengers wore put safely ashore in boats, and the cattle, of which there were about 10, were also landed.

The steamer Breone was despatched to the scene of the accident at 2.10 on Saturday morning to bring the passengers to Hobart, but most of them walked to Bellerive, a distance of eight miles, and caught a steamer to the city. There was no casualty of any kind. The Nubeena is high and dry, and her hold is full of water. It is not known whether this is the result of a leak or of waves washing over the vessel. The steamer is valued at £5000, and is not insured. Experts have been sent down to see it there is any prospect of refloating the vessel.

Portfolio

THE FISHING INDUSTRY IN TASMANIA

A Bellerive Primary School Project

Our Grade 4 class has just finished a project on the Fishing Industry of Tasmania. We researched information on the computer and did written projects on fish that are caught around Tasmania. We also visited a fish farm. The class have learnt many interesting things and we each contributed to making the project model.

We will include some details on how we put it all together.

Our Model

Grade 4 J. students have learnt many things about the way the fishermen often sail far out to sea around Tasmania to catch many different varieties of fish. These fish are then brought back to shore and sold to the shops, restaurants and canning factories for people to buy fish for their meals.

When the fishermen are far out to sea off the coast of Tasmania they often see different whales who live around and pass our island on their journey toward the Antartica. Can you see the Humpback whale, the orca or Killer Whale and the Southern Right Whale in the model?

The class also discovered another bird that follows the fishing boats far, far out to sea.
Can you see the models of the Albatross in the class construction?

The Albatross is unusual because it grows to be a huge sea bird with a wing span of 370 centimetres from tip to tip. The Albatross uses it's long, narrow wings to help them to glide on currents of warm air.

Many other animals were studied during the project.

The class of Grade 4 J went on an excursion to visit an oyster farm at Barrilla Bay


Orange Roughy

Sea Glider off Bicheno

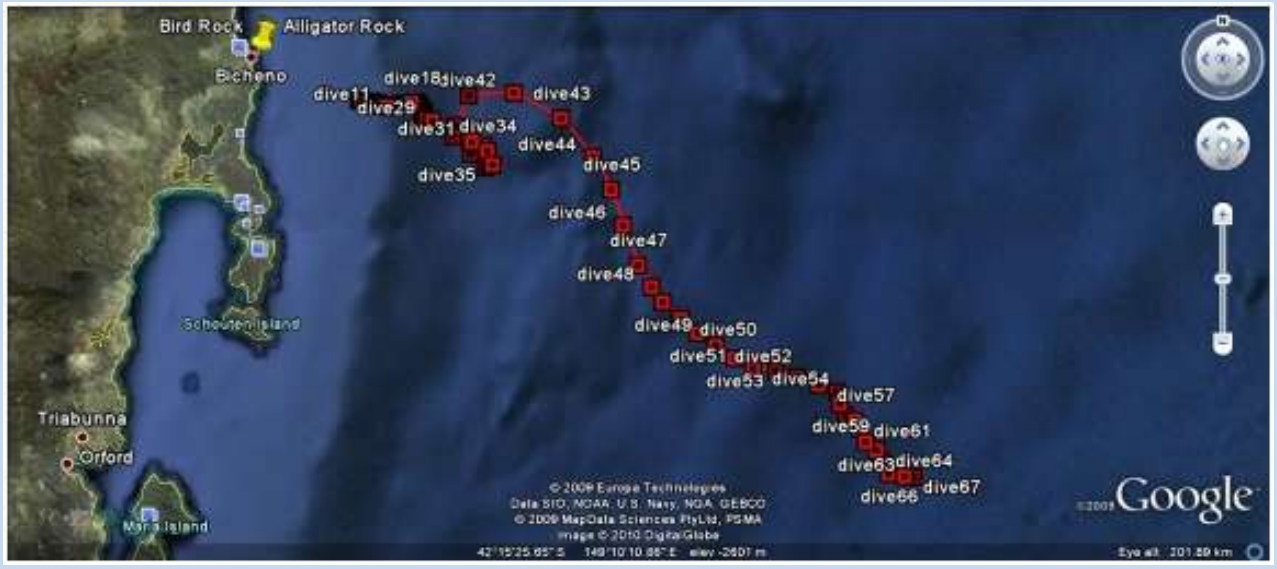
By John Smith

CSIRO in Hobart recently enlisted the services of the BDC dive boat (Iruka) to launch an automated robot marine glider over the continental shelf off Bicheno. Six seagliders, as they are known, have been purchased from the US by the University of Western Australia for about $200,000 each, and are being launched at locations around the Australian coastline to gather ocean data used in fields of climate change research, marine biology, physical oceanography and weather forecasting.

The gliders are hot pink in colour, two metres in length, adorned with delicate fins and antenna, and weigh-in at around 50 kilos – a real handful for Bruce, a deckie, the Seaglider 'pilot' and a CSIRO technician. Able to be deployed for up to six months, the Seaglider will be remotely controlled from Hobart to dive/descend/turn, while the data collected will be relayed directly to Perth for analysis.

The early morning 26 km trip out to the launch site proved uneventful, but was followed by four frustrating hours of repeatedly trying to calibrate the beast with an array of computers, satellite equipment, and numerous phone calls to Hobart, Perth and the US (not helped by the fact that it was Thanksgiving Day in the US and relevant scientists had to be located and dragged away from their celebrations).Eventually though, SG152 was launched and Iruka turned for home into a now blustery nor-easterly. It was late afternoon when a very tired, wet, and cold crew eventually arrived back in Bicheno.

She started diving and popping to the surface to transmit data.



