



## Issue 7.2 - August 2004

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### Introduction

Despite the enthusiasm of Reef Watchers to get in the water, the winter season has not been kind to Reef Watch so far, with seven dives cancelled due to weather! All the same, progress has been made on a number of other fronts:

- Several educational (and social) evenings are planned for the future, with a slide night on August 19<sup>th</sup> (see below), a public talk from Tasmanian ecologist Neville Barrett in September, and an identification workshop in October.
- Some important news from "Adopt a Reef" clubs.
- Identification manuals have been developed, complete with on-line tutorials and quizzes enabling you to test and improve your identification skills at your own pace.

If you currently receive this newsletter in the post and would prefer to receive it by email then let us know at [info@reefwatch.asn.au](mailto:info@reefwatch.asn.au). If you do not have access to the internet and need help obtaining any on-line reports or other information we refer to in this newsletter, call us on 8223 5155 and we'll mail you a hard copy.

#### **A note from Pamela - did you know this amazing footwear feat...**

*the humble flip-flop (our thong) in Kenya invariably finds itself as flotsam on the great ocean waves, where it provides a means of welcome transport for tired crabs, or a place to hang out for goose barnacles...Now that's cool!*

## **Reefwatch “Slide” Night**



**WHERE:** Duke of York Hotel (82 Currie St, Adelaide - Upstairs)

**WHEN:** from 7 pm on Thursday 19th August, 2004.

**RSVP:** to [info@reefwatch.asn.au](mailto:info@reefwatch.asn.au) or phone 8223 5155, by Mon, 16th August

**COST:** gold coin donation for supper

We invite all Reef Watchers, their friends and any interested members of the public to attend a slide night at the Duke of York Hotel from 7 pm on Thursday 19th August, 2004. This is a great opportunity to catch up with or meet other Reef Watchers, have some fun, and learn more about marine life and the Reef Watch program in an informal setting.

We will provide:

- Slide projector and screen, PowerPoint projector and laptop
- A panel of experts to identify your weeds and beasties
- A light supper
- Drinks across the bar
- Prizes

What you bring: **IMAGES**

We want you to bring and show off some of your favourite shots, as well as others of animals or plants that you would like identified, or would like to know more about. This is a really good chance to satisfy your curiosity. We will have some expert biologists in the audience who will be happy to answer queries.

You can bring slides, or for the more modern, digital images or short movies on a CD, and if convenient deliver them to Reef Watch at the Conservation Centre (120 Wakefield St) prior to the event. For queries contact Reef Watch.

## **How Well Do You Know Your Fish, Algae & Invertebrates?**

The Reef Watch website ([www.reefwatch.asn.au](http://www.reefwatch.asn.au)) now has on-line illustrated tutorials and quizzes to help you build your identification skills of fish, algae and invertebrates. Go to either of the “Reef Health Monitoring -> Manuals” fish or benthic survey sections. Images are displayed and you can choose/guess the organism from a menu or find out the correct answer if you don't know.

There is also a benthic lifeform identification manual (for algae and invertebrates) that can either be downloaded or requested from Reef Watch. This manual is best used in conjunction with *Australian Marine Life* (by Graham Edgar).

## **Marathon Dive**

The 2004 Reef Watch "Marathon" dive took place at Noarlunga Reef on Sunday 14th March and involved 50 divers and 20 snorkellers. In total there were 41 fish surveys and 18 benthic surveys (LITs were done for the first time on a marathon dive). There was significant media coverage of the event.



Half of the 50 divers had been previously trained in the survey methods, while the other half received training on the day, as part of the PADI Reef Watch Survey Diver Specialty Course. For Tim Woonton and Maggie McGilchrist, it was their fourth and final dive of this course which now has 28 graduates and 88 other divers at various stages.

