MARINE Life

June/July 2011
Issue 13

THE Magazine for wet people

Conservation, Marine Photography, Science News,
Coastcare, Kids Fun, Crazy Critters, Maritime History...

Marine Life magazine

Our Goal

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

(It could also be part of an international multi-national corporate conspiracy, but it isn't)

The Editorial Staff

Michael Jacques, Generalissimo in his own legion of one, fighting spin and superficiality (other than his own)

Emma Flukes, locked in an intergalactic struggle against silly and time-wasting mutants.

Geoff Rollins, one man semester-long break, fighting to get out of homework.

Phil White, tasty – but principally to small pescatorial pests, struggling not to end up as dessert.

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.
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Cover Photo ; Ocean Perch with soft coral in Tamar River, Emma Flukes

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NEWS

TAFI no more

With the signing of a new agreement, TAFI has ceased to exist as it has formally become part of IMAS (Institute for Marine and Antarctic Studies). The Minister for Primary Industries and Water, Bryan Green, said the agreement would ensure the highest quality research and development services for the primary industry sector through its partnership with the University of Tasmania.

UTAS Acting Vice-Chancellor Professor David Rich said that 'the incorporation of TAFI into IMAS will continue to build the reputation of UTAS and Tasmania as the centre for Antarctic, marine, and fisheries research that is both nationally and internationally recognised,' he said.

IMAS Executive Director, Prof Mike Coffin, said that in a little more than a decade TAFI had received national and international renown. 'TAFI's research will now continue under IMAS and importantly our strategic focus on key industry and government needs will remain a key focus of our work under the Agreement'.

IMAS consists of two Centres: Fisheries, Aquaculture & Coasts, and Marine & Antarctic Futures. As Director of the Fisheries, Aquaculture & Coasts Centre, Professor Buxton will continue to lead fisheries and aquaculture research within IMAS. For more information about IMAS, go to www.imas.utas.edu.au.

The Derwent Has Gone Feral - Officially

Reef Life Survey (RLS), a national marine science and conservation program, recently undertook an extensive survey of marine life in the Derwent, and in doing so engaged the skills of an active and dedicated team of local volunteer SCUBA divers.
The comprehensive study recorded all the fish species and larger invertebrates (such as sea stars, sea urchins and sea shells) on areas of rocky reef within the Derwent Estuary. Dr Rick Stuart-Smith, from the IMAS said the results were startling.

'... of particular concern is the abundance of fish and invertebrate species that are not native to Tasmania - they are so common in some areas they totally dominate,' he said. 'Not a single native species was found on the sea floor in some areas of rocky reef close to the Hobart Port.'

The study also looked at the marine life in Sydney Harbour and Port Phillip Bay and discovered that, surprisingly, rocky reefs in the Derwent contained many more introduced fish and large invertebrates than the bays at the doorstep of much larger cities.

The results were not all so sobering though, with some rare fish species also being recorded by the RLS team, and areas of rocky reef in the lower estuary appearing reasonably healthy. More information on the Derwent Estuary is available at www.derwentestuary.org.au . For more information on the Reef Life Survey, please visit www.reeflifesurvey.com

Australian Coastal Society NEWS

Hi everyone,

As you may be aware the Caring for our Country program is currently being reviewed until 20 May. ACS Tas is contributing to a submission that will be put forward from the National ACS executive, however we would encourage ACS members/mailing list people to make submission in their own right, if you feel so inclined. The Caring for Country program has a significant impact on the level and type of investment in the coastal zone and so it would be great to put forward the knowledge and experience amongst stakeholders on this list.

There is a Caring for Our Country discussion paper available (www.nrm.gov.au/review/review-discussion-paper.html) which sets out six main discussion points. Not all of these need to be responded to, so submissions can focus on the areas of highest relevance to you.

It is my understanding the review will inform future programs (post Caring for our Country 2008 -2013). Feedback can be at the strategic or operational level.

Regards,Jill Pearson
Secretary, ACS Tas

CSIRO NEWS

Latest Climate Change Info Captured in New CSIRO Book

CSIRO today will launch Climate Change: Science and Solutions for Australia to help inform business, government, and the community about the many issues that need to be addressed in response to climate change.

The book highlights the importance of climate change as a matter of significant economic, environmental and social concern in Australia and provides the latest information on international climate change science and potential responses.

Read more at: http://www.csiro.au/news/New-Climate-Change-book.html

Oceans Hoarding our Excess Heat

ABC News

A new study has found that 90 per cent of the excess heat being absorbed by the planet is being stored in the oceans. More than half the excess heat being absorbed by the earth's oceans is being stored in the southern hemisphere. Using more than 3,000 robots known as argos, scientists have set up a monitoring system that can venture deeper into previously unknown parts of the world's oceans.

The robots can also confirm that ocean temperatures are rising.

Only seven years of data has been collected so they are yet to confirm any long-term trends of global rainfall and temperatures.

Upcoming Antarctic Events

The 3rd International Forum on the Sub-Antarctic in August 2011 will bring together scientists, academics and administrators to discuss the future of the Sub-Antarctic region, its global significance and value. The venue is the Hobart headquarters of the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR).

Fur seals navigate Bass Strait pipes

By Selina Bryan per ABC News

Australian fur seals from Kanowna Island, in Victoria, are using Bass Strait pipelines to find food and navigate through the water.

Scientists presented their findings at the fourth international bio-logging conference in Hobart this March.

The Deakin University researchers are using 'Crittercams' and GPS tracking devices to find out what seals are getting up to beneath the surface. One video shows a female seal swimming from Kanowna Island off the southern-most tip of Victoria, across Bass Strait to Tasmania using an underwater gas pipe to navigate.

The researchers are monitoring how much time seals are spending around underwater infrastructure. Deakin University's Associate Professor John Arnould says the female seal could be seen chasing fish along the pipeline. Bass Strait hides a range of pipelines, including electricity, power and gas. It is also home to a growing number of seals.

"The Australian fur seals are recovering very slowly from over-exploitation that ended in the early 1900s," Dr Wheatley said. Dr Arnould believes the pipelines are improving seals' foraging

in the fairly barren Bass Strait by attracting other marine life. Dr Wheatley says they are hoping to document more seals showing similar behaviour over that time.

Fishermen oppose new restrictions

A draft management plan for the fishery proposes reduced catch limits in heavily fished areas in the state's east and lower possession limits for non-licensed fishers. The Primary Industries Minister, Bryan Green, told Parliament rock lobster fisheries face significant challenges. "Following the introduction of a quota in 1998, stocks had been rebuilding in a positive manner," he said. "However, since 2006 the stocks have declined. "There have been fewer mature and juvenile lobsters to support both recreational and commercial fishing."
Commercial rock lobster fishermen are demanding more scientific proof that a maximum size limit will help reduce urchins which are destroying lobster habitats. Tarfish (the recreational body) have made a statement that seems to be generally supportive.
Disagree? Agree? Have your say at http://www.dpipwe.tas.gov.au/inter.nsf/WebPages/LBUN-7WS26A?open

Fewer Big Fish in the Sea

ABC News

Fewer big, predatory fish are swimming in the world's oceans because of overfishing, leaving smaller fish to thrive and double in force over the past 100 years, scientists have said.

Big fish, such as cod, tuna, and groupers have declined worldwide by two-thirds while the number of anchovies, sardines and capelin has surged in their absence, said University of British Columbia researchers. "Overfishing has absolutely had a 'when cats are away, the mice will play' effect on our oceans," said Villy Christensen, a professor in the UBC Fisheries Centre who presented the research findings at the American Association for the Advancement of Science annual conference in Washington.

"By removing the large, predatory species from the ocean, small forage fish have been left to thrive." The researchers also found that 54 per cent of the decline in the predatory fish population has taken place over the last 40 years.

Mr Christensen and his team examined more than 200 global marine ecosystem models and extracted more than 68,000 estimates of fish biomass from 1880 to 2007 for the study.While the number of small fish is on the rise, the little swimmers are also being increasingly sought after for use as fishmeal in human-run fisheries, Mr Christensen said.

"Currently, forage fish are turned into fishmeal and fish oil and used as feeds for the aquaculture industry, which is in turn becoming increasingly reliant on this feed source," he said.

"If the fishing-down-the-food-web trend continues, our oceans may one day become a 'farm' to produce feeds for the aquaculture industry. Goodbye, wild ocean!"

Reef Life Survey

Spotted Handfish Surveys – Derwent River, 12th-13th March 2011

By Toni

The Derwent Estuary Program recently initiated a recovery project for the endangered spotted handfish, with RLS assisting to establish a core group of local divers that can assist in monitoring a couple of key handfish populations in the Derwent Estuary. The second survey weekend for this project was held over the 12th and 13th March to survey handfish not far from the centre of Hobart and, like the first, was incredibly successful.

We had an overwhelming response from keen experienced divers for this round of surveys, which meant that we ended up with quite a large team – Daniel Beard, Sylvia Buchanan, Tim Crawford, Emma Flukes, Amelia Fowles, Mark Green, Keith Martin-Smith, Rita Silver and Rick Stuart-Smith. Having a large team was great in terms of what we were able to achieve; allowing us to survey 40 transects (each 100 x 3 m), covering a total of 1.2 Hectares of the Derwent Estuary sea floor! Unfortunately it also meant that Mark Stalker, the skipper, had his work cut out keeping up with setting and retrieving transects and picking up and dropping off divers! Fortunately he has some great assistance on Saturday from Ian Buchanan, a Melbourne RLS diver down for the weekend. Together they did an unbelievable job in allowing it all to run smoothly. A massive thanks once again to Mark Stalker and Veolia Environmental Services for their support.

Twenty two spotted handfish were seen along the 40 transect lines set, plus two others seen off line while working in the area. Similar to the previous survey weekend, these fish were not distributed uniformly along the lines, but occurred in patches. There were 5 transects along which multiple handfish were recorded; one with 5 individuals, one with 3 and 3 with 2 each. There were 27 transects surveyed without any handfish recorded at all.The average size was slightly greater than for the previous survey weekend at 85 mm (compared to 75 mm in January), with five fish recorded at 100 mm or more.

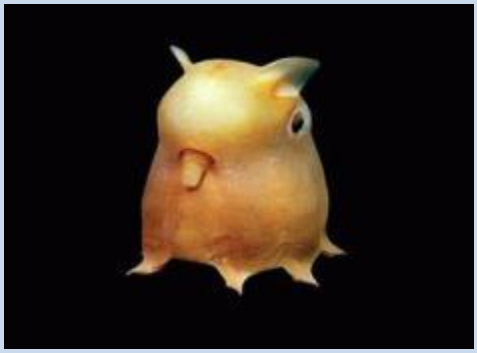
The next activity for the project will be to plant artificial spawning substrate in parts of both the areas surveyed and these areas will be monitored during the breeding season. Updates from ongoing activities will continue to be posted here in the news section of the RLS website, but please contact either RLS or the Derwent Estuary Program (www.derwentestuary.org.au) if you would like any more information on the project activities or results….

