



NEWSLETTER OF THE SAPPHIRE COAST MARINE DISCOVERY CENTRE

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June 2013

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Who cares? We do!

Feedback from attendees at our 5th Annual Marine Science Forum was extremely positive which always makes our staff keen to start working on next year's event. Thanks for all the positive comments on the organisation and of course on the excellent presentations. Keep an eye on the website for news on next year's Forum – it will be here before you know it!

Below Right – L to R: Presenters Dr Steve Eggins, Dr Jane Sexton, Dr Ezequiel (Ziggy) Marzinelli, SCMDC's Sheree Epe, Kate Holland, Dr Pia Winberg and Dr Scott Ling – absent Kylie Owen



Dr Steve Eggins from ANU (above left) teamed up with his PhD student Kate Holland on their presentation about foraminifera research they are conducting off Eden. Kate is pictured below left with Sheree Epe from SCMDC.



Above right: Garrett Drago, Jason Caruso, Jonathan, Georgia and Tess Poyner and Michelle Slavik enjoying morning tea



Above left: Lyn Scrymgeour and Amanda Midlam

Above right: Angelika Erpic with SCMDC's Jillian Riethmuller



Above left: Presenter Dr Jane Sexton with BVSC Councillor Liz Seckold and Geoff Morris

Above right: Dr Nick Yee and Jervis Bay visitor Gavin Swan



SCMDC represented at ClimateWatch Workshop

SCMDC Marine Scientist Sheree Epe was recently invited to attend a ClimateWatch Marine workshop held at the University of Technology in Sydney. This workshop brought together scientists, marine educators and representatives of both government and community organisations and was a great opportunity to provide input into the development of the new ClimateWatch Marine project.

ClimateWatch Marine builds on the successful terrestrial-based ClimateWatch program (under the auspices of EarthWatch) and allows community members to log and record sightings of certain species. The program aims to understand how changes in temperature and rainfall are affecting the behaviour of Australia's plants and animals. The marine program will be used to understand species distribution shifts as a possible result of climate change and will focus on intertidal species.

Sheree said "it was a great opportunity to develop new contacts and provide some advice on how the program might be developed. SCMDC hopes to be further involved in the roll out of this new initiative."

Thank you Dr Anne Felton!

Our longest serving Board member Dr Anne Felton handed in her resignation recently after more than 8 years of voluntary service as an SCMDC Director. Anne is well known in the local region – and indeed nationally and internationally – as a marine geologist with immense experience and expertise. She has contributed more than many to the development of the Discovery Centre, from the days when a physical presence for the Centre was just a dream.

We pay tribute to Anne here with a series of images that endeavor to capture her passion and devotion to the Sapphire Coast Marine Discovery Centre. We are thrilled that Anne has now become an Associate Member and remains a trained volunteer so we will still see her often.



Congratulations Professor Keith Crook

As if Dr Anne Felton's achievements were not enough, Anne's husband Professor Keith Crook has been in the headlines for a very unique reason of late. Following is an excerpt from an article that appeared in the Canberra Times in recent months:

After five years of painstaking work, researchers from the Australian National University have identified a new species of fish, which raises questions about current theories of the evolution of land animals. The four researchers suspected they were onto something big when in 2008 they found a four-centimetre-long fang while searching for remains of a toothless armoured fish in rocks near Eden.