Critter Files

Sea spiders (Pycnogonidae)

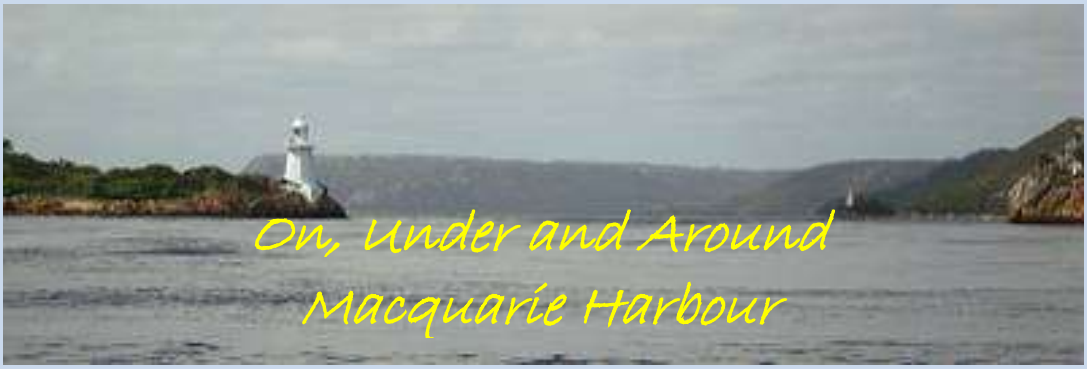
Habitat: rocky reefs
Depth range: 0 to >1,000 m
Size: 1 mm to 90 cm
Diet: soft-bodied invertebrates

Sea spiders, or pycnogonids, are members of the phylum Arthropoda along with land spiders. Despite looking eerily like their terrestrial ancestors, pycnogonids are less closely related to land spiders than scorpions or mites (although to the arachnophobes among you that likely doesn't make them any less repulsive). Pycnogonids have 4-6 sets of legs and a long proboscis which they use to suck the body juices from bryozoans, sponges, anemones and hydroids. Because of a virtually absent body, the organs are instead contained within their spindly legs.

A typical Tassie sea spider, *Stylopallene longicauda*
Photo © Emma Flukes

These creepy crawlies are found distributed extensively throughout the world's oceans and can be found down to several kilometres depth. Deep-sea specimens can reach sizes of almost a metre across. And you thought tarantulas were the stuff of nightmares. Thankfully, the species typically found in shallow water are only a centimetre or two across. Divers with keen eyes will regularly encounter them hanging out on bryozoans eating babies, drowning kittens and demagnetizing your credit cards.

West Coast Adventures - Part III



Marine Farms

For a change of pace its time for a roundabout diversion into the open harbour to see what lies in the middle reaches of this vast waterway. Macquarie Harbour has become one of the most intensively marine farmed areas in Tasmania. All manner of old ferries and barges have been pressed into service and converted into live-aboard supply bases for the many massive fish pens that dominate the landscape of the middle harbour area near Liberty Point. Not so long ago workers fed the penned fish by hand, but these days umbilicals connect the feed tanks to the pens and automation is creeping in. The work is often cold and lonely but its welcome work for a new generation that has been displaced from the mines. Hard working conditions are something West Coasters have been brought up to grin and bear.

Marine farming in Tasmania is growing rapidly and will soon outstrip the wild fishery in terms of value. As a job creator it's a winner too, as the wild fishery employs relatively few people by comparison and wild stocks are declining in many areas.

Due to the high labour and feed costs the fishery focuses not on volume but high value gourmet fish like Atlantic Salmon and sea run Trout. Touted at one time as an antidote to overfishing in the wild, locally it is adding to wild fishery production rather than replacing it. The wild fishery is often supplying low value species as fish meal for the Atlantic Salmon. There have also been quality and environmental concerns from excessive use of anti-biotics, and copper contamination from net anti-fouling treatments. The pens also have to be moved

regularly as nitrates building up from uneaten fish meal essentially poison the bottom under the pens.

Lower Macquarie Harbour is probably a good location for a fish farm. The bottom is deep, dark, muddy and pretty lifeless already. The harbour is also huge and largely deserted in many places, which reduces any adverse visual impacts and crowding out of other harbour users.

Swan Basin

Closer to Strahan we stop by Swan Basin to check out the bird life, but today at least it's devoid of swans. In 1815 James Kelly virtually lived off them during his circumnavigation of Tasmania. Not familiar with the area we also manage to ground on a sand bank and also do some prop remodelling on an unmarked reef. The Swan Basin area is studded with interesting small coves and islets. We settle near a long isthmus for lunch and admire the mountainous scenery and coastal tea tree groves.

The foreshore marine life is unsurprisingly thin. Only a few hardy shore crabs and blennies can withstand the frequent changes in salinity caused by the massive freshwater outflows that enter the harbour after heavy rains. The dark tannin-stained water also deprives the surface layer of light and algae is reduced to a fine slime on the foreshore rocks. The water is obviously still rich in nutrients and there are many schools of fingerlings exploiting the little-used resources of the bay before heading back out to sea again.

Ships Graveyard

I think Alison is hanging out for a café, so we head back to Strahan. Of course I duck off to explore every waterway along the way, keeping an eye out for the many relics of the mining era that I have heard are abandoned in the West Strahan area. West Strahan was always an active ship repair and servicing centre and for 100 years any disused vessel has simply been abandoned. Yesterdays junk has become today's maritime heritage. Alison doesn't seem to mind the delay as the sun is shining and it's a parenting-free outing.