Serious Kids Stuff

By AMY

Weird Animals

Dumbo Octopus



The octopuses of the genus *Grimpoteuthis* are also known as "Dumbo octopuses" from the ear-like fins, resembling the ears of Walt Disney's flying elephant. They live at 3000-4000 meters deep.

They hover above the sea floor, searching for worms, shellfish, and small crustaceans. They move by pulsing their arms, shooting water through their funnel, by waving their ear-like fins, or any combination thereof.

Lumpfish

PER Aust Museum website

A species of lumpfish photographed in an aquarium at the Okhotsk Sea Ice Museum, Abashiri, Hokkaido, Japan.

Lumpfishes occur in northern regions of the North Pacific and North Atlantic oceans. They are characterised by their pelvic fins, which form a sucking disc. The fish in the image is using its sucking disc to hold onto a rock.

Icons of Marine Conservation

Popular media has been important in showing people a world they do not otherwise see.

SpongeBob SquarePants

SpongeBob was created by a marine biologist and is about various animated friends living in the underwater city "Bikini Bottom". The idea germinated in a comic strip *The Intertidal Zone*, and was later morphed into an animated series that has became Nickelodeon's most popular kids show after it was first aired in 1999.

In 2005, a promotional video showed SpongeBob singing together with other characters to promote tolerance. An evangelical group has attacked SpongeBob as an advocate for certain

topical and supposedly naughty life choices. Despite this John H. Thomas, minister, said he would welcome SpongeBob into their ministry *"Jesus didn't turn people away. Neither do we".*

[What!, even if his little animated feet leave wet patches on the carpet? - Ed].
[he's only a cartoon you know – Amy]

FISHING HOOKS

Famous fishing quotes

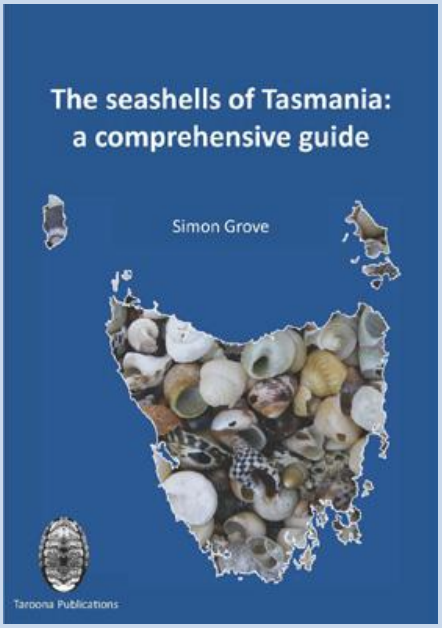
Ok, bring out those blank tea towels and screenprinter, and you'll be in business selling tourist souvenirs.

- *When you fish for love, bait with your heart, not your brain. ~Mark Twain, 1898*
- *People born to be hanged are safe in water* ~ The Wit and Wisdom of Mark Twain
- *Many men go fishing all of their lives without knowing that it is not fish they are after.* - Henry David Thoreau
- *Fishing is boring, unless you catch an actual fish, and then it is disgusting ~ Dave Barry*
- *Even eminent chartered accountants are known, in their capacity as fishermen, blissfully to ignore differences between seven and ten inches, half a pound and two pounds, three fish and a dozen fish.* ~ William Sherwood Fox, Silken Lines and Silver Hooks, 1954

Simon Groves' Book is Out!!!

(Media Release – OK it's an infomercial, but it's a worthy tome)

THE SEASHELLS OF TASMANIA: A COMPREHENSIVE GUIDE



This unique and accessible book by Simon Grove is superbly photographed and full of rich details about the seashells that abound on our shores.

How often has a casual stroll along a Tasmanian beach resulted in a pocketful of shells that you wish you knew more about? How many species of cowrie have you got sitting in that jar of holiday treasures? How different are winkles and whelks, scallops and oysters, cockles and mussels? Are all those limpets on the rocks the same species? Is that screw-shell native? Are all abalones the same? What shell species went into making that necklace? This book will help you find out - and much more besides. Tailored for Tasmania, but relevant for all of southern Australia

- Comprehensive and authoritative coverage of all species likely to be
- encountered on the shore
- 30 full-colour plates by the author illustrate the commonest 350 species
- Facing text describes these and a further 100 species
- Accessible and attractive format
- A5 format, 82 pages, card cover
- Ideal companion for beachcombers, naturalists and biologists
- Perfect for the shack, holiday-home or guest-house

Available at selected booksellers or online (credit card or PayPal) from: http://www.tasfieldnats.org.au/publications or by mail (cheque) from:
The Tasmanian Field Naturalists Club,
GPO Box 68, Hobart, Tasmania 7001
$32.95

Dr Simon Grove is a professional conservation biologist with a lifelong passion for seashells, marine life and natural history – and a shell collection to match. He lives with his wife and two sons near the sea in southern Tasmania.

PORTFOLIO – LSC Reefballs

Article and Photos by
Greg Close

"Our Balls are doing quite well."

It's been 10 years last January since the first Reef Ball reef in southern temperate waters was established.

The Leven Scuba Club project was brought about through member's enthusiasm, assistance of a local commercial fisherman who kindly provided the means for placing the balls where we wanted them, and the support of the 'Fish Care' representative at the time.

Briefly, the balls are hollow concrete hemispheres made in quantity by Leven Club members in the back yard of one of the members. Each module weighs approximately 300 kg.

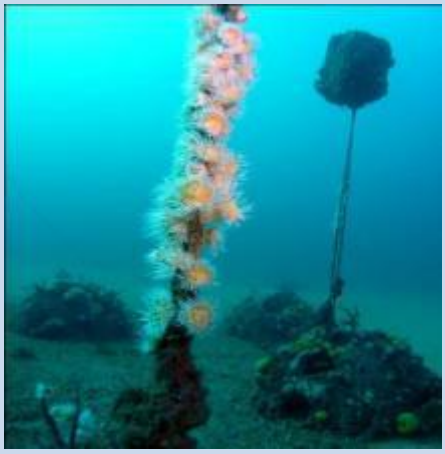
We, (the LSC) had a permit to place 50 Reef Balls just west of Wilson's Point and about 1.5 Kilometers to sea from the low tide mark off Morelands Beach in 20 metres of water.

It's now history that the reef is in place and providing habitat for creatures (mainly small) and a joy to dive when the conditions are suitable.

The balls were not all placed at the same time and during the placements the sea conditions were less than ideal. Not all the balls are clustered together and that makes it difficult to see them all on the one dive. However, a dive can be planned to cover at least half of the 50 and that is plenty to check out the variety of life now thriving on the reef.

From bare concrete, the balls grew weed 30 to 40mm long within one month. In two years there was a thick covering of sponges, anemones and invertebrates. Schools of juvenile leatherjackets were in residence and schools of silver trevalli were paying the reef a visit. The heavy train wheel used as a mooring block was home to an octopus and many of the balls housed boarfish.

In the years from then to now, floats were added to some of the modules to give a little more structure into the water column and also to help as a locator for boats with fish finders fitted. The reef rarely fails to provide something new and interesting every dive. Best dived in light South Easterly winds out of Port Sorell or Devonport.



Further reading available on the Leven Scuba Club inc. web site:
www.levenscubaclub.com.au

Cheers, Greg Close

Reader's Query – Feather Stars

Adriaan Van Huissteden was out diving in the Kingston area at dusk when he came across this small featherstar swimming in mid-water. Adriaan wants to know a bit more about featherstars and the name of this species.

Answer: That's *Antedon incommoda* I believe, if it was less than 50mm. It's found all around southern Australia, but here it is mostly seen in the Derwent estuary. Divers don't find them very often as they are a bit inconspicuous compared to the larger species. Another Derwent species that's almost identical is *Antedon Loveni*, but the segments on its little 'feet' are longer than *Incommoda's* which are rounded. Yes, they are hard to tell apart! Hence the Latin name "incommoda" (difficult)

This one is odd because it was free swimming and also seems to be badly fouled with growths. Perhaps it's moving on to cleaner pastures, or there is a bit too much population pressure or predation where it was living before.

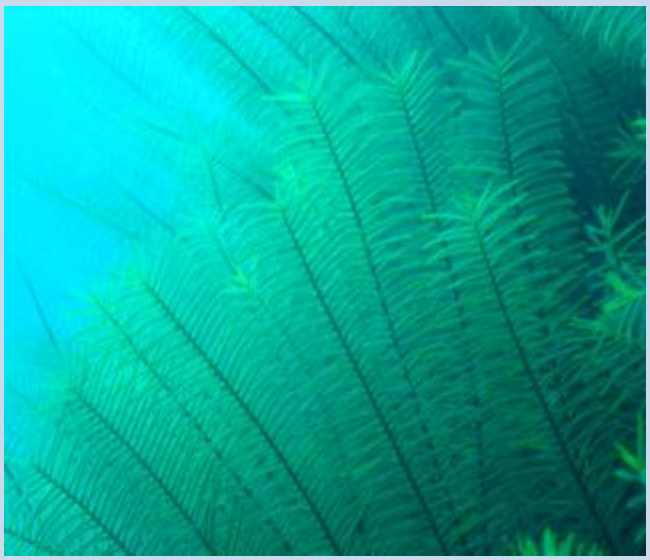
The most common sea lily/crinoid/featherstar species seen locally are the big colourful ones. *Cenolia Trichoptera* is the most often seen and can get to 230mm and come in a spray of colours. A similar noticeable and endemic (uniquely local) Tasmanian species has striped arms and is a bit smaller and less varied in colour, *Cenolia Tasmaniae*.

Just to totally confuse you *Aporometra wilsoni,* Wilsons featherstar looks a bit like the Tasmanian featherstar but its smaller and tends to prefer seagrass or weedy algae beds. Then there are a few rarer species that are only found in the isolated parts of the NW and Bass Strait islands.

Have I befuddled you sufficiently?

