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Reef WATCHER

South Australia

Reef Watcher Production
Contributions welcome:
intertidal@conservation.sa.org.au
All contributions are subject to editing.

Reef Watch volunteers learn about marine pests in Victoria



Reef Watch volunteers with *Asterias amurensis* at Mornington pier.
Photo: Kevin Hutton

Six volunteers and two Reef Watch staff took part in a three day marine pest study tour of Victoria in mid January. Participants included Carl Charter, Stephen Leske, Gordon Smith, Jill Bajut, Stefan Bücheler, Dion Anderson, Neville Hudson and Kevin Hutton.

Feral or in Peril Project Officer Carl Charter said, "The aim of the study tour was to meet and work with Reef Watch Victoria staff and volunteers to learn to identify pest species in Victorian waters, particularly those that we do not have yet. It is very important that the South Australian community are able to accurately identify and report any new outbreaks of marine pests before they are able to establish permanently in

our coastal waters." Reef Watch Victoria staff and volunteers plan to undergo a similar tour of South Australia in late March 2011.

A highlight of the study tour was a guided cruise on the PV Pelican, a purpose built research catamaran with representatives of community groups including Marine Care, Reef Watch Victoria and Parks Victoria. The group was briefed about the day's activities while they cruised across Port Phillip Bay to view the 'freshwater line'. This was the outmost point of the storm and river water that had pushed its way across the bay after heavy rainfall the week before. Carl said "We could see a long line of scum on the water surface stretching off to the horizon – this line marked the progress of freshwater as it flowed quickly across Port Phillip Bay".

The group cruised slowly to Ricketts Point Marine Sanctuary, a 500 m wide and 3 km long Marine Sanctuary managed by Parks Victoria with community support from Reef Watch VIC and Marine Care community group. The group was shown a side sonar scanner (modified fish finder) used by Parks Victoria staff to map the reef system (160m

strip with one pass).

The dive mission was to survey and photograph marine pests and also to observe for any unusual behaviour of marine life due to massive freshwater inflow. The dive was a once in a life time experience – due to huge amounts of freshwater flowing into Port Phillip Bay we started our dive with a 3 m decent through muddy brown freshwater with less than 30 cm visibility before breaking through into relatively clear salt water. Looking up from 6 m the divers could see a halocline where less dense freshwater refused to mix with more dense salt water. Reef Watch SA participants found and positively identified a couple of marine pests that the locals (including Fisheries and Parks staff) hadn't seen at Ricketts Point Marine Sanctuary before! The group of divers found almost all the marine pests on the Victorian F/P slates including *Asterias*, *Undaria*, *Sabella*, and *Carcinus maenas*!

On the second day the group headed south to Mornington to spend the day with Harbour Dive, who have been attempting to eradicate northern Pacific sea stars for over 5 years.
(Continued Pg 2)

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Keep up-to-date with Feral or In Peril



Upcoming Reef Watch events

Subtidal Monitoring Clean Up Australia Day Sunday 6th March

We would like clubs to nominate a dive site or jetty they want to clean and at the same time look out for invasive species using the free Feral or In Peril slates that we provide.

Clubs should email details of their clean up site to Steve Leske at reefwatch@ccsa.asn.au and can also register with <http://www.cleanup.org.au>

Underwater Explorers Club of SA has a regular Clean Up Day dive on the Screw Pile Jetty at Granite Island. contact Hugh Sparrow, Safety Officer, Underwater Explorers Club of SA, Mobile +61 418 814 735, Email: hughsparrow@hughsparrow.net

Flinders Uni Dive Club, Rapid Bay jetty, 10am at the Jetty. Divers are encouraged to e-mail the club Email: cleanup@flindersclubs.asn.au to register" so we can let them know if the plans change(weather etc.) & provide food as well as car pooling options".

The Dive Shack, Port Victoria Jetty, 10am at the jetty. The dive will be followed by a BBQ. Optional boat dives. For more info and to register call the Dive Shack 08 8186 00 66

Coastal Waters Dive Club of SA, clean up dive at the Port Hughes Jetty, contact Sonya Vandergoot Email: sonyavandergoot@bigpond.com for more info.