The event could not have taken place without the involvement of the dive instructors and divemasters, namely Dave Albano, Andy Davoren, Christopher Deane, Kevin Smith and Nick Turich, and of course Mary-Anne Stacey who ran her boat from dawn to dusk. The assistance of Daryl Metters, Patsy Mendham, Judy Kirkman, various members of the steering committee and many other volunteers was also vital.

The kits used for the monitoring were the result of a grant of \$1800 from the PADI Project AWARE Foundation. The event was also supported by Port Noarlunga Dive and Snorkel Centre, Underwater Sports, Southern Diving, Dolphin Dive and Divers Delight, who provided various incentives and discounts to participants. Dolphin Dive have agreed to give ongoing such support to the program, and discussions are continuing with the metropolitan dive shops.



The data gathered was entered on the day or shortly after, and is currently being processed, along with data from previous marathon dives in 2000, 2001 and 2002. The results are being compared with those of scientific studies performed for the EPA by Adelaide and Flinders Uni in 1996 and 1999 (see the Reef Watch website [www.reefwatch.asn.au](http://www.reefwatch.asn.au), "Reef Health Monitoring -> Reports" section for these reports).

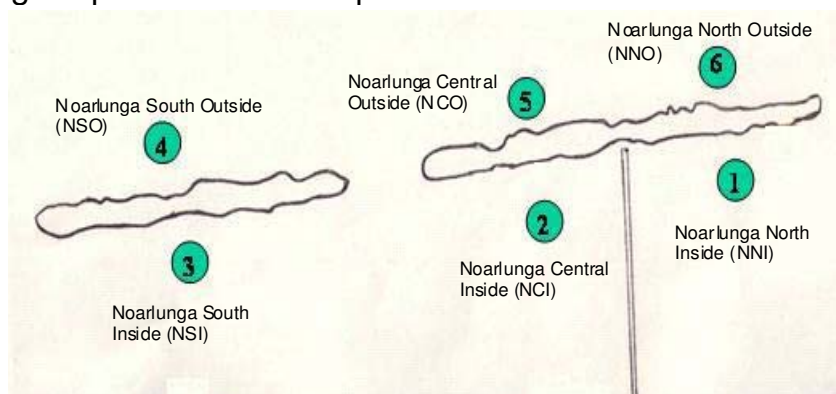


A more complete analysis of the data from Marathon dives and the conclusions reached is being compiled into a report that will be freely available. Articles are also being prepared for Southern Fisheries, EcoVoice and numerous other publications. For now, we will present a subset of the results.



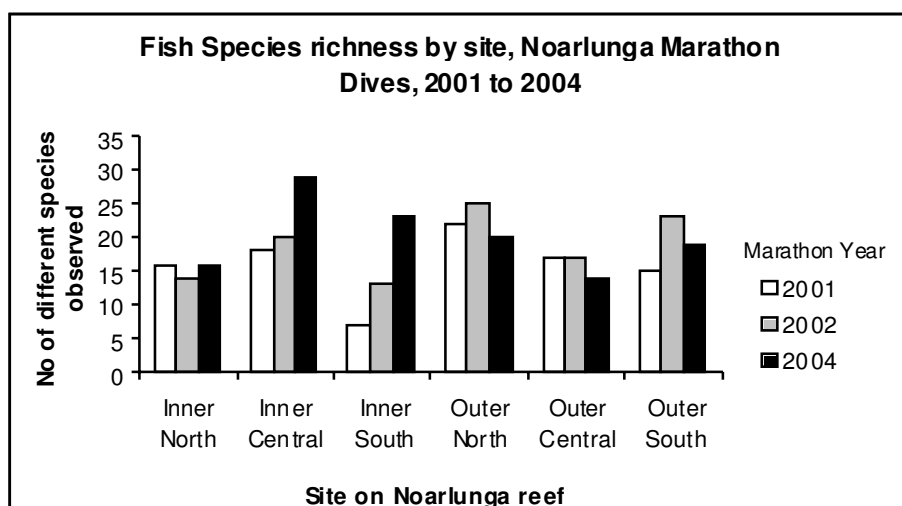
Marathon Dive Sponsors

The following map is to assist interpretation of the results:



## Fish

One simple yet interesting finding from the fish data collected during the 2001, 2002 and 2004 Marathon dives is the total number of fish species (“species richness”) observed in different parts of the reef. This is shown in the graph below:



If you look at the numbers of fish species in 2001 (white bars) there appear to be more fish species present at the northern outside site than at other sites. The pattern is quite similar for the 2002 (grey bars) marathon dive. This consistency in the data, for most of the sites across several marathon dives, shows that we can be fairly confident in the quality of the data.

The observations for 2004 showed some slightly different trends. Firstly there were 29 species observed at the central inside site compared to 20 in 2002 (although the fish count methodology had changed during 2003, with a second or return pass for recording fish under the canopy or ledges, the data from this second pass was not included for this comparison).



One might argue that this difference of nearly 45% is due to volunteers improving their fish identifying skills over the years! This may be true to a certain extent but there were also fewer species recorded in 2004 at each of the outer reef sites than in 2002.

Not all of the sites were surveyed in 2000 and for clarity those data were not presented in the graph above, however, for each of the 3 outer sites that were surveyed in that year there were far fewer fish species recorded than in every subsequent marathon dive.

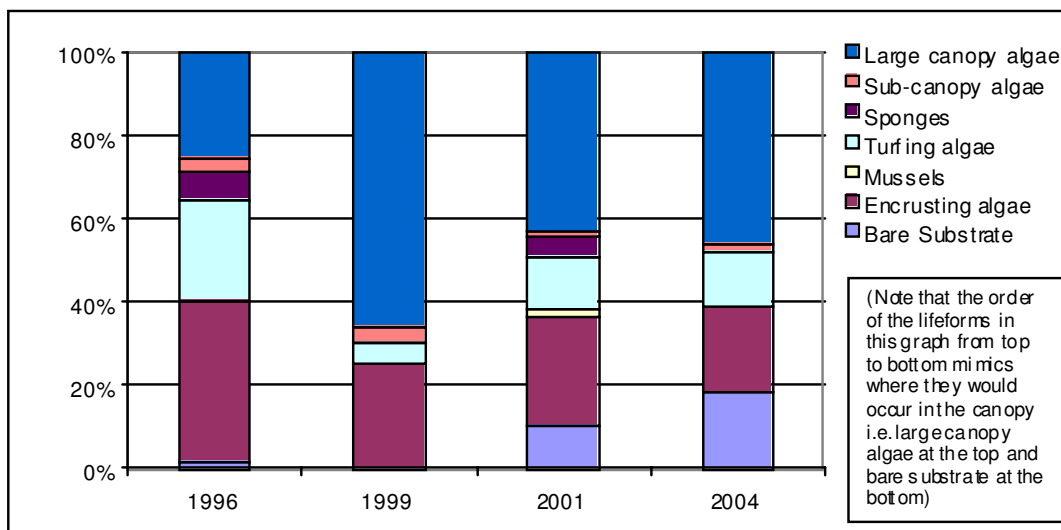
While there are a few different factors which affect the way this information can be interpreted there does appear to be a trend of improving fish species diversity over the five years that volunteers have been collecting information during Marathon dives.

### *Benthic Habitats*

The report currently being prepared about the Reef Watch marathon data will show the current status of the Noarlunga benthic reef habitat, and will explore any links between this and the results of the most recent fish survey. It will also describe in general terms how different parts of Noarlunga Reef have changed over the last decade. Data from two sources will be used:

- The Reef Health studies undertaken by Flinders and Adelaide Universities for the EPA in 1996 and 1999 (prior to the first Marathon Dive). Reports from these studies are available on the Reef Watch website ([www.reefwatch.asn.au](http://www.reefwatch.asn.au), "Reef Health Monitoring -> Reports" section).
- Reef Watch data from 2001 and the 2004 Marathon Dive. Note that Reef Watch is the only program that has been monitoring the metropolitan and southern reefs over the last five years.