Feather Stars

Invertebrates – (Animals without Backbones)
Phylum: Echinodermata (the 'prickly skinned' animals like sea stars and urchins with 5 part symmetry)
Class: Crinoidea



Common Tasmanian Species:
Antedon Incommoda – Variable featherstar,
Antedon Loveni – Loven's Featherstar,
Cenolia Trichoptera – Orange featherstar,
Cenolia Tasmaniae – Tasmanian featherstar,
Aporometra wilsoni - Wilsons featherstar

Where to find them

During Coastal activities

They are really common in fossils, especially the Fossil Cliffs at Maria Island where their segments make up the most common fossils seen in the limestone. They are rarely seen washed up on beaches as they are very fragile and quickly break up in the surf.

Divers and snorkelers

In cracks, and among boulders in the reef during the day, and more out in the open at night.

Fun stuff they can do

They can swim by 'flapping their arms' (see Adriaan's picture). You can see get this going by lifting them off the bottom (gently) and letting them go. Usually in Tasmania, only the smaller species of Antedon will respond by trying to swim.

(p.s. handling can severely damage them as they are very fragile, and their broken arms will wrap around and stick to everything, obviously to distract and put off an attacker. Get your fingers under their feet if picking them up)

Fast Facts

These animals look a lot like plants and are also called "sea lilies". They filter little bits of food from the water at night using their 'hairy arms'.

There are approximately 625 species of feather stars and like most echinoderms, they are found in most oceans and at all depths.

Feather stars are really old and simple animals that were in prehistoric times one of the most common living things on the planet.

In Tasmania they are common on rocky reefs where they come in a large array of different colours. Smaller species of little featherstars are found in the estuaries, like the Derwent.

In-Depth knowledge

How and what do they eat?
Crinoids feed by filtering small particles of food from the sea water with their feather like arms. In most living species, the arms branch several times, producing anything up to two hundred branches in total. The arms are jointed, and lined by smaller feather-like appendages, or *pinnules*. They are covered with a sticky mucus that traps any food that floats past. Once they have caught a particle of food, the tube feet can flick it into the groove in their arms, where the cilia (hairs) are able to propel the stream of mucus towards the mouth. Divers can see this happening if they have the patience to look for it at night.

How do they grow and reproduce?
Feather stars have separate sexes which are impossible to tell apart. The pinnules hold the eggs which will eventually rupture to release into the surrounding sea water. In most species, larvae don't look much like the adult. These swim in the water column for 10-40 days and eventually settle as baby feather stars. The feather star grows gradually to become an adult feather star in 8 –12 months.

Some species develop directly (have no different-looking larval stage) and are nourished by food in the egg supplied by the mother.

Prehistoric crinoids

The majority of living crinoids are free-swimming and have only small stalk which is a reminder of their past evolution when most were attached to the bottom.
Crinoids were much more numerous both in species and numbers in the past. Crinoid fossil fragments make up the majority of many old limestone beds. In fossils they usually only have five arms, but most living species have 'doubled' their structure, having ten arms in total.

The earliest known group crinoids lived about 400 million years ago and they evolved into many species. About 250 million years ago there was a massive extinction event. The crinoids with flexible arms that could filter-feed very efficiently survived and became very widespread. A response to heavy predation possibly caused them to further evolve by separating from the bottom to improve mobility. The crinoids we see today are just a small fragment of the species of feather star that once carpeted the bottom of our ancient oceans.

The fish that feats on Phil…Phil has the final say

I hate Leatherjackets, not the wearable kind, but those which inhabit our local reefs, particularly horseshoe leatherjackets. On numerous occasions I've been out diving and been attacked by these colourful critters, not by all of them in a school but there's at least one individual in the pack that takes offence at my presence. It's pretty serious stuff as I've been painfully bitten. I've given it much thought and it seems that every time it happens I have a camera, which is why I often take photos of leatherjacket teeth.

After much browsing I found this statement: *"Frequently feeds on passing jellyfish and will even bite camera housings."*

Aha! that could explain it. Maybe they think the camera housing is a jelly and worth tucking into. The theory does not quite explain why they go for my fingers (unless they think they are tentacles) or why other divers with cameras don't get harassed. I think on my next dive I might take along a plastic bag as a decoy.

The Horseshoe Leatherjacket (*Meuschenia hippocrepis*) is a very colourful leatherjacket species that has so been named because of the Horseshoe pattern on the side of it's' body. It is found in the waters of southern Australia from Wilson's Promontory in Victoria around the south to the Abrolhos Islands off Western Australia. It is also found in the waters of northern Tasmania. The Horseshoe Leatherjacket can be found on coastal reefs and deep rocky estuaries and also can be found underneath large jetties and wharves. It can also be found in small aggregations swimming amongst kelp forests and rocky reefs. The Horseshoe Leatherjacket grows to a maximum size of approximately 60cm.

Life Heats Up for Banded Morwong

Photo Aust Museum

The findings of a study indicate negative climate effects on the banded morwong.

Surface water temperatures in the Tasman Sea have risen by nearly 2°C over the past 60 years. This warming, one of the most rapid in the southern hemisphere oceans, is due to globally increasing sea-surface temperatures and local effects caused by southward extension of the East Australian Current.

"Generally, cold-blooded animals respond to warming conditions by increasing growth rates as temperatures rise," Dr Ron Thresher said, "But theory and laboratory studies show that this has a limit. As temperatures get too high, we begin to see increased signs of stress, possibly eventually leading to death. We are looking at whether climate change is beginning to push fish past their physiological limits.

"In this case, off northern New Zealand, ocean warming has pushed the banded morwong – which inhabits temperate reefs in waters 10-50m deep – past the point where increasing temperatures are beneficial to growth." Dr Thresher said climate change can affect species directly by influencing how their bodies function, their growth and behaviour and indirectly through environmental effects on ecosystems.

According to a co-author of the paper, University of Tasmania (UTas) researcher Dr Jeremy Lyle, banded morwong were used in the study because they can live for almost 100 years and, as adults, they stay in essentially the same area even if the water temperature shifts. They have also been the subject of fisheries studies conducted by UTas researchers. "Growth rates of young adult banded morwong in SE Australia have increased significantly since 1910 at four sample sites," Dr Lyle said. "The team from CSIRO and the Institute for Marine and Antarctic Studies (UTas) compared these changes to temperature trends across the species' distribution. They observed increased growth for populations in the middle of the species' range in Australian waters where temperatures have increased, but are still relatively cool, but growth slowed with rising temperatures at the warmer northern edge of the species' range in New Zealand waters.

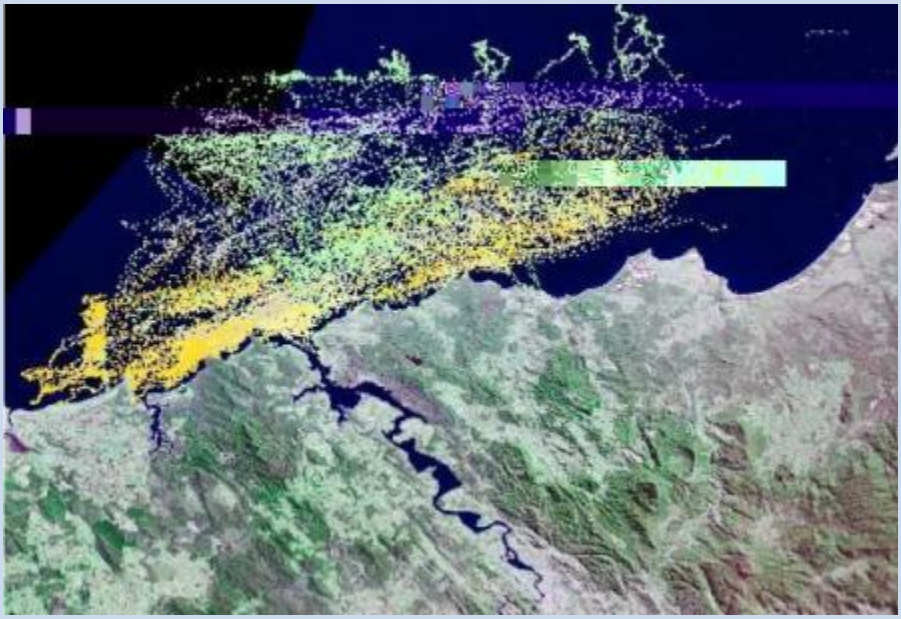
Dr Lyle said the study showed that growth performance in banded morwong began to suffer above average annual water temperatures of about 17°C. "Preliminary field and laboratory studies suggested that this decline in growth may be related to temperature induced physiological stress, resulting in increased oxygen consumption and reduced ability to sustain swimming activity."

Our Own Oil Disaster – The Iron Baron

Source http://www.environment.tas.gov.au/index.aspx?base=109 and AMSA website

While we are now 12 months from the devastating Gulf of Mexico spill, it is timely to remind ourselves that oil spills are also a threat in our own backyard. The *Iron Baron*, grounded on Hebe Reef at the approach to the Tamar River, northern Tasmania at 1930 hours (7.30pm) on Monday 10 July 1995. She was a 37,557 tonne bulk carrier loaded with 24,000 tonnes of manganese ore for the TEMCO plant. This smelter is located some 12 km inside the Tamar River estuary. Weather conditions prevailing at the time were north westerly winds of 20-25 knots with two metre seas.

Shortly after the grounding, it was discovered that 300 tonnes of bunker fuel oil had escaped. Weather conditions deteriorated and oil washed ashore in the vicinity of Low Head. There was significant impact on wildlife, particularly little penguins.



A modelling showing the spread of the oil.

The ship was refloated on Sunday 16 July 1995 and was moved to an anchorage, some two miles offshore. There was further oil released from under the ship following the refloating, some of which was successfully collected at sea whilst some impacted Bakers Beach and the Rubicon River estuary in the vicinity of Port Sorell.

Underwater inspections and onboard assessments confirmed major structural damage had occurred and with the ship's condition reported to be deteriorating. After being towed 53 miles east of Flinders Island, the *Iron Baron* was scuttled in deep water.

Rehabilitation

A gigantic program to recover oil and clean the foreshore was underway.The grounding of the Iron Baron resulted in the largest wildlife rescue rehabilitation response in Australian history. Several Bass Strait near shore islands were impacted in some locations. These islands were also the scene for a concentrated wildlife collection effort. A large wildlife collection, treatment and rehabilitation centre was established at the pilot station complex at Low Head, north of George Town.

Over the period of the incident, some 2060 little penguins and a number of cormorants, pelicans and water rats were treated at Low Head. Of the penguins treated (not including penguins euthanased or dead on arrival, of which there were less than 100), 99% were successfully rehabilitated and released.

BHP was one of nine companies which contributed about $10 million to a national oil spill recovery scheme. BHP Transport then agreed to fund the clean-up program and a two years research program into the effect of the oil spill. The final cost of the Iron Baron stranding may be indeterminable. BHP and its insurers lost over $30 million. The effects on Tasmania's coastal ecosystems are potentially very extensive-for example, albatross from as far away as Pedra Branca islet, off Tasmania's south coast, feed in Bass Strait.