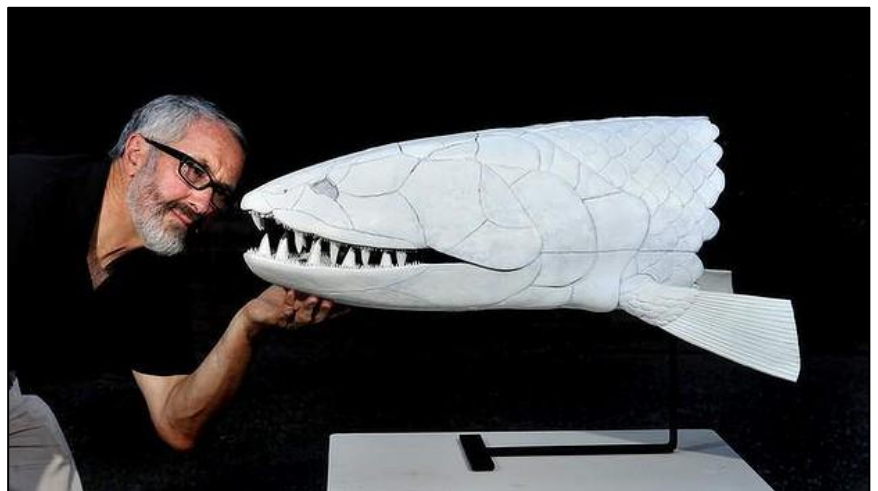
But it took years and "thousands of man hours" to put all the pieces together, catalogue them and determine that the 360-million-year-old remains were of a large, previously unknown species of predatory lobe-finned fish. "It's good fun to find these things and dig them up ... [but] you bring it back and then you're confronted by this great mass of blocks and what does it all mean?" Dr Gavin Young of ANU's school of earth sciences said.

"We could see all the bone, but we couldn't work out what it was - we thought we had two fish, two skulls jumbled up together. Later on we discovered it was just one skull which had been slightly displaced." Dr Young, his son Ben Young, Robert Dunstone and Dr Timothy Senden called the species *Edenopteron keithcrooki*, which became the official name on Thursday with the publication of their peer-reviewed findings in the international journal *PLOS ONE*.

It's named in honour of its Eden origins and Professor Keith Crook of the former ANU geology department, who now lives there and pioneered geological work in the region.

It's believed descendants of Devonian-period lobe-finned fish, such as the *Edenopteron*, evolved into the first land animals, but Dr Young said hypotheses of where this happened may need to be re-evaluated with the discovery of the *Edenopteron*. "*Edenopteron* was put in a family named after another fish found in Canowindra [in NSW]," he said. "When the Canowindra fish were described about 15 years ago, they were thought to be related to fish from the northern hemisphere and there's sort of a complete idea about how the land animals evolved from this entire group, and it all happened in the northern hemisphere. "Now that we've got the Eden fish and two fish from Canowindra, they actually form their own group, it really means that the entire sort of framework for how the first land animals actually evolved has to be completely rethought."

While only the head and pectoral girdle of the *Edenopteron* has been excavated and reconstructed, Dr Young and his team believe the fish - which has a 48-centimetre-long jaw - would likely have been about three metres in length. "It's a pretty big fish, it would have been a pretty fearsome predator, sort of on the scale of a saltwater crocodile today. "We know that part of the pectoral girdle is still in the rock, so if we can lift up a few more blocks, we might find that the body is actually preserved in the rock." The team applied for a permit to continue their excavation in Ben Boyd National Park six months ago, but are still waiting to hear back.



Dr Gavin Young and fellow ANU researchers have discovered a new species of ancient fish they have named "Edenopteron Keithcrooki". Dr Young is pictured with a life size model of the fish built by Baz Crook, son of Professor Keith Crook, who the fish is named after. *Photo: Melissa Adams*

SCMDC helps Octopus tetricus research team

In early May, a team of four researchers from the University of Tasmania, La Trobe University and Museum Victoria arrived in the region to collect samples of the Gloomy or Common Sydney octopus (*Octopus tetricus*) and carry out genetic analyses that will allow them to study the evolutionary processes that this species is experiencing during its range extension from southern Queensland and NSW to Victoria and Tasmania.

The team were welcomed by SCMDC Operations Assistant Kerry Wood. Kerry has been assisting the team from afar for some months now, sending samples and information about our own *Octopus tetricus*. Team member Jorge Ramos Castillejos said “we’ve had so much help from the Sapphire Coast Marine Discovery Centre and from locals who were very interested about the range extension of this and many other marine species. The trip was a great experience, friendly people, beautiful locations, great weather and lots of samples, it could not have been better!”