Adelaide Scuba, Sunday March 6th. Lets Clean Up Glenelg Jetty! Meeting place will be at Adelaide Scuba, Patawalonga Frontage at 9:30am. We will then make

our way to the jetty & start the Clean Up. On the day we will also be running two boat dives 8:30am to Mac's Ground and 11:30am to Leather Jacket Alley. - Call the shop 8294 7744 to let us know if you will be attending & bookings essential for Boat Dives.

Reef Watch, Brighton Jetty, 8am at the jetty. For more info or to register, contact Steve Leske, Email: info@reefwatch.asn.au, 0400 272 177

Divers Delight, Edithburgh Jetty clean up dive. Meet at the jetty at 10am. Contact Divers Delight to register or for more info 8363 7518

Underwater Sports will be organizing a clean up dive on a weekend following 6th March. You will find more details on their web site soon: www.underwatersports.com.au

Victoria Marine Pest Trip (continued from page 1)...

The day began with a presentation by Fisheries officer, Harold Roeding, on marine pests and artificial reefs before a dive on Mornington pier. The dive included sightings of boar fish, sea horses, and hundreds, maybe thousands, of northern Pacific sea stars. Steve Leske and Stefan Bücheler collected over 200 specimens toward the end of their dive and brought them to the surface to show the non-divers before disposing of them (it is illegal to put them back into the water).



Photo: Carl Charter

Reef Watchers touring the Victorian Museum with Dr. Mark Norman

On the final day Wendy Roberts of Reef Watch Victoria and Museum Victoria met the group at the museum and took them on a behind the scenes tour. Highlights of the day included touring the vertebrate collections with Head of Science at Museum Victoria, Dr. Mark Norman and looking through sharks and the invertebrate collection with Dr Robin Wilson. The group then had a behind the scenes tour of Melbourne Aquarium with Jason Caruso and Wendy Roberts. Being one of Australia's largest

aquariums, with a great diversity of both marine and freshwater species, the tour had something for everyone.

Reef Watch SA would like to thank the crew of PV Pelican, Parks Victoria and Fisheries staff, Harbour Dive, Melbourne Aquarium and Museum for their hospitality, presentations and fun packed educational activities. Thank you to Reef Watch Victoria's Wendy Roberts for making this trip possible.



Marine pests presentation by Harold Roeding

Photo: Carl Charter



Shark Watch News

Shark Watch works to conserve the sharks that live in the seas off South Australia by supporting the community to contribute to our limited knowledge of these ancient creatures through sighting reports and photos, and by increasing awareness and understanding of their importance to the health of our oceans.

The last couple of months have seen some great progress with the Shark Watch project, including:

Identification and photo guide

This guide has been developed to help fishers, boaters, divers, etc to accurately identify and report sightings of those shark species being studied i.e. whites, makos, bronze and dusky whalers, and threshers. Community sightings reports are a valuable addition to the tagging and other research work being undertaken by marine scientists at the Aquatic Sciences Branch of the SA Research and Development Institute (SARDI) and Flinders University.

The guide also provides some hints on taking photos of white sharks to maximise the chances of identifying individual sharks by the notches on the rear edge of their dorsal fins and/or any distinguishing marks or scars.

Recruiting local contacts

Shark Watch utilises local people as much as possible to be the contact person for sightings reports and photos in their area. This is based on previous experience that showed that people are more likely to provide reports to someone locally than to some stranger in 'distant' Adelaide. A number of contacts have now been recruited, but we need a lot more – so please get in touch if you are interested in helping in this way!!

Shark-e-news

The first edition of this email bulletin, which will provide updates on shark research, conservation issues and other news, is due to be sent out shortly. Please contact me if you would like to be added to the mailing list.

Brochure and website

A brochure promoting the project has been developed and will be distributed shortly. We are also revamping the website - www.conservation.sa.org.au/sharkwatch - where you can download the new ID/Photo guide and brochure, find out who your local contact is, or report a sighting and upload photos on-line.