The Final Legacy

Oil Residues

The long term persistence of oil in a variety of environments was monitored. A total of 400 samples were collected during five surveys undertaken from August 1995 to April 1997. Levels of hydrocarbon contamination in many of the sediments (beaches and mud flats) quickly returned to low levels, representing a near-background value for these areas. One important exception is the Lades Tongue site, which continues to exhibit a relatively high level of hydrocarbon residues in the soil. The rocky shores continue to exhibit some signs of hydrocarbon residues and these appear to have, in the main, undergone minimal biodegradation.

Penguins

Despite the relatively small amount of oil spilled by the Iron Baron, the impact on wildlife was extensive. The estimated total kill of little penguins in south eastern Bass Strait from oil pollution was between 7,000 and 17,000.

The post-release survival of banded oiled-rehabilitated little penguins was monitored over a 20 month period following the oil spill by regular trapping of birds at Ninth Island and Low Head. It is estimated that at least 3,054 adult penguins and up to a 7,087 birds in total (including juveniles) from the Ninth Island population were oiled. 1,947 - 5,980 birds are estimated to have died.

The minimum estimate of post-release survival based on the recapture of banded oiled-rehabilitated birds was 59%. The main factor affecting post-release survival in little penguins was oiling rate. The oil adversely affected penguins in ways which were not completely reversed by cleaning and treatment. Larger birds in better condition with lower levels of oiling, had the greatest probability of surviving. Translocation of penguins up to 580 km from their breeding colony was not found to significantly influence post-release survival.

Oiling and rehabilitation significantly reduced the fledging and egg success of little penguins in the breeding season following the oil spill. In the second breeding season following the Iron Baron oil spill there was no significant difference in breeding success. However, the weight of chicks from oiled-rehabilitated parents was significantly lower.

However, the initial impact that oil had on most penguin populations is poorly understood, because they were not surveyed until several weeks or months after the grounding of the Iron Baron.

Other Sea Birds and Waders

Losses amongst seabird populations have been estimated to be as high as tens of thousands of individuals. Breeding populations of Black-faced shag, Little pied cormorant, Australian pelican, White-bellied Sea-eagles, Australasian gannets and Shy albatross were monitored opportunistically, to ascertain if any gross changes to populations occurred in 1995/96. No significant drops in populations were observed.

Most of the Tamar's migratory wading shorebirds at the Heads are concentrated between the north end of George Town and Low Head. The area received moderate amounts of oil. There was no evidence of a significant decline in the diversity of species using the area as a result of the oil spill.

Seven species, Ruddy Turnstone, Eastern Curlew, Greenshank, Bar-tailed Godwit, Red-necked Stint and Curlew Sandpiper and Pied Oystercatcher, usually occur in large numbers. Only one species, the Ruddy Turnstone, showed a significant reduction, by 40 - 58%, in numbers following the oil spill. Turnstones were the only species that fed to any extent among rocky shore habitats close to high tide line. Invertebrate prey in this habitat may have been more exposed to the effects of oil or dispersants than other areas and this may have been the explanation for the reduction in Turnstone numbers. For some species, their numbers vary so much naturally it was hard to make comparisons.

Curlews, Bar-tailed Godwits and Curlew Sandpipers fed for similar lengths of time to those previously recorded from an unpolluted site in southern Victoria. Also, in these species the birds did not use all of the available feeding time: on days when the intertidal areas were exposed twice during daylight hours, in the morning and again in the evening, the birds spent little time foraging on the evening tide. This suggests that they had adequate time to meet their energy requirements regardless of any effects the oil or dispersants may have had on their invertebrate food supply.

Seals

Many seals at Tenth Island were oiled at the time of the Iron Baron oil spill. The number of pups born at Tenth Island in 1995 was reduced when compared to previous years.

There was a strong relationship between the productivity of the seal colonies and the proximity of the islands to the oil spill wherein the islands close to the spill showed reduced pup production and those islands more distant to the oil spill did not.

Rocky Shores

Significant differences in density for 8 species were noticed. These species were the barnacle *Tetraclitella purpurascens*, the prosobranch limpets *Patelloidea latistrigata* and *Notoacmeaflammea,* the periwinkles *Bembicium nanum* and *Nodilittorina unifasciata*, the bivalve *Xenostrobus pulex* and the brown alga *Hormosira banksii*. The pulmonate limpet, *Siphonaria diemenensis* was more oil-tolerant than other species in the study and that it is perhaps able to gain competitive advantage as a result of the presence of oil in its habitat. The study concludes that even at the most heavily oiled sites the overall impact of the oil spill event on rocky intertidal shore invertebrates, algae and lichen was probably minor although lack of pre-spill information made it difficult to draw to many conclusions.

Fish and Oysters

Hydrocarbon analysis of livers from fish resident in oil impacted areas, wrasse (Notolabrus sp.) and flounder (Rhombosdea sp.) caught before and after the oil spill indicated no accumulation of Iron Baron type oil residues or dispersants. Oysters also seemed to be little affected.

Seagrass

No gross-level impact was detected on the invertebrate communities in the Posidonia australia beds at the mouth of the Tamar River as a result of the Iron Baron oil spill.

Subtidal Reefs

The release of large quantities of fuel oil therefore does not appear to have substantially affected populations of subtidal reef-associated organisms, either on reefs at the mouth of the Tamar estuary where large quantities of oil washed ashore or at Hebe Reef where no impact could be detected at lOOm distance from the grounding site.

Densities of the two most abundant of the large invertebrate species, blacklip abalone Haliotis rubra and sea urchin Heliocidaris erythrogramma, remained extremely low during the first year after grounding but then rose to approximately 50% of estimated predisturbance levels during the second year.

Sandy Beaches

Oil from the Iron Baron was responsible for killing approximately 5000 soldier crabs on Lagoon Beach, representing about 1% of the population which existed at that time. The results suggest that processes such as reproduction and growth in soldier crabs are still adversely affected thirteen months after the spill. If soldier crabs are indicative then the ecology of sandy shore communities in Lagoon Bay was recovering, but remained incompletely recovered thirteen months after the Iron Baron spill. It is possible that the effects of the oil spill will persist for no more than 18 months or 2 years.

Commentary

The Iron Baron was a well built and maintained ship that should not have stranded on such a well-known obstacle, but accidents can happen at the best of times. We also have many old rust-buckets travelling the world under flags of convenience, the "ships of shame" that are an even greater threat. Unfortunately, even with the revised arrangements that have applied since the disaster, our ability to recover spilled oil remains poor. On average, internationally they can only scoop up about 15% of spills, and in bad weather its even less. Spraying dispersants has its own environmental risks. Apart from shipwrecks there are also accidental spills and even deliberate dumping. Apparently quite large volumes of oil are routinely lost on offshore oil platform operations such as those in northern Bass Strait.

Oil spills remain a significant environmental threat to Bass Strait and other areas even after the disaster.

It's that time of the Lunar cycle again

QUOTE OF THE MONTH

So, I challenge Mr Dreyfuss to substantiate his statement that The Climate Sceptics party is an extremist organisation. Our policies are on-line for the world to see. Centralist - Mr Dreyfuss. Mr Dreyfuss' ALP has signed a deal with a party that I would call extremist, a party that wants to renounce Australian sovereignty, a party that wants Australia governed by the United Nations. Now, Mr Dreyfuss, I would call an anti-Australian sovereignty party an extremist party, wouldn't you?

Critter Files

Phil's Giant Encounters

Smooth Stingray (Dasyatis brevicaudata)

by Phil White and Mike J

Phil's savage beast up close, photo Phil White

Phil has been out diving on the reefballs off Devonport again and generally having unwanted encounters with marine life. Normally it's leatherjackets, a small fish that seems to love attacking Phil's exposed hands. They do this with other people, but have a special attraction for Phil. In a group of a dozen divers they will home straight in on Phil. Now Phil is moving up the food chain and is finding himself irresistible to Smooth Stingrays,

*"As I hit the dropoff, I startled 2 large black rays that were sitting on the sand and after making my way down the slope they kept on circling around and heading straight towards me as if they were attacking. Perhaps they were being friendly. Perhaps they had the s**ts 'cos I disturbed their nap, but I shooed them away each time and eventually I was left alone."*

You girl's blouse, Phil. The smooth stingray is one of the most timid and curious of the ocean's "gentle giants".

The smooth stingray is a common species found in the southern hemisphere in the temperate zone to a depth of 156 metres. The largest stingray in the world, this heavy-bodied species grows upwards of 2.1 metres across and 350 kg in weight.

Off Australia and New Zealand, the stingray is common in shallow coastal waters. Off southern Africa, the short-tail stingray is rare in shallow water. Over the past few decades, its range and numbers off southeastern Tasmania have grown, and spread further south possibly as a result of climate change. They are now common in places like Norfolk Bay and the Derwent, when this was not previously the case.

The stingray mainly forages for food on or near the bottom, day and night. Captive experiments have shown it capable of detecting the magnetic fields produced by other animals and it uses this to find food. It will burrow into the sand and suck up bottom-dwelling bony fish, shells, snails, spoon worms, heart urchins, squid eggs and small crustaceans. It will even hunt in the water column for salps (free-swimming sea squirts). In other words it is very adaptable and will eat anything that sits still for long enough.

This stingray has few predators due to its size, except for man, big sharks and killer whales. Smaller fishes have been observed using swimming rays for cover while hunting.

Not THE killer beast, but another equally vicious one hangs out in kelp - photo Emma Flukes

Australian and New Zealand rays are most abundant in the shallows during the summer. A tracking study conducted on two New Zealand rays suggests that they shift to deeper waters during the winter. Large aggregations of rays can form seasonally at certain locations, such as

in the summer at the Poor Knights Islands off New Zealand. Both birthing and mating have been documented within the aggregations at Poor Knights.

Each receptive female may be followed by several males, who attempt to bite and grip her. One or two males may be dragged by the female for hours before she gives in. They give birth to live young and the oddity is that although they are fish, their developing young are sustained by "uterine milk" produced by the mother. Females bear litters of 6–10 pups in the summer. Males appear play midwife by nudging the female's abdomen with their snouts during birthing.

Curious and unaggressive, the short-tail stingray may approach humans and can be trained to be hand-fed. If threatened it will rear up its tail spine like a scorpion and will then get out of the way. Usually slow-moving it can achieve sudden bursts of speed, flapping its pectoral fins with enough force to cause a pressure wave in the water that can make an audible "bang". A bit like an FIII breaking the sound barrier. If cornered and harassed this species is capable of inflicting a serious, even fatal wound with its sharp stinging tail spine. The spine's venom doesn't cause death but can result in flesh around the wound rotting and going septic. Nasty.