Above left: L to R – Luis Henriquez, Michael Amor, Kerry Wood and Jose Ramos Catillejos

Above right: L to R – Luis Henriquez, Michael Amor and Colin Silvey after a successful collection of samples

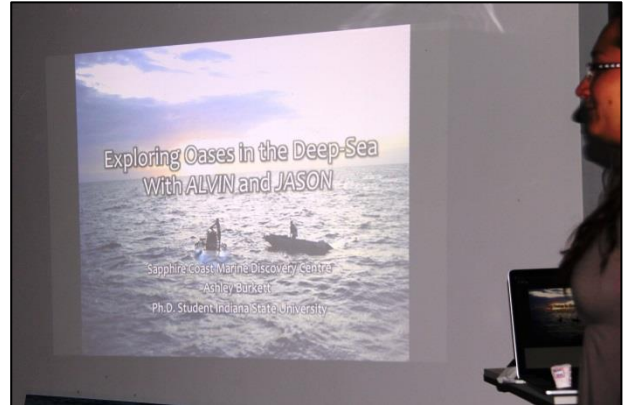
Below: Octopus tetricus (Sydney or Gloomy Octopus)



Ashley Burkett and her adventures in Alvin

Indiana State University PhD Student Ashley Burkett had a large and captive audience when she gave a presentation at the Discovery Centre recently. The audience was very interested in Ashley's journeys into the deep deep ocean inside the submersible known as Alvin. Ashley's research in the waters off Costa Rica and in other areas of the world's deepest oceans was fascinating. She is currently in Australia working at The Australian National University with our friends and colleagues from the Research School of Earth Sciences, noting that she is extremely impressed with the university and particularly in their state-of-the-art equipment.

Why not visit the Woods Hole Oceanographic website and find out more about Alvin. Click on this link for your own deep sea experience: <http://www.whoi.edu/home/interactive/alvin/> (Hold down your CTRL key and click to open).



Ashley is pictured above left with Associate Members Fred Hart and Nanette Anderson



Pictured right is the amazing Alvin returning from another deep sea mission.



Redmap Presentations identify some community champions



redmap
REDMAP.ORG.AU

Professor Natalie Moltschaniwskyj from University of Newcastle kept herself busy whilst on the Far South Coast recently. Natalie was tasked with informing the community about the roll out of Redmap across NSW, speaking to people at Narooma, Tathra, Merimbula and Eden during the week long visit.



Redmap stands for Range Extension Database and Mapping project. This project invites Australians to share sightings of marine species that are 'uncommon' to their local seas. Over time, Redmap will use this data to map which Australian marine species may be extending their distribution range – a.k.a moving house - in response to changes in the marine environment, such as ocean warming.

Maggie Brown, founder of Sapphire Coast Underwater Research Group (SCURG) was keen to see how her divers can get involved as well.

Of particular relevance is that all Redmap sightings are verified by a network of marine scientists around the country, which gives credibility to its data. It's a fantastic project for keen marine-savvy locals to get involved in – and if your sighting is validated, you get your name on their website!

Left: Associate Members John and Marg Sandefur with Maggie Brown from the Sapphire Coast Underwater Research Group (SCURG) and Prof Natalie Moltschaniwskyj after the presentation in Eden.

STAFF TAKE PART IN ORRCA TRAINING

Three members of SCMD staff recently participated in a training day for marine mammal rescue conducted by ORRCA (Organisation for the Rescue and Research of Cetaceans in Australia) in Narooma. ORRCA is also involved with the protection and welfare of seals, sea lions, dolphins and dugongs. Every year ORRCA volunteers spend many hours protecting hauled out seals and monitoring other marine mammals. We also work with Government Authorities and other groups with marine mammal rehabilitation and release.



Above left: luckily the water was warm for the practical cetacean rescue training. Above right: SCMD staff members Jillian, Sheree and Jen with the rest of the group at Narooma.

Murder in the Depths

SCMDC Marine Education Officer Jillian Riethmuller is receiving fantastic feedback on her newly developed marine education program entitled 'Murder in the Depths'. The Program, which involves hands-on interactive and experiential learning, was designed for high school students and if the trial run with Year 8 at Eden Marine High School students is any indication, the Program will be very popular with regional schools.