For further information please contact Chris Ball, Shark Watch Co-ordinator at carcharias42@gmail.com or on 8223 5155 (Conservation SA)

Shark Watch

Presents



Sunday 20th March, 3pm

Mercury Cinema

13 Morphett St, Adelaide

Tickets \$15/ \$8(concession)

Ph: 8223 5155



Reef Watch Intertidal Dates

Intertidal Monitoring Dates for 2011

Snapper Point Reef, Aldinga 11am Saturday 20th February

Yilki Beach, Victor Harbor 8am Saturday 5th March

Lady Bay near Normanville 12noon Saturday 26th February

Hallett Cove Reef, Hallett Cove Beach 11am Friday 4th March

For further information and to register please contact Carl Charter at intertidal@conservation.sa.gov.au

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First Winner of \$100 Tackle Voucher for Feral or in Peril Report



Sabella spallanzanii
European fan worm
reported at North Haven by
Braydon Amato

Fisherman Braydon Amato is the lucky winner of a \$100 tackle voucher donated by Spot on Fishing Tackle. Braydon spotted marine pest *Sabella spallanzanii* (European fan worm) on boat ramp pontoons at North Haven. *Sabella spallanzanii* occurs at many marinas and boat ramps along the Adelaide coast and has recently been discovered on Kangaroo Island. Braydon had a copy of Reef Watch publication 'Boat Owners Guide to Caring for our Coastal Waters' and a set of Feral or In Peril identification cards on his boat and reported the sighting to the Reef Watch website www.reefwatch.asn.au/fpreport. Reef Watch encourages any diver or angler who spots anything unusual or something they haven't seen in that area before to report the sighting to the Reef Watch website or Fishwatch on 1800 065 522. A BIG thank you to Braydon Amato for reporting his sighting and to [Spot on Fishing Tackle](#) for their support with the voucher.

Marine Parks update

The development of Marine Parks (MP) continues, with the release of preliminary zoning scenarios in mid November 2010. MP Local Advisory Groups and other stakeholders will advise Government on their preferred zoning scenarios in the first half of 2011. Changes to potential zoning scenarios will be discussed at the fourth round of LAG meetings, which are expected to be held in February. Remember these meetings are public and details about when they will be held is found at <http://marineparkssa.ning.com/page/local-advisory-groups>.

In the second half of the year draft management plans for each of the marine parks will be released,

including zoning, for formal state-wide consultation.

Conservation SAs initial response to the preliminary zoning scenarios is that those proposed in the Lower South East and Upper St Vincent Gulf are too small, in the wrong place and too fragmented to meet the conservation outcomes needed. For the full media release see <http://www.conservation.sa.gov.au/media-releases/999-governments-proposed-marine-sanctuaries-will-not-protect-south-australias-unique-marine-life.html>. The Conservation Council of SA will also be supporting a more detailed conservation sector response to the preliminary zoning scenarios.



©Ali Eaton

From the end of January Robyn Bishop will no longer be in the Marine Community Support Facilitator Position. Kathryn Warhurst will be taking over this role, please contact her on 8223 5155 or at kathryn.warhurst@adelaide.on.net



Point Pearce Sea Country Day

The next generation of reef watchers recently attended the Point Pearce Community School Sea Country Day. Jointly organised by the Point Pearce Community School and the Conservation Council of South Australia Marine Facilitation Program, Sea Country Day was an opportunity for students, teachers, community members, and NRM staff to discover more about their local marine environment, Narrungga connections to the sea and marine conservation.

The junior primary school students from Point Pearce and Maitland schools spent the day discovering marine life and had a great time exploring the intertidal zone near Port Victoria Jetty. Point Pearce community Elders, Lindsay Sansbury and Lynette Newchurch, provided a very special contribution to the day's program by telling stories about Narrungga peoples' relationship to the sea. The Point Pearce community is keen to continue their partnership with Conservation SA on Reef Watch and marine education.



Photos courtesy of Robyn Bishop

Scholarship student working with Reef Watch

By Stefan Bucheler

After having volunteered with Reef Watch for over a year in the subtidal monitoring program I have been fortunate enough to have gained the opportunity to work with Reef Watch for ten weeks full-time this summer.

I was awarded the 'BAYERBoost' environmental scholarship for a year twelve student for 2010/2011. BAYERBoost is an environmental scholarship scheme aimed at giving senior secondary school and undergraduate tertiary students experience in environmental research or restoration during the summer break.

Funded by innovation and research company Bayer Australia, and administered by the Australian Geographic Society, BAYERBoost scholarships aim to give young people the opportunity to gain knowledge and experience through working with an environmental organisation. This year there were three such scholarships available in Australia, worth \$3,000 to \$6,000, and applications were open for students from year eleven and twelve as well as from tertiary institutions.