Icons of Marine Conservation

Did we all get our initiation into marine matters by getting wet as adults, or by reading the comments of smart alec's pushing marine magazines. Of course not, popular culture has been instrumental in exposing people to a marine world they do not otherwise see. This has shaped the way they now see the 'older' forms of marine interaction like fishing and swimming. We are now alerted to the ocean as an environment as rich as the land environment and in fact, probably the world's biggest wilderness.

"King of the Coral Sea" (1954)

We will start with something that perhaps only the oldest of readers might remember, the first popular Aussie movie to depict underwater scenes, at a time when only a few dozen people in Australia had civilian diving gear.

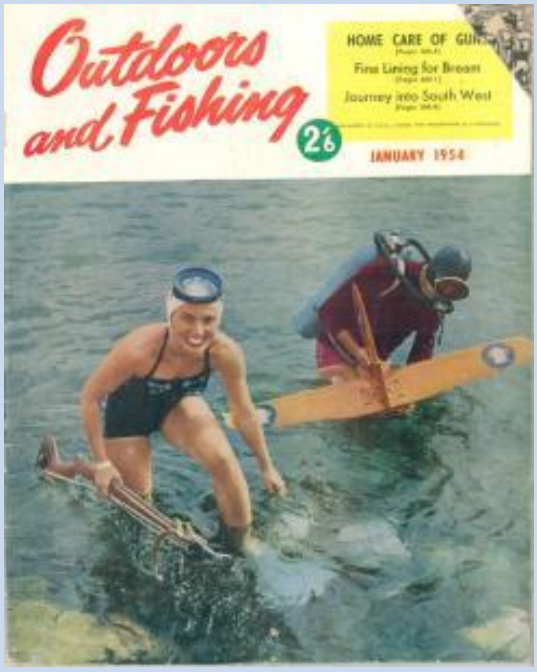
The story really started when naturalist and pioneer underwater filmmaker Noel Monkman got to know Chips Rafferty and they decided to make underwater films together. Noel Monkman was possibly the first to shoot an underwater adventure film in Australia - called *Typhoon Treasure*. Rafferty was a keen swimmer and snorkeler himself and involved his acting friends like Bud Tingwell and Rod Taylor. Other early notable figures like Wally Gibbons and Allan Power worked on the film crew. "King of the Coral Sea," was directed by Lee Robinson, the most prolific Australian director of the 1950s.

Then the idea gradually grew from a little Australian drama piece into a major motion picture involving American backers. The simple plot was overworked and it ended up being targeted to a B-Grade semi-travelogue audience. It was light relief, with a strong emphasis on beautiful ladies and exotic location shots. Robinson's made good use of the uniqueness of Thursday Island's sail-powered pearling fleet and the novelty of genuine underwater scenes filmed by Monkman's equipment. This film equipment had originally been developed for Monkman's scientific studies.

Rafferty plays Ted King, a pearler who lives on Thursday Island, the center of Australia's pearling industry. When King discovers a body floating in the Torres Strait, the clues lead him to a gang of crooks who are smuggling migrant workers onto the island. Determined to get to the bottom of the mystery, he is joined by his first mate, Janiero; his daughter, Rusty (Ilma Adey); and Peter Merriman, the owner of the pearling company played by Charles "Bud" Tingwell.

Three weeks after editing was complete, "King of the Coral Sea" had made its money back in overseas sales and proceeded to do well in the Australian market.

An interesting sub-plot for divers was the clash between the conservative users of diving helmets, and the heroes who are trying to modernise and introduce aqua lungs. Tingwell actually used a unique early Australian-designed aqua lung (the "Lawson Lung") to rescue a trapped Rafferty in a hard hat set. They didn't have any luck getting the helmet to flood to 'fake' a near drowning, so Rafferty told them to turn off the air. No acting was then needed.



Monkman was also a marine zoologist and was instrumental in starting up the research station on Heron Island. He was also prominent in pushing for the protection of the area in a Great Barrier Reef marine park.

This gem was supplied by Drew Burt and shows a filming scene from one of Monkman's earlier short films on the new sport of spearfishing. How did she get the lippie to stay on? Also check out the twin hose, and what's with that glider (apparently it was used to steady the camera underwater but never 'took off' for obvious reasons).

Swansea – Peace and Quiet by the Seaside

Whenever I think of Swansea I have a mental picture of a calm and quiet country town. How quiet? Well one of its claims to fame is that 25% of its 495 inhabitants are above the age of 65, making it the 'oldest' town in Tasmania.

Risque activity is limited to the odd toddler splashing naked along the calm beach. Road rage from the locals is unheard of, even with the provocation of slow-moving 'grey nomad' motor homes (or is that motor palaces). Even the log trucks seem to go into silent mode as they negotiate Swansea's narrow and winding main street.

If Coles Bay is trying to imitate Byron Bay, well Swansea isn't really trying to change at all. It's an old wool town that has discovered that fishing and family caravan trips can also make a dollar. The locals are still genuinely friendly and chatty and haven't become jaded to tourists. There are a few new luxury villas and restaurants trying to cater for the more well-heeled mainland tourist, but I reckon the cut price meals at the RSL are still more popular. Hooking a few flatties in the bay is a mainstream way to provision for dinner, with the boat ramp very active in the mornings.

I haven't visited Swansea much, I'm mostly a diver and the town is a virtually dive free coastal location. This part of Great Oyster Bay is calm, very shallow and sandy. When the sea does get rough, the coarse sand particles blast the foreshore rocks free of any life except for the hardiest chitons and barnacles. Its only a refuelling point for divers on their way to good nearby diving at Spikey Beach and Mayfield just south of Swansea. Having said that it's a great, safe place for kids and also a serene and photogenic location for adults.

History

The first Europeans to frequent the area regularly were the American and British whalers that came to slaughter the large herds of whales that frequented the bay.

Swansea was first settled by Europeans in 1821 when Lieutenant George Meredith of the Royal Marines, and two of his tenant farmers, arrived from Glamorgan in Wales. Swansea was originally named Great Swanport, assumedly due to the once thriving (but now virtually absent) flocks of black swans. The area was dotted with dry coastal forests of she-oaks, black wattles and the unique Oyster Bay Pine.

The area was also a significant hunting ground for the Loontitemarrelehoiner band of the Oyster Bay tribe. Conflict with Aboriginal people over land and raids by

bushrangers made this early settlement a tenuous affair. These threats meant that, until 1850, a small contingent of the 40th Regiment of Foot occupied a makeshift wooden fort at Waterloo Point. There are rumours of a large massacre having occurred near here, but the details are still shrouded in controversy.

The land was developed for crops and grazing, and the dry conditions produced fine merino wool. Small industries like a tannery and flour mill were established by the Meredith River. In 1838, a bluestone General Store was erected which has been owned and run by the Morris family for the last 100 years. The Swansea Bark Mill was later established to exploit the tannins in wattle bark for leather-making. As a result the surrounding countryside was denuded of its cover of black wattles. This factory site is now a museum.

The town also has a local history museum and you can take a self-guided history walk past Swansea's still significant remaining heritage buildings.

Shipwrecks

The big problem for commerce in Swansea was safe sea transport. Even after they built a mile long wooden jetty (since destroyed by storms) it was still hard to get a safe anchorage in the bay. While the bay is often calm, it is also often windy. The sand makes for poor holding ground and large ships had to anchor well offshore exposed to the weather. As a result there were a few mishaps and tragedies.

The locals still remember the wreck of the cutter "Resolution", blown ashore in 1850,

"...we regret to announce a melancholy occurrence, which took place on Monday week at Oyster Bay, near Swansea. The wind was blowing high at the time and the cutter Resolution, hence from Swan Port, with Mr and Mrs Large and the 6 children, varying in age from 2 - 12 years, and a cargo comprising articles for establishing a brewery at Swansea, on board, was totally wrecked. The whole of the goods and the lives of the six children falling a sacrifice to the elements. We hear that, so sudden was the catastrophe, the poor father, who was formerly a publican in Hobart Town, and has now lost all, had barely time to escape himself, and that he was insensible for several hours after being thrown on shore by surf. How Mrs Large escaped has not correctly transpired, but a four-oared whaleboat went from town on Monday morning to the scene of the disaster"

A memorial anchor has been placed along the foreshore at Waterloo Point, near where the ship went ashore. The adjacent cemetery contains the white headstone for the 6 Large children. According to local legend, they still

haunt their former family home, nearby Schouten House.

Another vessel that came to grief in a sudden easterly blow was the S.S. Moonah. She was a small coastal tramp of the kind once common along the East Coast. Until as late as even the Second World War in some places, many Tasmanian 'road journeys' were a bone-jarring nightmare on deeply rutted gravel tracks. A 'Mosquito Fleet' of small ketches and steamers kept isolated coastal communities in touch with the capital. On 17 June 1925, a gale sprang up and the S.S. "Moonah" dragged her anchors and went ashore, broadside onto Nine Mile Beach near the entrance to the Meredith River. The larger S.S. "Koomeela" went to her assistance, but couldn't pull her free. Her boiler is still visible on the surfline and can be visited by wading the Meredith River from Swansea, or via a new wooden walkway from Dolphin Sands Road.

Nature

One of the most striking features of the town's coastline is the fantastic sea view, including vistas of the Hazards and Schouten Island. One of the best places to appreciate this is on a beach walk (or kayak) along serene Nine Mile Beach, or along the coastal walk at Waterloo Point. The "Loon.tite.ter.mair.re.le.hoin.er" walking track has been carved into the remnant coastal vegetation at Waterloo Point, right next to the town's golf course. There are interesting information boards about the Aboriginal activity in the area and much evidence of middens along the foreshore. Birds are often seen including, Musk Lorikeets, Black Cockatoos, Oystercatchers, Pacific Gulls, Cormorants and Gannets. Go slow and admire the details of the flora and fauna, it isn't a long track (1km).

At dusk we ventured out there again to see the mutton birds (shearwaters) return to their burrows. Expecting to see very little, I was surprised by the healthy numbers of muttonbirds still using the narrow band of remnant vegetation. Graceful at sea, the muttonbirds are clumsy on land, and in the moonless night we were peppered by shearwaters crashing through the trees as they tried to land. They wandered around, rested on the track for a while, before going underground to coo softly to their mates.

The Shearwaters arrive after an epic migration from the Arctic Circle. From mid October till mid November only a few will return each night. They initially find their mate and repair their burrows. For about a month they go out to sea fishing to store up energy for the breeding season. By January more are returning, and they will take turns at incubating the egg and minding the chick. They will keep returning until April.