Soon we come across bays filled with more modern flotsam, old barges, nets under repair, and shore facilities for the aquaculture industry. Even an old Sydney ferry seems to have been press-ganged for the needs of the industry, and is seeing out the last of her days in somewhat unbecoming servitude.

Soon we spot older and more fashionable 'heritage' junk amongst the rotting stumps of old jetties from the mining era. We come across the remains of an old slipway with vessels still lying rotten where they were pulled ashore at the end of their useful life. The hulks are so badly decayed it would be hard to say with certainty what they were, but the area is a known graveyard for several harbour lighters and smaller harbour steamers from the mining era.

The vegetation is so resilient it is even trying to reclaim this wreck along the foreshore

Along the harbour there was also much evidence of damage to the shoreline being caused by prop wash. Whenever the charter launches went by we were rocked by relatively large waves on this ordinarily placid inland harbour. In the Gordon River, restrictive speed limits have been needed to slow the rate of bank erosion that has in some places caused the riverbanks to recede by up to a metre a year. Now we are only losing the Gordon River riverine vegetation at the rate of a few centimetres a year. Over time, still a big impact on the local ecology. Tourists have complained about restrictions that cut the journey short before reaching the Franklin River sites, but this is to save some unique oxbow lakes that are being undermined by the prop wash.

Mill Bay

We assume that Mill Bay is named after an old nearby sawmill site, and the proof is soon found in the form of a large industrial boiler. This has been 'recycled' as a mooring for an equally defunct recent jetty.

All along the foreshore there is a large quantity of modern jetsom including a lot of plastic rubbish and beer cans. It will be a long time before any of this reaches the status of heritage. It might be easy to write off this litter as the ignorant acts of a few local bogans, but a lot of

this plastic includes luxuries like mineral water bottles. The locals don't pay $2 for water they can get for free from a tap. Litter is an environmental issue that at least some of the locals have taken readily to heart and they don't seem to enjoy this side-effect of earning the tourist dollar.

Pillinger

On this trip we didn't get out to the Eastern end of the harbour. The boat trip is a long, gas-guzzling, and uncomfortable ride. It's probably easier to visit Sarah Island by charter boat, and Pillinger by foot. I have done this trip before though.

One of my favourite spots is Pillinger. It's a "Raiders of the Lost Ark" style ghost town reached after a short and easy bushwalk along an old railway formation to Kelly Basin. This railway was once a rival to the ABT system at Strahan and led down the King and Bird River valleys to reach the harbour not far from the outflow of the Gordon River. It was here that James Crotty built his town of Pillinger. Crotty owned the North Lyell mine and had a long history of antagonism towards a former business partner, Bowes-Kelly, the owner of the Mt Lyell mine. Crotty had endured a hard life as an early pioneer of the field, while Bowes-Kelly was wealthy and privileged, so there was more to it than just business rivalry.

Crotty had a gift for convincing people to invest in his big ideas. Instead of building facilities that might service the whole mining field Crotty and Bowes-Kelly had to go their own way. Crotty expended huge sums on duplicating a railway, several towns, a smelter and harbours so that he wouldn't have to rely on Bowes-Kelly. Likewise Bowes-Kelly built the world most unique and expensive small railway in order to avoid having to pay money to Crotty for the use of his railway line. Unfortunately, one had a mine that was silica poor and sulphur rich, and the other a silica rich ore that was sulphur poor. The two had to cooperate to process their ore successfully. While glowing reports flooded back to London of massive ore deposits,

http://www.australiaforeveryone.com.au/places_towns_gh.htm

neither side produced a return to investors for many years. Crotty mercifully died before seeing his novel new smelting works fail dismally. The angry investors moved in and the North Lyell mine was sold to a much relieved Bowes-Kelly. Little did they know that Bowes-Kelly was only a few weeks away from bankruptcy himself and with more patience they could have bought his mine instead for a knock down price. If that had happened Pillinger would have become a major centre and Queenstown a ghost town.

Despite being a far more effective railway (if a little far away and difficult to reach) Bowes-Kelly doesn't seem to have taken much interest in his newly conquered North Lyell railway facilities to Kelly Basin. He had staked his reputation on his expensive and low capacity ABT railway to Strahan and his rival's railway was allowed to slowly fade away. When they finally abandoned Pillinger, the local people left behind everything that couldn't be easily moved. Railway carriages were simply abandoned to be reclaimed by bush.

http://picasaweb.google.com/lh/photo/WyW4bf61HxbhaZFy851u-g

Today Kelly Basin is a tranquil and remote bay visited by a few bushwalkers. Hopefully, it never gets too popular as that would take the adventure 'edge' off the experience. The only surviving building from this moderately large town are the ruined brickworks. On the eastern harbour there are extensive remains of the old wharves and a railway carriage sitting in the bush. The sister town of West Pillinger is a bush bash away across the harbour. This area is even quieter and the locals have made a fishing shack, "Reindeer Lodge", out of an old railway car. Around West Pillinger traces of the old railway yards can be faintly made out amongst the moss and manferns. Then, out of the blue, you come across an old flatcar, still seemingly waiting its turn to get to the wharf and load mine machinery from a boat that will never come.

Sarah Island

Not far away on the other side of the harbour is the old penal settlement of Sarah Island. James Kelly had reported large stands of Huon Pine in the eastern harbour as early as 1815, but it wasn't until 1824 that the colonial government set up a short-lived penal colony at Sarah Island to make use of this timber. Sarah Island was a secondary punishment prison and a shipyard.