Due to my interest in the coastal and marine environment my application was to work with the Reef Watch program for the scholarship period. I have been working with Reef Watch since January and will

continue until late March.

It is a very interesting and educational time for me so far. I have been doing numerous tasks and activities, including field trips, producing training materials for volunteers, cataloguing photographs and most importantly organising a community slide night about the South Australian underwater world. The opportunities and experiences with Reef Watch that this scholarship has brought me are fantastic, and I am looking forward to the weeks ahead!





Sustainability Programs: Green Hubs and Sustainability & Community Grants

By Kathy Whitta, Sustainable Communities Coordinator

Conservation Council SAs Sustainability Programs are all about creative community engagement on sustainability and climate change. By approaching behaviour change at the peer level and assisting community groups to educate their own communities we are able to inspire ownership of projects and effect lasting change.

Through our Green Hubs program we work with community organisations and clubs to assist them to become more sustainable in terms of waste, water and energy management. We arrange an audit of their premises and then assist the club to develop an action plan for making sustainable changes, suggest funding options and assist with applications, and facilitate an education workshop for the hub community.

We currently have eight hubs and have another seven organisations interested in coming on board. The latest is the Mt Pleasant Natural Resource Centre who have just signed their charter and are about to undertake their audit. Works at established hubs include Bokashi composting at Woodville Bowling Club, insulation for Henley Football Club and installation of dual flush toilets and low-flow adaptors for taps at the Cobdogla Oval in the Riverland. Education workshops in the pipeline include home energy efficiency at Woodville Bowling Club and basic sustainability for small business and community organisations at the Adelaide Hills Natural Resource Centre.

With the support of the Department of the Premier and Cabinet (DPC) we have distributed



Feast Festival 2010

\$180,000 in funding to community groups as part of our 2010/2011 Sustainability & Community Grants program. An exciting and diverse range of projects are currently underway including:

- community gardens for refugee communities in Murray Bridge and a carbon reduction challenge on the Limestone Coast
- Women in Agriculture & Business have facilitated talks on behaviour change and climate change in regional areas
- Feast Festival presented an interactive online exhibition with a cycling theme and provided a secure bike area at their hub
- Radio Adelaide are producing sustainability announcements in Swahili, Nepali, Hindi, Farsi, Chinese and Spanish!

We are currently documenting these fantastic projects in a short film that we hope to premiere mid 2011. We have thus far conducted interviews with members of the Adelaide Tamil community, who took part in a climate change education project, and

organisers at the Seaford Meadows Scout group who have created a community garden and assisted local young people to gain their Certificate II in Horticulture. The film will be featured on the Conservation Council SA and DPC websites, and will be distributed to grant recipients as a record of their achievements.

We will soon be launching an online forum for Green Hubs and grant recipients to document their progress and share information. We plan to host a celebration event midyear for all participants, to acknowledge the work they have undertaken and provide networking opportunities.

It is truly inspirational to see the work that is taking place all across South Australia as a result of these programs. We hope to expand in the future by incorporating more hubs and holding an annual grants round. By supporting such programs Conservation SA is able to assist communities to become more sustainable and resilient in response to our changing climate.



Oceans Where Fish Choke

ARC Centre of Excellence for Coral Reef Studies

Australian marine scientists have expressed disquiet over the continued worldwide spread of large, dead zones in the ocean.

Professor Ove Hoegh-Guldberg and Associate Professor Mark McCormick of the ARC Centre of Excellence for Coral Reef Studies have recently published scientific articles that raise concern about the impact of large areas of ocean emerging that are so low in oxygen that fish and other sea life cannot survive.

Hundreds of dead zones are being reported around the world in areas that have been overfished and where rich nutrient runoff from the land is causing blooms of algae that lead in turn to blooms of bacteria that strip the oxygen from the water.

“We think this problem is also linked to climate change,” Professor Hoegh-Guldberg of CoECRS and the University of Queensland argues in a recent review article in the leading international journal *Science*.

“Warmer oceans tend to form layers that, like stagnant ponds, are low in oxygen. Changes in wind strength and ocean currents driven by climate change affect the degree of mixing that goes on between surface and deep waters and this is changing the nutrient distribution, causing anoxic zones to form.”

