



sapphire coast
**marine
discovery**
centre

Who Cares?

Global research,
local issues



Photo: Dr Pia Winberg



Photo: Dr Scott Ling

Saturday 4th & Sunday 5th May 2013

Eden Marine High School Hall

MARINE SCIENCE FORUM



Photo: Simon Talbot

General public:

\$ 40 for Saturday, \$30 for Sunday, \$60 for both days (Early bird rates apply before COB 19th April 2013).

Children (minimum age 10) and students: FREE

Government agency employees

\$80 for Saturday, \$60 for Sunday, \$130 for both days (Early bird rates apply before COB 19th April 2013).

N.B. All fees include morning tea. Book for lunch on Saturday on the Registration Form.

How to register

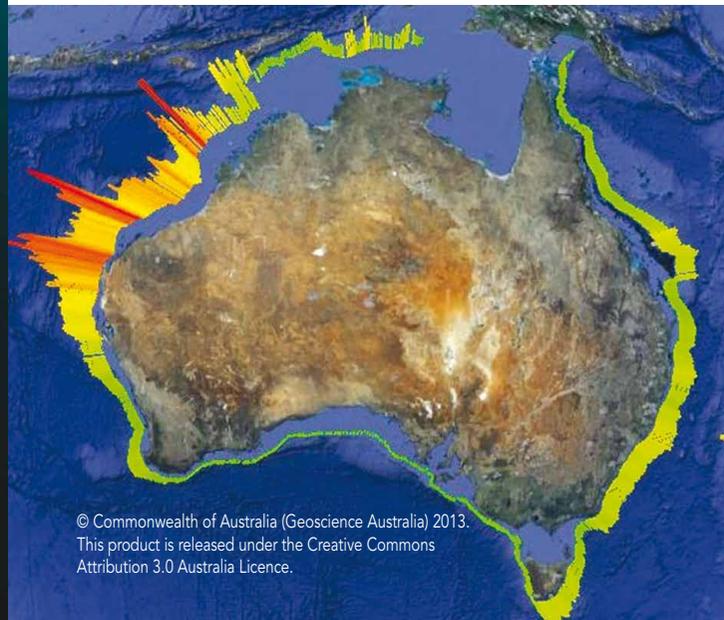
Collect a registration form from SCMDC or download the form from our website:

www.sapphirecoastdiscovery.com.au

and return with your payment to

Sapphire Coast Marine Discovery Centre, P.O. Box 239, Eden, NSW 2551, fax: (02) 6496 2404

or email: research@sapphirecoastdiscovery.com.au



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<http://www.sapphirecoastdiscovery.com.au/visit/events/>



Photo: Dr Scott Ling

Design: Jen Mallinson Photo: Dr Ziggy Marzelli

Who Cares?

Forum Venue:
**Eden Marine
High School Hall,
Barclay Street, EDEN**

Sapphire Coast Marine Discovery Centre

The Wharf Building, 253 Imlay Street

P.O. Box 239 EDEN NSW 2551

P: 02 6496 1699 F: 02 6496 2404

Email: admin@sapphirecoastdiscovery.com.au

www.sapphirecoastdiscovery.com.au

We are a not-for-profit community organisation, a Registered Charity and have Deductible Gift Recipient (DGR) status. All donations to our organisation are tax deductible.



Australian National University

a sponsor of the
Sapphire Coast Marine
Discovery Centre



Photo: Dr Scott Ling

8.45 – 8:45 – 9:00am Registration

9.00 am Welcome and Official Opening

9.30 am

Dr Scott Ling, Research Associate, Institute for Marine & Antarctic Studies, University of Tasmania

Presentation title: **Ocean warming, overfishing and overgrazing of kelp beds in eastern Tasmania**

Presentation Outline: Kelp beds appear resilient to a range of perturbations but can be pushed beyond critical thresholds leading to collapse, with recovery exceedingly difficult to achieve. In south-eastern Australia, coastal waters are warming at more than 4 times the average rate of global ocean warming, leading to major re-shuffling of marine species and major changes on rocky reef systems in this region. In eastern Tasmania, a most important range-shifter is the long-spined sea urchin (*Centrostephanus rodgersii*) which has extended its range south from NSW to Tasmania's rich and productive kelp beds. This presentation details how this ecologically important sea urchin has responded to climate change and dually explores the multiple processes influencing catastrophic overgrazing of kelp beds by the sea urchin, as is now observable within eastern Tasmania.