Here is some preliminary information about the change to one section of the reef, the northern outside reef (NNO), over the last eight years. The graph below indicates how the bottom cover is divided up between the various lifeforms identified during the surveys (totalling 100% for each year surveyed). For example, the top part of each graph is the large canopy algae (in blue for those of you that are reading the colour PDF version). You can see that it accounted for about 25% of the cover in 1996, about 65% in 1999, and then about 45% in 2001 and 2004. Also, there was almost no bare substrate (rock) in 1996 or 1999, but it increased to about 10% in 2001 and 20% in 2004.



Changes in the composition of Noarlunga North Outside NNO over the last decade. Data for 1996 and 1999 were obtained from the Reef Health Surveys commissioned by the EPA while more recent data (2001, 2004) were collected by Reef Watch volunteers.

Note: given that the LIT method records the cover of organisms from above, it is biased towards the canopy lifeforms. As a result, if there are a lot of large algae, smaller lifeforms (e.g. LOBE algae, or STAR or SNAIL invertebrates) may not be recorded because they weren't visible below the canopy. It does not mean that they weren't there! If the quadrat method were used instead, those organisms would have been recorded. The LIT method does however have a number of other advantages that make it a more reliable method overall.



### *How Noarlunga Reef Has Changed*

To understand the changes to a particular reef or section of reef, it is important to know what was happening in the wider area. According to available data, macroalgal cover on most of the Gulf St Vincent reefs was less during the mid 1990s than at the end of the decade, hence the change from 25% large canopy algae to 65% in the 1990s on the outer north section of Noarlunga Reef. This is believed to be the result of variations in climate (more information can be found in the 2004 PhD thesis by Reef Watch Chairman David Turner).

Reef Watch divers have detected a reduction back to about 45% during 2001 and 2004 on the outer north section of Noarlunga Reef. This is believed to be the result of changed conditions on the reef arising from increased sedimentary impacts (see David Turner's thesis).



Another scientific reef health survey is being planned for the end of this year with funding from a number of state and federal agencies. This will provide an opportunity to validate the findings of Reef Watch divers.

#### *Importance of these findings*

The large canopy algae described above are an important part of the reef ecology, providing lasting homes for a number of other species. The replacement of these large brown algae with bare space can be taken as a sign of degradation, and reefs under such stress may be in danger of losing some of their diversity.

### **EXTENSIONS TO PT VINCENT MARINE STUDIES CENTRE**

From Scoresby Shepherd:

*On 22 July last I attended the formal opening of extensions to the Marine Studies Centre at Pt Vincent Primary School. Although it has only a few students, the Centre is unique as an important teaching facility in marine studies for the whole of Yorke peninsula. The extensions now boast an impressive display of a large number of temperate and some tropical molluscs, which the children are putting in taxonomic order. In addition there is a growing library, and several first class marine aquaria displaying common species found in coastal waters.*

*The official opening, attended by local and State representatives, was actually orchestrated by the children (under the watchful eye of the Head), and they performed splendidly.*

*Before the opening I took the opportunity to dive on the School's adopted reef, a few km north of the town. It is a low algal-covered reef with a few caves and crevices, and gives plenty of scope for practical training in monitoring.*

*With both a practical and curriculum-focused teaching agenda in marine studies, this school is undoubtedly a jewel in the crown of school education. Congratulations to all at the school.*

(Editors note: students of the Port Vincent Primary School have been monitoring "Golf Course" reef for the last 6 years using the Reef Watch fish count method).

## **STEERING COMMITTEE**

The steering committee was formed by putting out a call for nominations in May 2004 through the dive clubs and Reef Watch email list. There was a very positive response, with more than 15 nominations. Consequently, we have a core steering committee supported by several subcommittees, with further people agreeing to assist in particular areas as honorary consultants. Thus all those wishing to be involved have been included in a way that should see significant development of the program in a number of areas.