Sarah Island was reserved for the 'worst of the worst'. It was place of punishment not reform, and assigned convicts in the eastern districts were educated to fear it. The authorities intended to create a place so severe that, "they will dread the very thought of being sent there". Isolated from the control of senior officers, the local commandants did little to control the excessive floggings. Since a normal working day could involve pushing Huon Pine logs down riverbeds in waist deep icy water, perhaps they had to be more inventive with their punishments to make them feared. Perhaps even crueller than the "cat-o-nine tails" was to be banished alone on nearby Grommet Island, where some of the inmates went mad from loneliness.

Despite their access to valuable timber, hardware and other supplies were expensive to transport to the island and the shipbuilding never really paid its way. The severity of facility also became an embarrassment. Within a few years the prison was closed.
Little of it remains except the standing wall of the old courthouse. A lot of effort has been put into making this a pleasant experience for charter boat tourists. Interpretive signs explain

legendary characters like Pearce the Cannibal, who has become something of a local anti-hero after tucking in to his companions in frenzied efforts to find a way through the impenetrable scrub and escape. After his first failed escape he confessed to eating his companions, but they thought he was faking it to get out of being sent back to the island. On his second attempt he kept a body part as proof, and got his wish to have his sentence abbreviated by the gallows.

As the prison was being closed down, one enterprising convict named Matthew Brady was left behind with a party to finish off the yard's last new vessel. No base ruffian, Brady was an ex-naval rating from Manchester probably left demobbed and destitute by the end of the Napoleonic Wars. He was convicted for stealing food. He bucked the system and ended up at Sarah Island. When the new ship was ready, Brady executed a carefully staged plan and stole it. They sailed it to the eastern districts rather than trying to escape overseas. There Brady embarked on a vengeful rampage. He formed escaped convicts into a mounted detachment rumoured to be up to 100 strong at times, and led it with Royal Navy style discipline. He robbed and could be violent even to his own men, but he wasn't just a plunderer, he also wanted to punish the system. He burned the haystacks and farm buildings of prominent wealthy settlers and threatened hated figures in the convict establishment with assassination. The more timid settlers threatened to abandon the colony unless something was done.

Eventually, his gang was infiltrated by informants and Brady was captured and executed. Governor Arthur celebrated his demise by banning a book that had already been published romanticising Brady's exploits, but he couldn't stop the locals from naming a lake and a mountain after him.

I can imagine Brady being at home on the West Coast if he was alive today, although as a man of some ingenuity he would probably have a computer and an on-line scam asking for your PIN numbers. That's progress for you.

Summary

So what so special about Macquarie Harbour? Well, head up to the height of a satellite to answer that. You will then see one of the largest natural harbours in the world. It's just vast. To cap it off it is surrounded by one of the largest remaining wilderness areas in the world. Even the view from the satellite is still marred by the grey scratchings and devastated forest areas that mark the harsh efforts of man to subdue this wilderness. Are these areas a curse upon the landscape, or just another colour to add to the palette of our experience? Whether it meets our modern values or not, it happened and industrial development has become part of the whole picture. Elements of it are as intriguing as the wilderness that surrounds it.

So have a go at the West Coast, but bring a fine scale map, some notes on far away adventurous places buried in tortuous scrub. Load up also with a dinghy, and a history book or two. A sagging adventure–stained hat will add suitably to the 'cub explorer' image.

The apparent sameness of roaring flat-out past riverine forests, or driving speedily through declining industrial towns with averted eyes will pass away. You may then understand that the 'image' in the brochures is only the thin surface layer of this interesting area. Like all complex things it takes time to understand and it's a mining area, the riches are found when you dig deeper.

Maugean Skate - Endangered Species

Plate per CSIRO

Zearaja maugeana, also known as the Maugean Skate or Port Davey Skate, is a medium-sized primitive skate. Males reach a maximum size of 70 cm, females 84 cm.

The Maugean Skate is the world's only skate known to inhabit brackish water.

The Maugean Skate inhabits two small estuarine systems, in Macquarie Harbour and Bathurst Harbour, in southwest Tasmania and they may be two separate populations. The total range of the species is thought to be no more than 100 km² and the population is estimated at 1000 individuals. The species inhabits low-nutrient brackish water, 5–7 metres deep in the shallower upper regions of the estuaries.

The main potential threats to the Maugean Skate are trace metal pollution from historic mining operations in Macquarie Harbour; incidental capture in nets; the introduction of non-native marine species; changes to the water nutrient levels through discharge from cruise ships and fishing vessels; and an increase in tourism pressure in these areas.

MOONBIRDS

Short-tailed Shearwater (Mutton Bird)

Sources; DPIW website

The mutton bird as it is often known, is a member of a group of 60 medium to large seabirds in the family Procellaridae. This family includes species such as petrels and prions.

Approximately 23 million short-tailed shearwaters breed in about 285 colonies in south-eastern Australia from September to April. Eighteen million of these arrive in Tasmania each year. Early accounts suggest that the population was once considerably higher. In 1798, Matthew Flinders estimated that there were at least one hundred million birds within a single flock sighted in Bass Strait.

Shearwaters are good swimmers, but they have difficulty moving on land or taking flight in windless conditions. Shearwaters are often seen floating in large 'rafts' while feeding off the shores of Tasmania.

The majority of birds fly north along the western part of the Pacific Ocean to the Arctic region and return southwards through the centre of the ocean. They head to the poles to take advantage of plentiful supplies of krill. They are capable swimmers and are able to dive to 10 meters. The birds travel about 15 000 kilometres in each direction annually. They have been known to fly this distance in just six weeks. They arrive in Tasmania in late September/early October and choose a mate at about 5 years of age. Each bird generally remains with the same partner throughout their life, although the "divorce rate" does increase to nearly 25% among pairs that fail to produce young.