This area has to be very vulnerable to disturbance from cats, dogs and people, so I was surprised the numbers seemed so healthy. Stay low and keep very quiet. Keep to the path to avoid crushing their burrows and try not to shine lights directly onto the birds.

Swansea is a very worthwhile family destination. What it lacks in tourist infrastructure and big ticket attractions it makes up for in low cost, quiet enjoyment. A place for a swarm of under eight year olds who haven't yet discovered Ipods, are willing to talk to their parents, and can still remember how to make their own fun. For entertainment after 13, well that's why they invented loud, overcrowded cities.

Let's Take a Shot at Cormorants

Article Mike Jacques Photos; Alan Fletcher

As I was growing up there seemed to be an excess of boys in the suburbs with a shotgun and not much to do. This armed boy-angst seemed to be directed at two things, road signs and cormorants. Why they didn't just shoot seagulls or sparrows seemed a bit of a mystery, but like a lot of crazy things it has a history. Shooting "shags" has been around for a long time and if you believe the blogs on fishing websites is still practiced around fish farms and inland trout dams today.

> *BLITZ TOMORROW ON CORMORANTS* "The Mercury"1954
>
> *About 1,000 shooters tomorrow will launch the biggest blitz on cormorants in Northern Tasmania that has ever been organised. Cormorants have been worrying Tasmanian fishermen this season more than ever before, and it is estimated that a cormorant can eat its own weight (about 61b.) in fish each day. This works out at about a ton of fish a year for every cormorant, so that if every shooter brings in 10 heads, he will not only receive 5/ for each head at the police station, but will save 10 tons of fish from being devoured.*
>
> *The shooters will embrace an area stretching from Deloraine to Campbell Town and the East Coast, and will Include all of the North and North-East of Tasmania, and a considerable portion of the North-West Coast. Fourteen branches of the Northern Tasmanian Fisheries Association will co-operate in providing gunpowder for the war on the cormorants and the various organisers will allot positions within their boundaries for the shooters, to prevent overlapping. Shooters will supply their own ammunition, and any heads they get become their own property.*
>
> *The organisers claim the shooting of native hens, rabbits, and vermin of other brands will be encouraged. Police also are taking an active part in exterminating the pest, and four policemen will. cover the sanctuary, starting from King's Wharf and extending to the cut at Stephenson's Bend. Four other police will wage war on cormorants between the Tamar St. Bridge and Hobler's Bridge. Fishermen and game officers will also cover the Longford sanctuary.*

You see, bogans are simply the misunderstood social do-gooders of yesteryear, ridding the State's wildlife sanctuaries of these useless things you can't eat. The trouble is, that like your grandmother, shags eat fish. Unlike your shooting your grandmother, in some quarters doing in shags is still seen as a social good. The belief still persists that there is no shortage of shags, so this must mean that you can upset the ecosystem to maximise human resources without dire consequences, and that shags are a pest species and not really 'native' or 'worthy' animals. In other words the shag haters don't really understand anything about them, even

what species are found in Tasmania. Assuming that knowing is the first step towards appreciating, we will do our little bit to educate those prone to eradicate.

Even bird fanciers aren't inclined to take a lot of interest in the cormorant, thanks to it being commonly about, with relatively bland plumage and occupying unsavoury-smelling roosts. As a diver I quite enjoy seeing them. They are always about that sea/land interface and seem to indicate a relatively undisturbed area that will be fun to dive. They add some interest with their timidly curious behaviour. A couple of times I've seen them fishing underwater which has been a highlight of those dives.

Are all Shags equal?

Firstly, not all diving birds are cormorants and they are often confused with Darters and other fish hunting birds. In Tasmania there are 4 main species of cormorant and one species that is a regular visitor. They are NOT 'introduced'. Some species are widespread across the world, and others are quite rare in Tasmania. Some of them stick to the coast and only some cormorants like to raid inland fish farms.

Black-Faced Cormorant *Phalacrocorax fuscescens*

The cormorant I see about the coast most often is the Black-Faced Cormorant. It's a medium sized one and is found all over the coastal regions of southern Australia. It stays only on the coast. It feeds on fish by diving to depths of up to 12 metres. They can catch quite large fish, but mostly its smaller sized fingerlings they prefer. The birds sometimes forage in flocks, apparently in an organised way.

Breeding happens between September and February on islands and rock stacks offshore. They build a nest out of seaweed, driftwood, pig face, and other floating material

They get shot at often but aren't the shags that most trouble inland fishermen and would have little impact on anglers.

Pied Cormorant *Phalacrocorax varius*

The Pied Cormorant is a migratory species that is also known as the Yellow-faced Cormorant, because that is the main way of telling it apart from the others. It doesn't have the black feathers around the eyes of our local Black-Faced Cormorant. The Pied Cormorant often appears in large flocks particularly about the islands off the west coast and in Northern Tasmania.

Pied Cormorants breed all year long. It places sticks and seaweed on ground on an island, or in tree over water. The wingspan of the full grown Pied Cormorant is approximately 1.5 metres. This cormorant migrates when conditions are poor elsewhere and may be the source of the sudden large 'plagues' of cormorants that are talked about by anglers.

Great Cormorant (*Phalacrocorax carbo*)

The Great Cormorant is a worldwide species. It has a longish tail and yellow throat-patch. Adults have white thigh patches in the breeding season. The subspecies found in Australasian waters, *P. carbo novaehollandiae*, has a crest.

The Great Cormorant breeds mainly on coasts, nesting on cliffs or in trees (which are eventually killed by the droppings). The Great Cormorant can dive to considerable depths, but often feeds in shallow water. It frequently brings prey to the surface. A wide variety of fish are taken. Dive times of 20–30 seconds are common, with a recovery time on the surface around a third of the dive time. The Great Cormorant is one of the few birds which can move its eyes, which assists in hunting.

There are now increasing numbers of birds breeding inland to take advantage of human food sources, and many inland fish farms and fisheries in Europe claim to be suffering high losses due to these birds. They can still be legally shot in some European countries.

Little Pied Cormorant, (*Microcarbo melanoleucos*)

This is a common waterbird, found around the coasts, islands, estuaries and inland waters of Australasia, SE Asia and the islands of the SW Pacific and the sub-Antarctic. It is a small short-billed cormorant usually black above and white below with a yellow bill and small crest. The Little Pied Cormorant is a small cormorant with a shorter bill and longer tail than the Little Black Cormorant.

The Little Pied Cormorant resembles the Pied Cormorant, *Phalacrocorax varius*, but is distinguished by its smaller size and shorter bill. It doesn't have Pied Cormorant's orange-yellow face patch and black thighs.

The Little Pied Cormorant is at home in either fresh or salt water. It is often seen in large flocks on open waterways and on the coast, especially where large numbers of fish are about. On inland streams and dams it is often solitary.

The Little Pied Cormorant finds its prey on the sea floor. It is a solitary feeder, normally diving in relatively shallow water, often near the shore. Dive times are short, around 15 to 20 seconds, with recovery times on the surface of 5 to 10 seconds. Little Pied Cormorants feed on a wide variety of aquatic animals, from insects to fish. On inland streams and dams they turn to their most favoured food: yabbies (freshwater crayfish). It takes a variety of fish prey but crabs and yabbies will make up to 80% of its diet. Other crustaceans are also taken, with shrimps being a large part of their diet in winter months.

Eels and insect larvae are also consumed. The bird will sometimes put a fish down on the surface of the water in order to re-orient it and swallow it head first. Because of this habit, they are sometimes followed by gulls who are trying to snatch a meal.

Breeding occurs once a year in spring or early summer. Little Pied Cormorants breed either in colonies or, less commonly, in single pairs. The nest is a flat platform of sticks, lined with green leaves and is usually placed in a tree. Both adults share in egg incubation and care of the young.

These little birds have little impact on fisheries.

Little Black Cormorant *Phalacrocorax sulcirostris*

This is a small, slim, totally black cormorant with a greenish sheen to the back and a slender grey hooked bill. In the breeding season, adults have fine white flecks on the head and neck and the green tinge becomes more bronze. This species congregates in larger flocks than other cormorants and flies in V-shaped formations.

The Little Black Cormorant is one of only two totally black cormorants in Australia, with the other being the much larger Great Cormorant *P. carbo*, which has a yellow bill, face and throat and a white chin. The Great Cormorant also flies more often in long lines than in V-shaped formations.

The Little Black Cormorant is found throughout Australia and the Pacific in freshwater wetlands, but it will sometimes be found on sheltered coastal waters. It is seldom seen on dry land, but is often seen resting on rocks, jetties and other perches in water. It is nomadic, leaving coastal habitats when inland waters are plentiful.

The Little Black Cormorant feeds on fish, crustaceans and aquatic insects. It catches prey underwater, by diving and swimming using its large, fully webbed feet for propulsion. It has special membranes that cover and protect the eyes underwater. As their feathers are not waterproof, cormorants are regularly seen perched with their wings outstretched to dry after fishing.

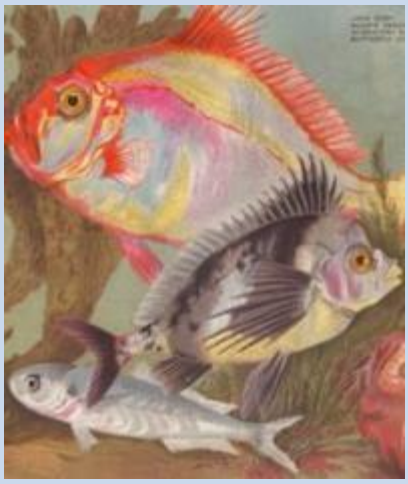
Gifted Amateurs - Louisa Meredith

Louisa was born in England and was home educated by her mother. Despite her basic education she proved to be a keen writer and observer. She was also politically courageous, writing letters of support for the Chartist 'rebels' during their efforts to win liberal political reforms.

In 1835 Louisa published a volume, *Poems*, which was favourably received. This was followed by *The Romance of Nature* and *An autumn ramble on the Wye*. In 1839 Louisa married her cousin (as you do in Tassie) who had emigrated to Swansea. She was already a renowned English miniaturist, watercolourist, engraver, poet, writer and botanist by the time she reached Australia.

Initially the couple lived in New South Wales before almost going broke in land speculations. This forced a move to the Meredith family home in Swansea in 1840. She published *Notes and Sketches of New South Wales* (1844) and *My Home in Tasmania* (1852) that were both successful. She also published two novels. She was also an early member of the RSPCA and lobbied her politician husband to protect native wildlife and scenery.