10:15 – 10:45am Morning tea

10.45 am

Dr Jane Sexton, Section Leader, Risk Analysis Methods, Geoscience Australia

Presentation title: **Tsunami: how wet will you get?**

Presentation Outline: Before the tragic events of the Indian Ocean tsunami on 26 December 2004, Australia was not prepared for the tsunami threat. The Australian Government and emergency managers around Australia were asking the question – how wet could we get? Untangling this question is yet more questions of how often will tsunamis occur, how big can tsunamis get and where will tsunamis come from? Here, we will look at tsunami history in Australia, how tsunamis are generated and how tsunami modelling can be used to fill the gaps in our understanding and estimate the potential tsunami impact to the Australian community.

11.30 am

Dr Pia Winberg, Director, Shoalhaven Marine & Freshwater Centre University of Wollongong Shoalhaven Campus

Presentation title: **Oysters anyone?**

Presentation Outline: Aquaculture of oysters is a globally important and a valuable, low-impact aquaculture industry, that provides both socio-economic and environmental benefits to a value of US\$3.7billion. The low ecological footprint of oyster production can even be considered as an offset to net nutrient and carbon input into coastal waterways around the globe with a phenomenal filtering capacity. However, the realization of the importance of oysters as a sustainable food now and into the future contrasts with a legacy and relentless struggle of local boom and bust patterns in a local context. The state of oyster aquaculture in NSW fits right in with the global patterns, but the opportunities to change the industry and lead by example will rely on local initiative, genetic tools and online technologies.



12.15pm Lunch

1:00pm

Dr Ezequiel Marzinelli, Postdoctoral Research Associate, Sydney Institute of Marine Science, University of New South Wales

Presentation title: **Restoring underwater forests**

Presentation Outline: Seaweeds are key marine habitat-forming organisms that provide resources that enhance biodiversity and support economically important species of fish and shellfish. Seaweeds are, however, declining globally, impacting on the biodiversity they support. In NSW, 'Crayweed' has disappeared from Sydney, affecting biodiversity. We are restoring these seaweed forests in an ecologically sensible way to enhance local diversity of fish and other marine organisms.

Saturday afternoon activities:

Your choice of the following activities for Saturday afternoon:

- Guided tour of the Sapphire Coast Marine Discovery Centre
- 1 hour guided beach geology walk - starting at 2.30pm



Forum dinner 6:30pm at
Mystique Restaurant, Halfway Motel, Eden \$50 per head set menu – bookings essential.

Photo: Dr Pia Winberg



Sunday 5th May

Photo: Scott Sheehan

8.45 am Chair will deliver a short summary of Saturday's outcomes.

9.00 am

Dr Steve Eggins and **Kate Holland**, Research School of Earth Sciences, Australian National University

Presentation title: **Why put the acid on Twofold Bay's planktonic foraminifera?**

Presentation Outline: About 1/3 of CO₂ emissions from fossil fuel burning has been absorbed by the ocean, causing it to become more acidic and affecting the ability of calcifying organisms to produce their calcium carbonate shells and skeletons. This includes the planktonic foraminifera, a group of tiny unicellular zooplankton that inhabit shallower parts of the open ocean and produce microscopic (<1mm sized) shells. We are collecting several species of Southern Ocean planktonic foraminifera from the outer shelf region off Twofold Bay and culturing them in the laboratory at the SCMDC, to determine how their shell calcification and chemistry is affected by changes in ocean acidification and temperature. This research helps us understand the affects of ocean acidification on the viability of this group of organisms, and interpret past changes in the ocean and climate.

9.45 am

Kylie Owen, Cetacean Ecology and Acoustics Laboratory, School of Veterinary Science, University of Queensland

Presentation title: **"Humpbacks lunging on local cuisine"**

Presentation Outline: It is currently believed that humpback whales fast while making annual migrations from polar feeding grounds to tropical breeding grounds. However, humpback whales are observed to feed off the coast of Eden, NSW each year. This study aims to describe the feeding behaviour of the whales using digital tags and determine how migratory feeding behaviour is influenced by changes in prey species.

10:30am Morning tea

11.00 am Closing