There are known to be at least breeding 167 colonies in Tasmania and an estimated 11.4 million burrows. In early November they leave the colony to spend some time feeding before returning to lay a single white egg in late November. There is a distinct peak in egg laying at 27-28 November. Males and females take turns incubating the egg. Satellite trackers on the backs of the birds, have discovered that they make short daily fishing trips until the chick is very fat and then the adults make regular 'holidays', four or five throughout the breeding season, to as far away as Antarctica to build up their own body weight.

The young chicks hatch in the third week of January after an incubation period averaging 53 days. Both parents participate in feeding the chick. The chick quickly puts on weight and before the departure of the parents, is almost twice the weight of an adult. The adults depart from early April leaving behind the young birds still covered in down. Two to three weeks after the parents have left, the young birds begin their unassisted migratory flight.

The muttonbird is one of the few Australian native birds that is commercially harvested. The chicks are taken during the period 27 March to 30 April. The industry was established by early

European sealers and their Aboriginal families and today forms an important part of Aboriginal culture in Tasmania.

Are all our mutton birds dying?

By Mike Jacques

Phil has recently reported lots of mutton birds being seen washed up dead along Bass Strait. Last year around this time, we had similar reports down south. Apparently this is a regular occurrence. Its only the severity and frequency of the events that might not be normal.
Professor Nick Klomp from Charles Stuart University has been tracking their behaviour,
"... birds during their non-breeding season, during our winter, circumnavigate the Pacific, a huge tour from their breeding sites along the eastern Australian coast... When they come back if they hit some storms or some adverse weather, they're in really bad shape, and so they die, and we find them washed up on our coast."

Young birds inexperienced at finding food and not use to the long journey make up the majority of the beach carcasses. Also, the average lifespan of shearwaters is 15-19 years but birds can live up to 38 years. Despite this long life there are millions of mutton birds and some do get weak and die naturally each year.

As well as these 'routine' losses, cyclical mass-mortality events have been recorded probably related to changes in food supply. In the past, big mortality events have occurred in 1964,1973-1975 and 1983-1985 in Japan; and in 1934, 1942 and 1954 in Australia. During 1997, hundreds of thousands of emaciated shearwaters died in the south-eastern Bering Sea. Some concerns have been raised that climate change might be exacerbating annual fluctuations in food supply, making it hard for young birds to build up weight before the big flight. What we probably lack is consistent monitoring and detailed studies to separate the 'natural' from 'unnatural' changes.

Sun-loving Giants

By Emma Flukes

Ever stopped to wonder what the *biggest* bony fish in the ocean is? Not in length – that honour goes to the fascinating serpent-like oarfish – but in solid mass of fish? No, it's not a shark [cartilaginous] or a whale [mammal]. It's not even a tuna, marlin or the enormous flathead you caught on the weekend. It is in fact the humble oceanic sunfish, clocking in at an average weight of 1,000 kg and reaching up to a massive 2,300 kg and 4.2 m in width.

If you're not big on weird and wacky fish, you might be wondering why the sunfish is measured in *width* rather than in *length* like most other fish. Unfortunately for the sunfish, it lucked out majorly in both the looks and functionality department and has no tail. Looking more like the victim of some horrific half-body amputation than a gentle oceanic giant, the sunfish resembles an enormous swimming dinner plate and uses paired dorsal and ventral fins to cruise along at breakneck speeds of up to 3.2 km per hour.

Supermodel material? The oceanic sunfish.

Favourite hobbies of the sunfish include eating massive quantities of jellyfish, sunbaking on the surface, getting hit by large boats, mistakenly eating plastic bags, and breaking rudders of Sydney Hobart yachts. Sadly, they are a huge bycatch component of drift gillnet fisheries,

comprising a massive 75-90% of the total catch of the Mediterranean swordfish industry. To combat a diet with virtually no nutritional value and a lifestyle that lends itself to bycatch, the sunfish produces more eggs than any other known vertebrate in the world – up to 300 million at a time.

The true oceanic sunfish, *Mola mola*, is distributed widely throughout tropical and temperate oceans across the globe including Tasmanian waters. Less famous is its slightly smaller cousin the southern sunfish (*Mola ramsayi*) which occurs only in the Southern Ocean. *[The exact difference between the species is something to do with the number of ossicles in the tail fin.]*

A lucky group of Tas Uni Dive Club crew were diving off the Lanterns at the mouth of Fortescue Bay a few weeks ago when they encountered a sunfish peacefully finning along at around 20 m depth. I thought perhaps they'd confused a wrasse with a sunfish – easy mistake to make – but photos were taken and it was definitely one of the voracious jellyfish killers. Sightings of sunfish by divers aren't common in Tasmanian waters, although they are reportedly littered all throughout Bass Strait and can be quite a boating hazard (and an excellent alibi for boating insurance claims). When not sunning themselves at the surface, sunfish are usually found beyond recreational diving depths down to 600 m. This one was likely employing the cleaning surfaces of some reef fish to remove parasites from its skin.

Photos by Tania Mendo Aguilar

Sunfish MEMENTOS

A review of historical sources and internet accounts seem to suggest that seeing sunfish is a Summer/Autumn thing, with sightings peaking in March/April. Here is one account from an old newspaper digitised on the TROVE website.