In 1860, she published *Some of My Bush Friends in Tasmania* which contained elaborate full-colour plates of flora. She also studied, insects, seaweeds and fish of Tasmania's east coast and was an honorary member of the Tasmanian Royal Society.



In 1880 she included colour plates of local marine life in *Tasmanian Friends and Foes, Feathered, Furred and Finned*. Her illustrated books about Tasmania, which display a romantic and exotic quality, popularised Tasmanian plants and animals. In 1891, Meredith went to London to publish *Last Series, Bush Friends in Tasmania*, just as a severe financial depression and bank failures ruined her financially. In June 1893 wrote bitterly, 'I have made a mess of my life in many ways—my retrospects are mainly regrets'. In her final years she became blind in one eye. She died in Victoria in 1895.

Who cares about seaweed? Part II

KNOW YOUR BIG BROWN SEAWEEDS

By Mike Jacques

With close to 3000 species, Australia has about the richest variety of marine algae in the world.

The big seaweeds we often notice on the reef, or see washed up on the beach, are often the brown macroalgae.

Master identifying a few of the common species and you will be able to recognise the vast bulk of the seaweeds you will see on a Tasmanian reef or beach.

In Tasmania the dominant brown seaweeds are Bull Kelp (*Durvillea potatorum*) in the surf zone, Giant kelp (*Macrocystis* spp.) forming a forest on some inshore reefs, and shrub-like strapweed (*Ecklonia radiata*), *Lessonia* spp. and crayweed (*Phyllosphora comosa*) dominating the sub-tidal reef slope. *Lessonia* is unique to Tasmania.

In sheltered spots we can also get more delicate brown seaweeds like *Sargassum fallax*, and delicate shrubs of diverse groups like *Cystophora* and *Caulercystis*.

Giant Kelp

Giant kelp is the mighty 'blue gum' of the seas. The major species of algae that form the tallest kelp forests on the Tasmanian and Victorian coast is Giant Kelp, Macrocystis pyrifera, the same species as found in California, New Zealand and South America. Giant String Kelp, Macrocystis angustifolia grows to around 10 metres in waters from 0 -10m depth and is more common in Victoria.

Giant kelp (*Macrocystis spp.*) is something akin to the State's marine floral emblem, or at least it use to be. Giant Kelp can form vast and dense underwater forests sometimes stretching out into over 30 metres of water. Instead of having roots like trees, giant kelp is attached to the rock by a finger-like structure known as a holdfast. As the plant grows, air-filled floats (called pneumatocysts) act like balloons. The pneumatocysts are filled with carbon dioxide sucked from the sea and hold up the huge weight of the mature plant. Closer to the surface the plant can more efficiently extract nutrients from the turbulent

surface waters that wash over its corrugated blades. Its ability to soak up large amounts of nutrients allows this plant to grow at up to half a metre a day. Giant kelp is one of the fastest growing plants on Earth.

Giant kelp has undergone a recent serious change, disappearing from up to 95 percent of its range in Victoria, South Australia and Tasmania in the last few decades. Apart from two small patches it has virtually disappeared from the Tasmanian East Coast, probably because this coastline is affected by the warming Eastern Australian Current. The warmer water is less rich in nutrients and this change has probably stunted the regrowth of the kelp beds after damaging storms. They are under numerous other threats including pest species like the black urchin.

Bull kelp (*Durvillea potatorum)*
Photo per Redmap

Bull kelp is a surfer that thrives on rough-and-tumble. It is usually the only big seaweed that can hang on in shallows in wave-exposed parts of the coastline. It's aided by its tough limpet-like holdfast that welds the plant tightly to the rocks. Such is the tenacious grip of the root-like "hold fast" that often it is washed ashore only when a piece of the rock is broken off.

From the holdfast, a short flexible stem branches out into long narrow and leathery blades. These blades process sunlight and absorb gases and nutrients, but they also flay the bottom in the swell and eliminate other predators and competitors (like urchins), usually leaving only a few hardy snails and the bottom-hugging coralline algae.

D. potatorum usually occurs only in the shallows, but at Eddystone Rock, bull kelp extends to 18 m deep, with some plants at 30 metres depth. Bull Kelp grows prolifically on the reefs surrounding King Island, where the brown leathery fronds grow to a spectacular 8m length. During storms, kelp plants are torn from the rocks and cast on the beaches. Local people

collect it and it is processed to extract alginates. Alginates are used in a variety of products including ice cream.

Bull kelp is fertile in winter and the reproductive "conceptacles" disappear in summer. Bull Kelp can live 14 years or longer and can grow at the rate of 10-14cm a day.
Slight rises in temperature may be causing some species of marine algae to contract southwards, or disappear altogether. In the 1940s, Bull kelp reached as far north as Bermagui on the NSW coast, today it is has retreated 50 kilometres closer to the Victorian border.

It is suspected that in the case of the bull kelp it is not the adult plant, but rather its microscopic reproductive cells – called gametes - which are most susceptible to change and are probably not surviving and in warmer northern waters.

Strapweed (*Ecklonia radiata)*

Ecklonia radiata, also known as common kelp, is one of the species that we see in piles along the beach in large quantities after storms. It forms extensive low bushy "forests" on subtidal reefs along much of the temperate Australian coast and is the most common seaweed found in Australian waters. This species is relatively widespread throughout the world. Along with crayweed it has become the dominant canopy plant on the Tasmanian East Coast reef after the virtual disappearance of giant kelp from the area in recent decades. This alga provides a major habitat for animals, creating a dense canopy of protective fronds.

The plant is fixed to the bottom by a holdfast of finger-like 'roots' or haptera, not unlike giant kelp. The short 'trunk' or stipe gives way to a flat 'strap-like' blade in centre that supports flat "radiating" secondary blades (hence the name *radiata*). Both primary and secondary blades are commonly 20-30cm long and 5-10cm wide.

E.radiata reproduces in spring. It propagates via a variety of forms, and seaweed reproduction generally is a bit of a puzzling process for the layperson. We are use to land animals that reproduce in one way, but in the marine world there are often several ways to skin a cat. Like

a land fern, E.radiata produces spores that are contained in special capsules called sporophyll embedded in the lines along the blades of the weed. Once released these spores germinate and become microscopic filaments (heterokont flagellates), a bit like the sprouts of a land plant but free-swimming. It is this 'sprout' stage that produces gametes (sex cells) which then grow into the parent plant. Some other seaweeds have even more complicated alternating reproductive processes.

The parent plants may continue to grow for between 10 and 20 years. During that time the old plants steal light from juveniles. When an *E.radiata* forest gets old, large areas can die off suddenly. Die-back of large areas of this kelp have recently been studied in NZ. In the early stages light-coloured patches appear and slowly the blades appear to 'rot' away, leaving only the stipe attached to the bottom. A 'seed bank' of sporophytes quickly fills up the empty space with new plants. This seaweed may even have evolved to deliberately break off once it reaches a certain size, to wash around the surf zone and spread its spores to new areas.

Ecklonia radiata, has undergone a large retraction in range south from Caloundra in SE Qld to Byron Bay in northern New South Wales. Some reports suggest it still survives in Qld in 30 m depths off Moreton Island.

Cray weed (*Phyllospora comosa*)

Cray weed (*Phyllospora comosa*) gets its common name from old reports that small juvenile rock lobsters will sometimes cling to its fronds. It is found from Port Macquarie, New South Wales, south, Tasmania, and west to Robe in South Australia.

This weed is especially dominant in the northern half of Tasmania. This weed is very abundant on the NSW coast but has been in decline in the NSW Central Coast. A serious decline was noticed during the 1970's and 80's and the species has since disappeared altogether from the area around Sydney. It is suspected that the loss has been caused largely by human sewage which was released over the years from the city. This has progressively degraded the seaweed beds until the stress became too much and crayweed disappeared altogether. It has failed to return despite new sewerage works that have reduced sewerage loads along the coast.

Lessonia corrugata

In Tasmania, Lessonia can be found down to 18 metres, although it generally occurs as a dense band in shallow water above an *Ecklonia radiata* ("strapweed") bed. It is endemic (unique) to southern Tasmania. It has no common name, but should be called surveyor's curse, as it is so dense that an ab diver or survey diver forced to shift through the dense fronds will be held up for ages.

Sargassum

The famous Sargasso Sea (western north Atlantic) is named after this seaweed that floats in a mid-ocean current eddy. Sailors of old were perplexed by the sudden appearance of massive rafts of weed, normally only seen near rocks and reefs.

Most seaweeds get their nutrients by soaking it up through their tissue, so they need constant refreshing water movement across the fronds. That's why large seaweeds anchor to the

seabed in an upright position, to increase their chances of soaking up fresh nutrients. When floating with the currents and tides, the water surrounding a seaweed is not replenished as rapidly.

Sargassum has evolved to manage low water exchange situations, like being adrift in the Sargasso Sea, or being locked away in a small sheltered bay. In sheltered areas they spend less energy on tough, leathery exteriors and tend to be more delicate, to absorb the nutrients more easily. Apart from thriving in low levels of nutrients they can also reproduce by simple fragmentation, to profit from any unusually strong winds and current that might damage this delicate seaweed bed.

The large variety of Sargassum species in Tasmania are mostly confined to these sheltered and shallow reefs like Primrose Sands, where *Sargassum fallax* is very common.

Neptunes Necklace (*Hormosira Banksii*)

While the big browns dominate the sub-tidal reef there are also many species to be found in the inter-tidal zone. One of the more prominent is *Hormosira banksii* (Neptune's necklace) which forms vast mats of interconnected strings of air bladders along the sea terrace.

It is found from Port Macquarie, in northern New South Wales, Tasmania and around southern Australia to King George Sound in Western Australia.

Although the algae may be exposed to the sun at low tide, underneath the dense mat of fronds remain moist and protected. Extra hot summer days can actually damage and kill the algae fronds, so that they may turn a deep reddish brown in colour, which is not uncommon at the end of summer.

This weed has also been affected by the changing climate and has also retracted south from Caloundra to Ballina, and what is most disturbing, has become locally extinct on Lord Howe Island.

The *Undaria* Pest

Undaria pinnatifida was introduced from Japan into Tasmania via ballast water discharged from woodchip ships at Triabunna in around 1988. It started out affecting ten kilometers of coast and rapidly spread to 80 km by 1994. In 1997 it was found at Tinderbox and is now found from Freycinet to the D' Entrecasteaux Channel and is being spread by water users.

Other than looking more transparent and delicate, Undaria is similar to the native *Ecklonia Radiata*. When the Undaria is ready to reproduce it develops a wavy sporophyll near the base that easily sets it apart visually. It can grow on reef or seagrass and smothers native seabeds (especially disturbed habitats) and marine farm gear.