The door is open for additional committee members, and although expertise is particularly sought to fill gaps in marketing, media liaison and information technology (particularly interactive websites), the only essential criterion is enthusiasm.

The following is a brief description of the core focus of each of the committees:

The role of the **Steering committee** is to oversee the project, address any issues that arise, and give direction to the project officer personnel. It is a working committee that undertakes a range of tasks to support the project;

The **Scientific sub-committee** has several roles, including data analysis and advising on training materials;

The **Events sub-committee** organises workshops, presentations and social events and supports the non-diving aspects of marathon dives;

The **Operations sub-committee** has been established to facilitate club liaison and to advise on and work towards the improvement of monitoring and training dives.

| <b>Steering Committee</b>   | <b>Scientific Sub-committee</b>  | <b>Events Sub-committee</b>   | <b>Operations Sub-committee</b>                               |
|---|--|---|---|
| David Turner<br>(Chair)<br>Greg Ferguson<br>(Secretary)<br>Mark Young<br>Ali Bloomfield<br>Agnes Cantin<br>Alison Eaton<br>Danny Ashcroft<br>Bryan McDonald | David Turner<br>(Chair)<br>Adrian Brown<br>(Secretary)<br>Greg Ferguson<br>Hugh Kirkman<br>Agnes Cantin<br>Sue Murray-Jones<br>Nick White<br>Bryan McDonald<br>Alison Wright | Sue Murray-Jones<br>(Chair)<br>Ali Bloomfield<br>(Secretary)<br>Stephen Merrett<br>Alison Eaton<br>Danny Ashcroft<br>Nick White | Kevin Smith<br>(Secretary)<br>Stephen Merrett<br>Adrian Brown |

## Spotlight on some new committee members

**Dr Hugh Kirkman** - Hugh spent 27 years with CSIRO Division of Fisheries mainly working on seagrass ecology, although his PhD was in the ecology of kelp. His last years with CSIRO were spent mapping the underwater features of southern Australia including Tasmania. From 1998 until 2003 he was the director of the UN Environment Programme East Asian Seas Regional Coordinating Unit stationed in Bangkok. He is experienced in management and policy making of marine coastal areas, has worked with senior government officials and NGOs and is familiar with grant applications and proposals.

**Adrian Brown** - Adrian has some 25 years diving experience in South Australia, with interests in marine ecology and maritime archaeology. He has a degree in Environmental Management and a post grad certificate in Maritime Archaeology.



**Mark Young** – Mark has only been diving 4 years but has already clocked up more than 600 dives, in all conditions. While others are talking about it, Mark is out there diving it! Mark is an avid photographer, with several thousand photos in well documented albums. Mark has links with several clubs and is currently assisting BSAC as they commence their involvement with Reef Watch.

**Ali Bloomfield** - Ali works for the Coast and Marine Conservation Branch of DEH as a Research Officer for Marine Protected Areas and has a variety of survey experience.



### Want to get involved in Reef Watch?

For diving or snorkeling activities, visit our website, follow the quick link to “next dive”.

If you want to get involved as a volunteer in our committee, administration or development work, contact Reef Watch at the Conservation Council, 8223 5155, [info@reefwatch.asn.au](mailto:info@reefwatch.asn.au).

Sincere thanks to Pamela Newland and Julia Murrie for a sustained volunteer effort and thorough job on the identification manuals, and thanks also to Pamela for her work on this newsletter.

## **OCEANIC OLYMPICS 2004 – SPECIAL REPORT FROM PAMELA**

Corresponding to the year in which the human olympic games are to be held, this event took place last week. The competition was of a very high standard, and we have posted the winners below...