In March 1920, three local timber merchants took a 28ft half enclosed wooden sail boat known as a "Dory" around to Port Davey. They sailed along the south coast without incident until they reached South West Cape,

"...it was a grand sight with its rugged walls rising shear from the foaming seas which thundered at its base. Quartz cliffs sparkled in the sun for hundreds of feet. There were numerous sunfish about one of which almost collided with the boat also great excitement was occasioned by the discovery of a white mass floating alongside which was thought to be ambergris but on being hauled on board proved to be a species of jellyfish hitherto not seen by those on board".

Messages of Wisdom from the 1960's

Real Men do gear maintenance in their fins or virtually in the nude.

The lighter side of global devastation

Guilt Trips - my life as a low carbon footprint hermit

I must be able to save the world single-handed. Perhaps, it needs some form of penance to set things right. If only I were willing to undergo some radical lifestyle changes, we would all be rescued.

I decided that, tomorrow, I would start a new low carbon diet.

Well I dieted for about ten minutes before deciding to turn on the TV and boil some coffee, bad boy, but the average Tasmanian house creates only 3kgs of CO2 for every 100kWhs of Hydro electricity it uses. 100kWh is about my total monthly usage on light and appliances. Hot water can be another 300kWh. Lucky I'm not in Victoria where that usage would cost the planet a whopping 150 kgs for every 100 kWh of brown coal power, so when Great Lake or Lake Gordon water storages are low and we are using dirty Victorian power, that's a lot of carbon.

Despite Tassie being a low carbon energy exporter, we can use too much peak load power when we all arrive home at the same time and switch on the appliances and air conditioning. Then, they fire up the Tamar Valley natural gas plant. That is a slightly more nasty 20 kgs of CO2 per 100 KWh.

Thanks to renewable Hydro, my appliances are pretty guilt-free aren't they? No, if I hadn't needed that power they would have exported the green power on Basslink at peak times to Victoria and saved the CO2 there.

Perhaps I should pay $3000 for solar hot water, or maybe the full photo-voltaic micro generation plant. I hope it only takes a few decades to recover the costs of the full set up, if it lasts that long.

I can also turn off the electric heater. I have a combustion stove that uses about 1 tonne of firewood per month, let's light that instead. Let's not, as it's another 120 kg of carbon for all that wood.

I need to earn some money to pay for my solar plant. I drove to work and back and realized that I might have missed the point worrying about the Hydro power. I'm a seachanger, that's 70km and 20 kgs of CO2 per trip to Hobart. That one day of travel produces as much CO2 as all my lights and appliances for a month on Hydro power, or even gas. I suggested I could work from home a few days a week, and they suggested I could collect my pay instead and stay home full-time.

I could have cut that CO2 in half by taking the bus, even if that only runs 2 times a day at South Arm and I have to make 3 changes and the bus is either late or I am. We might need a more viable public transport system to go with that idea. Not a bad option if you live in the CBD, or maybe I can walk or cycle part of the way.

Work wanted me to go to Melbourne, and after being threatened with the sack I couldn't say "no". That's 230 kgs of CO2 for a return flight. It was an essential training conference, something about "knowing yourself in the workplace through self-examination". I could have driven there for that CO2 if there was a road, or even better a comfortable snooze on a carbon-friendly train if it had been the English Channel rather than Bass Strait.

On the plane I paid $15 extra in CO2 mitigation to plant 2 trees in Kenya as they would soak up the CO2 for my trip. Here's hoping the trees actually got planted and will stay in the ground and not be burned out in the next civil war, but you can be too cynical. I also suggested that the hosties save CO2 by using recycled clothes instead of new uniforms. I also read from that bible, Al Gore's book, and convinced the rest of the passengers that it was hell and damnation if they didn't reject packaging. I was arrested by the Federal Police on landing.

Misunderstanding corrected, upon my release I decided to boycott the training venue as I am now a carbon-warrior. It sounded too air conditioned with power hungry lifts and excessive lighting, computers, printers and plasma screens everywhere. Not for me, damn the dismissal notice. Thankfully, I didn't get fired. Instead, I managed to convince them to explore for a low carbon venue. It could be fun.

Melbourne has trams and trains galore, so I can finally have convenient guilt-free transport for the same carbon as the South Arm bus. We stopped in every café and finally found the Puritans Café where I could wash away my guilt with free trade coffee while wearing my second-hand 'no child labour' sweatshop T-Shirt.

While there I convinced the CEO to forego those American grapes and that bottle of imported Moet and Chandon. I ordered organic vegan instead, local food, not out of season stuff imported by burning large amounts of fuel. I was concerned about the problems of feeding the planet's billions with low productivity organic agricultural techniques but they told me not to worry.
The waiter also convinced me to reject the latest electrical goods and fashions. I had to hate packaging and express love for recycling and growing my own food. I instantly confiscated all the Blackberrys from the executives in the room and promised to find an environmentally

friendly way of recycling all that lead solder in the circuits. Instead, we planted mung beans in the road reserve using the café leftovers as compost.

On the plane no-one would sit with me in my recycled clothes and freshly compost stained fingers, but that recycling and local food production was a reduction of 150 kgs of secondary CO2 use a month, nearly 3 weeks worth of commuting CO2. If only I hadn't eaten that Big Mac on the way to the airport.

I then sent the car for recycling and stayed at home not visiting anyone. It was a useful hobby to go out at night and empty trash cans looking for recyclable goods, but I had to stop when I started barking at cars and became frightened of physical contact with humans.

Summary

It's definitely a worthwhile thing to work out your carbon footprint and know your impacts. Often you can make simple decisions to eliminate unnecessary and harmful things, but it's probably just as useful to be greedy, tight-arsed and health-conscious and forget trying to be a martyr.