It can be prevented by washing (well away from the ocean) and drying out anything used in affected areas like boats and wetsuits. Pump out your bilge water before moving to an unaffected spot.

Picture per CSIRO

When Cute Fish ATTACK!!!

Per SMH *[I will add my own emphasis to enhance the overly- dramatic affect – Ed]*

"THEY could challenge the South American piranha for viciousness and they can make sharks look positively docile."

A small, innocuous-looking fish called a chinaman leatherjacket is swarming in Sydney waters, attacking and eating **anything that moves**, from bare fishing hooks to **large marlin**. From 10cm to about 40cm long, the yellow and black striped leatherjackets look nothing like the popular perception of a marine predator, having tiny beak-like mouths a few centimetres wide.

But inside is a set of teeth like **razor-sharp chisels**. Anglers complain of leatherjackets biting straight through fishing hooks.

Geoff Somerville, who operates Ibex deep sea fishing charters out of Botany Bay, said that the chinaman leatherjackets had returned to Sydney waters in the past few weeks after several months of making life **hell** for fishermen on the South Coast. "They are back in **plague proportions**, the numbers are unbelievable," Mr Somerville said. "They have been **stripping the bottom** of the ocean of food in some places. The desirable fish like snapper leave because there's nothing left for them to eat. "If you do manage to hook a desirable fish and don't bring it to the boat quickly enough, all you'll reel in is a head or a skeleton. "The jackets just **strip the fish bare** of flesh. They'll follow a fish up to the boat and then swarms of them will just sit under the boat and it becomes impossible to fish." The leatherjackets' aggression and **gang attack behaviour** has been revealed in a stunning video shot at the scallop beds in Jervis Bay a few weeks ago, which showed leatherjackets attacking a large octopus.

The Daily Telegraph columnist and Modern Fishing magazine writer Al McGlashan said that on some days the fish were so aggressive he **feared what would happen if someone fell in the water**. "I've caught and seen mako sharks, tiger sharks, all manner of sharks and fish like barracuda - but leatherjackets are **the most vicious fish I've ever seen**," he said. "Sharks can actually be quite shy and wary, but they [the leatherjackets] will eat anything and they aren't afraid of anything."

Mick Collins from Otto's Tackle World at Drummoyne said there were reports a **pack** of 40cm leatherjackets had attacked a 2.5m marlin as it was being brought in to a boat during a tournament at Port Stephens last month.

Industry and Investment NSW Researcher Marcus Miller said the earliest known catch record in NSW is from 1883, when an annual report to NSW Fisheries identified leatherjackets as "troublesome to schnapper fishers". Mr Miller said that they are one of the most important species in the NSW commercial trap and trawl fisheries

[There, *I hope that has made it more of a mockery than it originally was - Ed]*

Early Tassie Explorers - their marine observations

MARC-JOSEPH MARION DUFRESNE, (1724-1772)

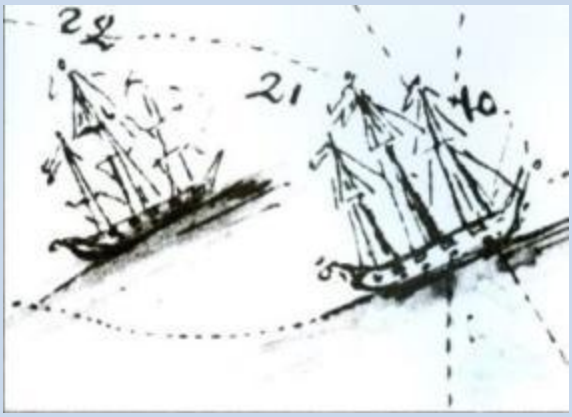
Another speculative commercial voyage followed Tasman. Dufresne's voyage wasn't very significant apart from filling in slightly more detail.

Born St Malo, Brittany, France, Marion first went to sea at the age of 17. During the war of the Austrian Succession (1744-47), he proved a brilliant young pirate for the French Crown and helped to rescue 'Bonnie' Prince Charles Stuart from the west coast of Scotland. Marion Dufresne then spent three months as a prisoner of war in England.

Returning to France, he voyaged to Africa, China, India and the Netherlands East Indies. After military service, in 1761 he took the astronomer Alexandre Gui Pingré to the Indian Ocean to observe the transit of Venus, and organized an expedition to the Seychelles in 1768. He then settled on the Isle de France (Mauritius).

In 1770 a Polynesian named Aotourou (who had been taken to France with Bougainville), arrived at the island with orders that a passage to his native Tahiti should be arranged for him. Marion Dufresne volunteered to take Aotourou home and to explore southern waters on the way. Largely financing the voyage himself, he purchased the *Marquis de Castries,* gained the use of the *Mascarin,* and left the Isle de France on 18 October 1771. An outbreak of smallpox resulted in Aotourou dying at Madagascar. Undeterred, Marion Dufresne proceeded and discovered the Crozet Islands.

In need of fresh water and timber to remast the *Marquis de Castries,* Marion Dufresne set a course for Van Diemen's Land as he knew from Tasman's account that there was land and timber there. He didn't take any risks in unfamiliar territory and followed Tasman's directions for *Frederik Hendrik's Bay*. He didn't like it and anchored in better holding ground slightly to the north in a great sandy cove he later named Marion Bay.



The fires and smoke, seen by day and night, were followed by friendly contact with Aboriginal people. The French tried to win them over with little presents, but they rejected everything. When Captain Marion went on shore, one of the natives stepped forward, and offered him a firebrand. The captain thought he had to light a nearby fire heap as a friendly gesture. This was greeted with a shower of stones, and captain Marion and the commander of the 'Castries' were both wounded. Spears were thrown and shots fired, several people were wounded, and one Aboriginal person killed.

They persisted in local explorations, but could find no water. Flinders wrote later of their observations of the local marine environment,

"They killed crows, blackbirds, thrushes, doves, a white-bellied paroquet whose plumage resembled that of the same bird at the River Amazons, and several kinds of sea birds, principally pelicans, and the black-bodied red bill [oystercatcher].

Many large rays were caught by the French, as also sea cats [Catsharks?], old wives [perhaps Boarfish], and several other fish whose names were not known. They found also plenty of crayfish, lobsters, very large crabs [spider crabs?], and good oysters; and the curious picked up sea stars, sea eggs [heart urchins?], and a variety of fine and rare shells.

Finding he was only losing time in searching for water in this wild country, captain Marion made sail for New Zealand. He got as far north as the Furneaux Group before turning East.

In the Bay of Islands, New Zealand, he again attempted to re-mast his vessel. After 3 months of friendly interaction, local Maoris attacked at Te Hue on 12 June 1772. The French appear to have unwittingly broken a tapu (taboo) by fishing in Manawaora Bay. Tapu had been placed on the area after members of the local tribe drowned there. The local Māori believed that the violation would anger not only the gods but neighbouring tribes, provoking war. When the French pulled up in their boat for a friendly chat, Marion and twenty-four of his crew were killed and eaten.

> *"They took the bodies and cooked them, and Te Kauri and Tohitapu of the Te Koroa sub-tribe ate Marion, and Te Kauri took Marion's clothes. The bones of the foreigners who had been killed were made into forks for picking up food, and the thigh-bones were made into flutes."*

He just didn't 'get it'. He wasn't just a foreigner, but an alien in the eyes of the indigenous people. The Maoris referred to these pakehas as 'tupua,' supernatural being, goblins, demons, objects of terror. The word 'kehua' used to describe them, means 'ghost, spirit.'

His second-in-command, Crozet, punished the Maori's by counter-attacking and apparently massacring 250 villagers according to Maori oral tradition. The French admitted 50 were killed in one burned village, and others in repulsing separate attacks. One of the villages attacked was that of an innocent tribe according to oral tradition,

> *Next day the boats of the ships came on shore, and they attacked two pas[forts] at Motuarohia, firing their big guns. One cannon burst, and one of the Ngati Pou chiefs who had been tied up on the ship said that he had bewitched the cannon, and it was for this reason that it had burst.*

His family was bankrupted by the expedition. Marion Dufresne's journal has been lost, but that of Julien Crozet, was published much later.

Diving Clubs - a Big Weekend at Bicheno

Hi all,

The Combined Clubs Weekend is fast approaching and it's shaping up to be another great weekend! Please find attached an information pack for the event, including [click on header for hyperlink to document]:

- **The CCW 2011 flier** – post it in your club/shop and distribute it to all your members and friends;
- **The latest CCW newsletter** – check out some of the try-dive gear, prizes and deals on offer;
- **The Underwater Photo Shootout Rules** – note that entries close for the "last 12 months" categories **prior to the event, on June 6th.**

Keep checking the website (www.ccwtasmania.com) and Facebook pages for regular updates leading up to the event.

If you have any further questions please don't hesitate to contact us, ccwbicheno@gmail.com.

See you all in Bicheno on June 11-13!

Cheers,
CCW 2011 Organising Committee

Time is running out to comment - Draft rock lobster management plan

For those who are interested the draft rock lobster management plan, revised details can be found at the DPIW website. The information paper contains an explanation of the proposed changes, if you are really keen you can have a look at the draft rules too.
Comment on the draft management plan will close 8 June 2011. An on-line web form has been developed to make it easier submit any comment you may have on the proposed changes.

http://www.dpipwe.tas.gov.au/inter.nsf/WebPages/LBUN-7WS26A?open

WHAT'S ON in June - July 2011

WOULD you like to advertise an event with a marine flavour, or advertise a web address? Let us know! So far only the scuba divers send me stuff.

Scuba diving clubs online calendars

TUDC – http://www.tudc.org.au/diving/dive_calendar.php
TSDC – http://www.tsdc.org.au
Contact us for TSAC, Ocean Plus and Leven upcoming events.

Recent Sea and Shorebird Sightings

Grey Goshawk Fort Direction South Arm - "Over the last few days I have noticed it swooping onto the ground time and time again with no apparent success, I suspect it might be a young bird or one in trouble as I noticed it feeding on 4 day old carrion just before dark last night."

Great Shearwater and Buller's Albatross St Helens Point - about 5 nautical miles east of St Helens Point, Tasmania. The bird was solitary although there was a band of Short-tailed Shearwaters and two Buller's Albatross also flying south nearby.

Great Skua near Craggy Island

Brown Booby - Hippolyte Rocks, Tasman Pen. And obviously off course as this is usual a tropical bird.

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*

P.S. - THANKS FOR ALL YOUR FEEDBACK ON THE LAST EDITION, Sue, Phil, Caleb et al, - keeps us all going

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