Murder in the Depths involves the mysterious death on a local beach of a marine mammal not normally found in our temperate waters. Students form groups and work their way through several 'science stations' where they use their problem-solving skills to try to determine the cause of death. Each station showcases a different science: taxonomy, chemistry, physiology, biology, oceanography and even physics.

Schools across the region are already showing much interest in the Program with confirmed bookings for Mallacoota P-12 College and Towamba Primary and a number in the process of finalizing dates. Any schools wishing to discuss a booking should call the office on 6496 1699 or email:

education@sapphirecoastdiscovery.com.au

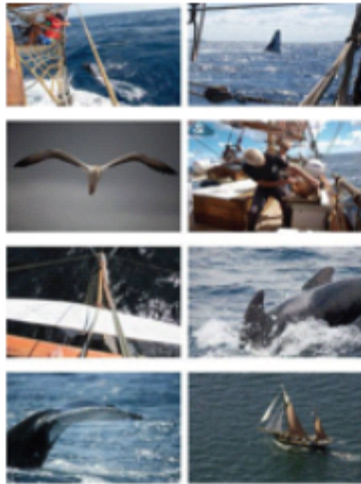
Funds for materials for this program were made possible with our ongoing support from The Australian National University Student Equity Program.



Adventurers Wanted: Setting sail to catch the 'colourful killers'

People with a sense of adventure and a passion for preventing our oceans from becoming a 'plastic soup' are wanted to join a unique expedition.

The nature tourism, scientific research and conservation project, **East Coast Odyssey**, will be the first expedition of its kind to tackle insidious micro-plastics in Australian waters.



A passionate scientist, a peripatetic tall ship sailor, two new generation garbologists, a beautiful 22m ketch, and a mission, a very important one, will launch in August.

Captain David Nash, one of the project founders, said the East Coast Odyssey was an historic opportunity to take a low-impact holiday, feel the amazing sensation of a wooden ship under sail at sea and contribute to vital research.

The mission, under the supervision of Monash University's Jennifer Lavers, is to collect data on the millions of multi-coloured plastic remnants killing marine wildlife at an alarming rate off Australia's spectacular east coast.

The restored 1930s Danish vessel Yukon will depart from Hobart to sail Australia's coastline trailing a fine gauge neustonic net designed to pick up surface traces of plastic being ingested at important seabird foraging sites.

But the mission is only possible with the support of lovers of the open ocean keen to board the Yukon for any of her 14 legs from Hobart to Brisbane and south again.

"The project's success rests entirely with people who have a sense of adventure, would love a memorable holiday and want to stop plastic poisoning our oceans," Wildiaries founder Simon Mustoe said.

With the assistance of the Two Hands Project, the expedition will also highlight the major influence coastal communities have on stopping the 'colourful killers', plastic debris poisoning wildlife and polluting pristine beaches.

Studies have found awareness of micro-plastics' devastating effects is very low, a trend Dr Lavers and the team want to reverse.

"East Coast Odyssey is a wonderful opportunity to help us see what is really happening on our patch - it's crucial we find out how much pollution is out there so we can find solutions that will make the biggest impact," Dr Lavers said.

>> Guests can support the project by joining the East Coast Odyssey from Hobart in August by booking a berth at:

<http://eastcoastodyssey.wildiaries.com>



East Coast Odyssey is a project involving Yukon-Tours, Wildiaries, Two Hands Project, Dr Jennifer Lavers, Ian Hutton Tours, Marine Action Conservation Society and yachtsman David Pryce.

SCMDC wins Grant for National Science Week



Staff at SCMDC were thrilled to learn that we have succeeded with a Grant to hold a **Community Open Day** on **Saturday August 17** to celebrate National Science Week 2013.

The Open Day will showcase the wonders of the local environment and highlight how science is an important tool in its conservation and management. This will be achieved through a variety of hands-on science activities, displays from a number of community and environment groups and a citizen science workshop with EarthWatch Institute Australia.

The citizen science workshop will be run by a representative of EarthWatch and a qualified marine scientist from the Discovery Centre. They will lead visitors on an excursion to a local rock platform where participants will be trained in species identification and how to record their sightings into the ClimateWatch database. This workshop will enable community members to participate in ongoing scientific research. Local community groups such as Rotary, Scouts and various other youth groups will be invited to take part.