Basically highly energy-laden activities and high levels of discretionary consumption (that means buying things you want rather than need and end up leaving in a drawer three weeks later) aren't cheap, are rarely healthy, and aren't always more fun than the alternatives.

We save money for other more fun things whenever we cut back on spending for energy and useless frills like excessive packaging and the latest gadget that costs 100% more to do a 3% better job. We improve our health and stave off that early heart attack when we walk and cycle to the shop or work some times. We'll even like it after the first few sessions. Eating local fruits and vegetables is also healthier and good for farmers.

Having said that, is it really enough to be the one aware and upstanding guy or gal in the world? [*and is it a bit boring too, Oops did I say that?*]. The government has to search for the right balance between economic imperatives and environmental needs. A carbon penalty will make the mainstream stiffs like me go out of our way to have solar hot water and smaller cars. It might seem like an inconvenience at first, but life will quickly go on as usual and we will soon wonder what the fuss was about.

So have fun, save money, exercise your heart muscle. Cycle to your MPs office to give them a low carbon verbal roasting about a viable carbon-trading scheme.

"Adopt a Reef" Pilot Program

Ever wanted to know a bit more about what happens on reefs?

Last month we discussed a project idea to learn more about reefs. Marine Life Magazine will be giving progress updates on how things are going.

So far basically a few divers have been out in the Zodiac to do an initial series of low-key exploratory dives at Primrose Sands.

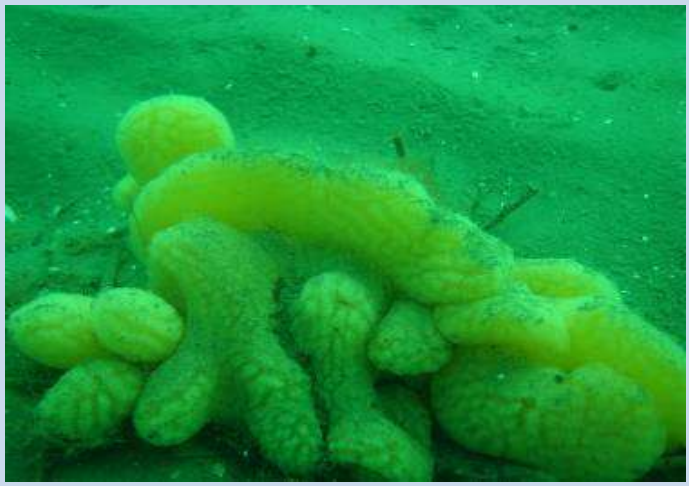
The exciting news is that we have found some Red Handfish, one of the rarest types of Handfish and previously believed to be extinct in the Frederick Henry Bay/Norfolk Bay area.

WATCH THIS MAGAZINE FOR MORE DETAILS or email michael,jacques@transend.com.au if you would like to be on a circular list for activities (mostly dives at this stage).

An exploration of the sands of Primrose Sands

By Mike Jacques

I've started my involvement in the project by trying just to have a few dives with some easy-going and curious people, take some photos, learn and have fun. I've tried to take pictures of anything that looked a bit odd, then tried to make sense of it from the limited reference sources that I have handy. Basically, it turns out that every picture tells a story. So here's a bit if a first installment of 'holiday snaps'.



Inshore sandy and sediment covered habitats are very common in Australia and cover more area than reefs. Most sand and mud dwelling animals rely on food that has washed down from coastal areas, like decomposing leaf litter, algae, and other dead animals. These coastal and estuarine areas can sometimes be very productive.

A location near a sheltered muddy estuary can be about 100 times more productive than an area of clean sand along an exposed ocean coastline. This food washing away from the coast is spread around on tidal currents, and may eventually collect in certain areas where the current along the seabed is disturbed. This disturbance can be caused even by a small object a few centimeters big, like a sponge, or even a hole in the sand made by a browsing stingray. This means that while life can be very rich out on the sand and mud way from the shore, it is often patchy.

Every buried shell or stone provides a holdfast for life. In the above photo an isolated sponge has made a tenuous home on a buried object, approx 7-8M off the beach. The sediments

collect behind this obstruction and the sponge in turn attracts worms and bivalve molluscs (shells).

Most of the life on the sandy and muddy bottom consists of very small creatures like bacteria or single-celled plants that feed on the nutrients washed into the ocean. These small creatures in turn become food for any larger animals that are adapted to take advantage of life on the mud, but life for these bigger animals isn't easy.

The sand and mud will move about after big storms so its hard for fixed bottom-dwelling animals like sponges to establish themselves.

In approx 7M close to the reef near the Primrose Sands shop, strong winds seem to have exposed some buried animals. Out in the daylight this cockle appears not to have the strength to re-bury itself. It is a delicious treat for someone. Probably dying, its smell has attracted a couple of scavenging snails (on the left centre of the picture).