**Simon Wrasse** – underwater wrassling team (the wet conditions provided for plenty of slippery thrills)

**Milov Swordfish** – jousting (on highly trained seahorses); defeated competitors are now on their way to Norway as rollmops

**Virginia Octopus** – discus throwing (using all arms at once – needless to say the judges kept well back for this one)

**Michael Hawkfish** – high diving; this covered all spectator crowds as it catered for both terrestrial and underwater viewers

**Sally Starfish** – calisthenics, in particular cartwheels

**Nina Crab** – long distance crawl; an extremely erratic course, allowing for the natural movement of the competitors. Sadly one crab was eliminated for drug use – detected by the competitor walking straight ahead.

**Sam Kelpie** – rounding up small schools of fish and herding them into enclosures formed by the underwater formation team, the Sea Pens

**Meredith marmoratus** – long jump

Entertainment was provided by the Big Bubble Big Band, with the exciting sounds of the Conger Eels, Stan Silver as Drummer, Jack 'Rubberlip' Perch, and Pete Forsteri on trumpet (affectionately known in the jazz world as 'that old bastard').

The only downside in the day was some ugly heckling by rival groups of Leatherjackets and Mullets. I have been informed that Olympic officials will now bring in a code of dress etc, to prevent such behaviour happening again – aggressive dress and worrying hairstyles will no longer be allowed in the future (Editor's note – what's wrong with the mullet?).

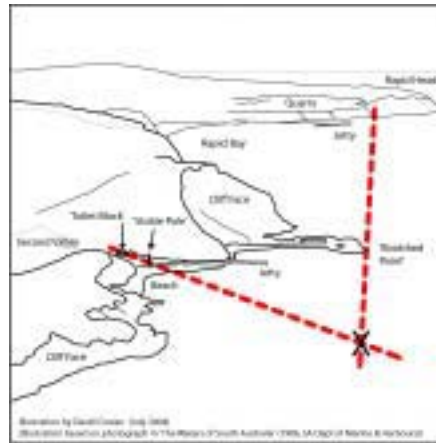
***Pamela Starfish***

***Sea Wisdom***

***Those who only explore shallow water will never know the true depths of life...***

## THE “ADOPT A REEF” PROGRAM

- SODS have completed their report to Council on their Reef Watch activities over the previous year. They have been awarded a new grant for a dive camera to assist them with their monitoring activities. Well done to the Coulters and everyone involved!
- Two new dive clubs have expressed strong interest in being involved, namely Underwater Sports, who will be commencing their Reef Watch training on the weekend of the 18<sup>th</sup>/19<sup>th</sup> September, and BSAC.
- Scuba Divers Club and the Marine Life Society of SA performed monitoring dives at Second Valley and Hallett Cove, respectively.
- The Reef Watch website now has an “Adopt a Reef” page where information is building up about the sites being monitored and the clubs involved – for example this map by David Cowan (see [www.reefwatch.asn.au](http://www.reefwatch.asn.au), Reef Health Monitoring -> Adopt a Reef section).



### **Sea Stories...**

*As part of our new look newsletter, we are interested to hear from people who have interesting tales to tell with regard to their diving experiences – they can either be of ‘local’ interest, or they can seek out the romantics among us who dream of slightly dangerous exotic locations. You can email them to us or post us a letter in romantic handwriting from an exotic port!*

*Pamela Newland*

Reef Watch currently receives most of its funding from the Mount Lofty Ranges & Greater Adelaide Integrated Natural Resource Management Group (MLRINRM)

A number of other organisations have provided some funding or in-kind support, including:

DEH



PADI Project Aware



PIRSA



SARDI



City of Onkaparinga



Dolphin Diving

Underwater Sports

Port Noarlunga Dive and Snorkel Centre

Southern Diving

Divers Delight

The Reef Watch website is [www.reefwatch.asn.au](http://www.reefwatch.asn.au)

If undeliverable return to:

Reef Watch

Conservation Council of SA Inc.

120 Wakefield St

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