A total of 405 dead zones have been reported by oceanographers worldwide during the period 2000-08, compared with 300 in the 1990s and 120 in the 1980s. The number has been doubling every decade since the 1960s. Some zones are as small as a square kilometre, while others are 70,000 sq kms in extent. Together they cover about 245,000 sq kms of the planet’s oceans.

Associate Prof Mark McCormick of CoECRS and James Cook University

says the loss of oxygen from waters in the world’s major ocean basins is one of several factors contributing to increased stress on world fish populations. “We know from our recent work that increases in stress result deformities leading to poorer survival of fish larvae.

“Low oxygen levels increase stress on fish. It has also been found they can cause fish to have smaller ovaries, produce fewer eggs, so larvae are also smaller and less likely to survive,” he says.

He says a large area of the central Pacific, between 200-600 metres deep, has only a tenth of its normal oxygen levels, causing profound changes to the type of sea life that can inhabit it. “As the ocean warms it is likely this hypoxic (low oxygen) zone will move closer to the surface and spread out onto the continental shelves. This will have repercussions for both recreational and professional fisheries.”

Prof McCormick says that in cases where anoxic (zero oxygen) zones occur along heavily populated coastlines, major fish kills are often reported and coastal communities incensed.

Scientists fear the increase in the number and size of the dead zones may herald a mass extinction of sea life. In a recent review paper published in the journal *Science*, Prof. Hoegh-Guldberg and co-author John Bruno linked the phenomenon to mass extinctions of the past, saying “There is growing paleontological evidence that declining oxygen concentrations have played a major role in at least four or five mass extinction events.”

Low oxygen zones have now been found in all the world’s oceans, with particular hotspots in places such as the Gulf of Mexico, off Namibia in the South Atlantic, in the Bay of



Bengal, in the Baltic, Black Sea, the tropical South Pacific, off China and southeastern Australia.

These anoxic zones are likely to be connected to an observed decline in ocean phytoplankton -that supports the entire marine food web - of about one per cent a year, Prof. Hoegh-Guldberg says. In a chain reaction, this loss of the marine food base may be a factor in the worldwide decline in fisheries.

“Coastal dead zones correlate strongly with heavy human populations, runoff and overfishing. In the open oceans changes in winds and currents and the formation of warm layers may be the main factors.

“It adds up to a conclusion that our ocean ecosystems are in a lot of trouble – and it all bears the hallmarks of human interference. We are changing the way the Earth’s oceans work, shifting them to entirely new states that we have not seen before,” Prof Hoegh-Guldberg says.

“Among them are these black anoxic zones that belch up dead sealife. It may be happening in pockets today, but the risk is that it will happen on a far greater scale in future unless we take urgent steps to reduce the impact of human activities on the world’s oceans and their life.”

“The Impact of Climate Change on the World’s Marine Ecosystems” by Ove Hoegh-Guldberg and John F. Bruno was published in *Science* vol 328, June 2010, and Gagliano M and McCormick MI (2009) Hormonally mediated maternal effects shape offspring survival potential in stressful environments. *Oecologia* 160:657-665.



Many thanks to our generous sponsors and supporters

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- Adelaide and Mount Lofty Natural Resources Management Board
- Biosecurity SA
- Department of Environment and Natural Resources
- SARDI, Aquatic Sciences

Reef Watch also acknowledges the generous support of the diving industry for Reef Watch events.



Government of South Australia



CARING FOR OUR COUNTRY



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Help save time, money and the environment! Please send me Reef Watcher via email only. Email your details: info@reefwatch.asn.au

Reef Watch Marathon Dive

Come and count fish for fun!

Sunday, April 3rd, Noarlunga Reef

Dive or snorkel a designated section of the reef and count and record the fish you see on the slates provided. ID training will be provided on the day and a boat will ferry divers to the outside and southern end of the reef.

BYO dive & snorkel gear – identification slates and data sheets provided for free.

Includes a free BBQ for all volunteers.

Also on the day – displays, t-shirts for sale, staff available to answer your questions about the marine environment.

If your dive club is interested in doing a fish count at another site, please contact Steve for some fish identification training.

PLEASE register to attend this event.

Contact: Steve Leske 0400 272 177

Email: info@reefwatch.asn.au