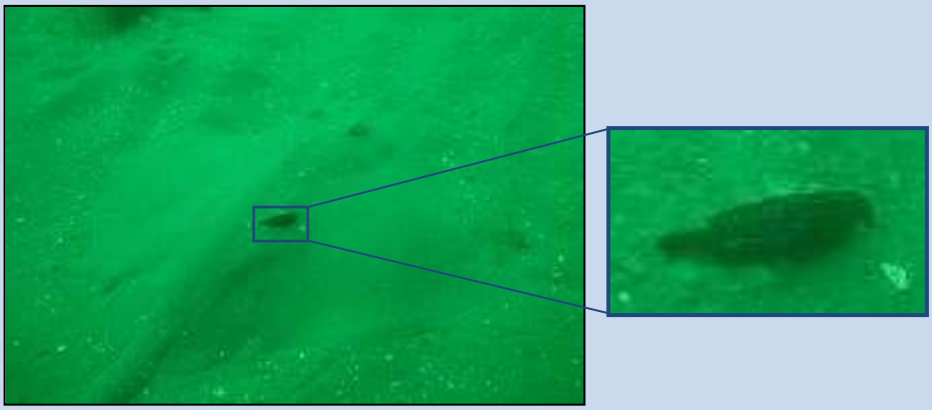
A larger animal that might move about freely during the day on a reef will find the sand and mud plains too barren to hide from predators. It is very hard for a bigger animal to bury down into the sand and hide. If an animal buries itself too deeply, the supply of oxygen can be poor in the lower levels, so they often can't hide for long.

Some animals like worms and shells have adapted to this kind of life and they thrive in great numbers out on the sediments. They have changed their body shapes, or evolved special features like long breathing tubes. This allows them to bury themselves easily and hide for long periods. Animals that have adapted in this way are now much safer than their reef relatives and are more likely to die of old age.

A marine flatworm, about 25cm long, out during the daylight hours and one would think an easy meal for a fish? Perhaps its poisonous to eat, any ideas readers?

Rather than burying themselves, larger animals like stingrays have evolved special camouflage, or venomous spines to protect them against predators. In about 9 metres off the beach at the mouth of the bay, the bottom was particularly rich in nutrients. Lots of small seaweed clumps can be found and the bottom was showing signs of plenty of activity from patrolling rays. A harmless Whitley's Skate was seen carrying a marine leech on its back.

Marine leeches are poorly studied and little is known about them, but they seem to pick on rays in particular.



Surprised in the low vis, I saw a 2m wide Smooth Stingray with its venomous tail spine reared up defensively 'Steve Irwin style'. It moved off quickly, only because I couldn't get out of the way faster.

Animals like the octopus have changed their habits or camouflage to be less vulnerable to predators out in the open. Some come out of hiding only during the night like octopus. This little dumpling squid is perfectly adapted and able to adjust its colour to the seaweed cover that is available. This one was seen in 7.5 M off the beach, hiding among the green seaweed clumps.

Its usual to see 2-3 smallish flathead every dive. They are heavily fished in the area. Flathead are suspected predators upon juvenile Spotted Handfish.

Divers and fishermen only encounter the stuff that is big enough to be seen with the naked eye called "megafauna", and then usually only the relatively small number of animals that can be seen on the surface during the daytime.

That's just some of the things seen on one dive during the day. Night time, well that's a whole different story.

(primary source Edgar's Australian Marine Habitats)

DO YOU HAVE AN INTEREST IN LEARNING MORE ABOUT HOW REEFS WORK?

Recently relocated Red Handfish, not seen in Tasmania for ten years

We invite you to come out with us for a laid-back dive at Primrose Sands. It's pretty informal and meant to be fun.

You just need to bring your own scuba gear and compact camera if you have one. We will try to provide boat space, and maybe some input from visiting local scientists, marine science students and naturalists to help explain all the things you see on the dive.

Why Primrose? It's close to Hobart and has some unique, endangered, weird and wonderful animals. The diving is also pretty colourful, easy and relaxing.

The minimum pre-requisite is that you must be A CURIOUS PERSON. You don't need to be super academic or experienced, just a qualified diver who is modestly competent in the water.

We organise the dives when we can be bothered, so if you want to get notice of dives, drop me an email at marinelifetassie@gmail.com.au .

WHAT'S ON in Summer 2010

Amalgamated club calendars

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. If you're cranky because your club calendar isn't appearing here, it's because you haven't forwarded us the details.

December 2010

TUDC – Wednesday 1st – Night dive at the Hobart Docks

TUDC – Monday 6th – Early morning dive at CSIRO

TUDC – Saturday 11th – MV Lake Illawarra

TUDC – Sunday 19th – Christmas BBQ function at Tinderbox (plus dives)

January 2011

TUDC – Saturday 8th – MV Lake Illawarra

Leven Scuba Club may also have ad hoc dives planned and go out most calm weekends.

TUDC dives Register online at http://www.tudc.org.au/diving/dive_calendar.php

Hyperbaric Chamber information night

"Diving in Depth"

Thursday 2nd December 2010 from 6.30 PM to 9 PM

Tasmania University Clinical School, 43 Collins Street Hobart, Keith Millingen Lecture Theatre. Take the footbridge over the Hobart Rivulet. Entry by Gold Coin Donation please

6.30 PM The New SPUMS Recreational A/Prof David Smart Medical Co-director HMU
Medical Risk Assessment

6.50 PM Ear examination in divers Dr David Cooper Medical Specialist HMU
Practical Demonstration

7.10 PM Diving Emergencies - Dr Anna McKinlay Senior Registrar HMU
First Aid and retrieval

7.30 PM Hookah Diving Disasters and A/Prof David Smart Medical Co-director HMU
Carbon Monoxide poisoning

7.50 PM Trimix Deep Diving Research Corry Van den Broek Facility Manager HMU

8.10 PM Evolution of Treatment tables A/Prof David Smart Medical Co-director HMU

8.30 PM Hyperbaric Chamber visit, Q and A and close by 9 PM

RSVP by 30th November – Department of Diving and Hyperbaric Medicine RHH
Phone 62 228322 Fax 62 227268 Email carol.baines@dhhs.tas.gov.au

Essential news and links for the perfect day out

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

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 involves 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*

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