We have invited a number of regional organisations to set up scientific displays within the Discovery Centre on the day including National Parks & Wildlife Service, Merimbula Aquarium, Atlas of Life in the Coastal Wilderness, Far South Coast Bird Watchers, Potoroo Palace and the Australian National University. All have been invited to showcase examples of science in the world around us.

With support from the Australian National University Student Equity Department, the Discovery Centre will inspire the local community to develop a love and passion for science by giving them the chance to conduct Nobel prize-winning science experiments in our research laboratory.

During the workshop, visitors will learn genetic engineering techniques where they transform bacteria by introducing a gene from the bioluminescent jellyfish, *Aequorea victoria*. The Open Day aims to entertain and educate visitors of all ages from preschool up through a variety of activities and displays.



Australian
National
University

This initiative is supported by Inspiring Australia and the NSW Government as part of National Science Week.



Become an Associate Member

Why not become an Associate Member of the Discovery Centre? There are loads of benefits: free entry to our many community information sessions, E-Newsletter direct to your inbox, FREE entry for 12 months into the Discovery Centre, 10% discount on our wide range of retail stock and the knowledge that you are helping us to grow.

At only \$40 per year per adult, it's a great way to keep up with the latest news and support the Centre at the same time. Contact the office on members@sapphirecoastdiscovery.com.au or phone 6496 1699 for more information.

Questacon gets fishy with SCMDC

Thanks to our Marine Education Officer Jillian Riethmuller being a former member of the *Shell Questacon Science Circus*, the Sapphire Coast Marine Discovery Centre made a splash with the team when they visited the region at the end of May. The *Shell Questacon Science Circus* visited the area to showcase the wonders and fun of science to schools and the general public.

Everyone got a taste of fun, hands-on science at the circus public exhibitions held in Merimbula and Narooma. The public exhibition has over 40 exhibits and exciting shows – all hands-on and interactive. Visitors can see flaming bubbles, a bed of nails, freeze their shadow and much, much more, although this time around a fishy element was added when the Sapphire Coast Marine Discovery Centre joined the mix.

We were invited to come along to the public exhibitions in Merimbula and Narooma with our touch tank and selection of dried specimens to showcase the wonderful marine life of our region.

The exhibitions were very busy with about 350 people at Merimbula and 500 at Narooma. The touch tank and dried specimens were a major hit and we were surrounded by interested children and parents the whole time. Many local people that weren't aware of the amazing creatures that live on their nearby shores.

The shows were the beginning of a wonderful partnership that we hope to grow from here with much more future collaboration.

Thanks to Merimbula News Weekly for providing the image of the entire team below (complete with some of our shark jaws!). [You can read the MNW article here.](#)



WEB CHECK

This edition's recommended websites
(hover your mouse over the link for instructions)

<http://wildiaries.com/>

<http://www.twohandsproject.org/>



We share so many great stories, information and photos on our facebook page
log on and check us out or Tweet us on [Twitter](#)

VOLUNTEERS...volunteers...VOLUNTEERS...volunteers...VOLUNTEERS....

Volunteers are a special and integral part of any community based not-for-profit organisation, not least the SCMDC. We provide training in a variety of volunteering roles so why not give us a call and consider joining our dynamic team? Commitment times are very flexible and will be honed to suit your needs.

**For further information, please contact Kerry Wood on 02 6496 1699
or email at kerryn.wood@sapphirecoastdiscovery.com.au**

SCMDC ANNUAL PASSES

AVAILABLE NOW!!

FEES:

Family (2adults + 3 children)	\$45
Extra child	\$5 each
Adult (16+)	\$25
Pensioners/students	\$20

WHAT DO YOU GET? Unlimited Entry for 12 months to the Discovery Centre + 10% off retail stock + Buy 1 coffee & get the 2nd coffee FREE from Great White Bite Cafe

CONTACT KERRY WOOD AT THE CENTRE TO PURCHASE YOUR PASS!