

## MARINE COMMUNITY MONITORING PROGRAM

*Update Number 2 (February 11 2004)*



**Hello there,**

If this is all new to you and you have not received the first update (Update #1, January 2004) please let me know and I will forward it to you, as I have added a few new contacts to the mailing list since then.

- What's happening?:**
1. The official launch of the MCMP;
  2. MCMP Database and WebPages;
  3. Community Group Profile #1: Bunbury Cathedral Grammar School;
  4. Natural events: Annual Coral Mass Spawning – March/ April 2004  
- ***How you can help to monitor this annual event!*** and
  5. Closing date for Coastwest Applications – February 27 2004.
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### **1. THE OFFICIAL LAUNCH OF THE MCMP**

The official launch of the MCMP is scheduled for *February 17<sup>th</sup> 2004*. The launch will coincide with the release of the *"Indicative Management Plan for the Proposed Montebello/ Barrow Islands Marine Conservation Reserves"*.

The intent of the launch of the MCMP is to facilitate the Statewide promotion and delivery of the Marine Community Monitoring Program to the wider community, to inform people about the program and to acknowledge existing groups for their efforts over the years.

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### **2. MCMP DATABASE AND WEBPAGES**

We are still working on the MCMP database and WebPages and anticipate finalising both in March 2004. I will keep you updated on progress over the next few weeks.

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### **3. COMMUNITY GROUP PROFILE #1**

#### **BUNBURY CATHEDRAL GRAMMAR SCHOOL (BCGS)**

Every month we will profile a different community group, actively involved in monitoring our uniquely Western Australian marine environment. This month we will focus on BCGS who have taken ownership of the marine environment around Dalyellup Beach, 10km south of Bunbury.

Students at BCGS have been very active over the past few years monitoring different aspects of their marine environment, under the guidance of science teacher Mr. Chris Gibbs. All students are qualified and proficient using SCUBA equipment, donating their time as weekend volunteers to learn more about their marine environment, whilst collecting relevant information to assist with the management of the area.

Their mission statement sums up what the Dalyellup Beach Project is all about:

*"To collect valid data on the Dalyellup reef ecosystem so that we, the staff and students, become more knowledgeable about this marine environment, more appreciative of its beauty and complexity and are able to contribute to the wise management of this ecosystem"*

Chris emphasizes that: “The aims of the project are to collect base-line abiotic data on the health of the off-shore reef ecosystem before further development and use of this reef area occurs. The intention is that this information may be useful to coastal managers in monitoring the reef and making decisions about its future”. The group currently uses the Marine Community Monitoring Manual to monitor a range of things including water clarity; water temperature (using a temperature logger); seagrass regeneration, beach litter and fish.

### **A different approach to monitoring fish diversity at Dalyellup Beach**

The school has recently secured funding to purchase equipment to help them monitor fish diversity at three sites along Dalyellup Beach, using underwater video cameras and baited bags to attract fish to these areas. They have developed and built a special frame for the video camera to enable the unit to be left underwater to film fish visiting the site. The frame has an arm attached, approximately 1metre from the lens of the video, to which a bait bag is secured. The unit is deployed by SCUBA divers and after a period of time the video camera is retrieved by the divers and brought back to the boat. Finally the video footage is analyzed in the classroom, as students deliberate over fish ID books to correctly identify species present.

This form of monitoring is fantastic, not only do students get to observe fish in their natural environment but they are able to observe the shy and more cryptic species which generally disappear as SCUBA divers enter the water. The luxury of being able to validate fish ID’s and record these shy/ cryptic species means that the school will begin to develop quite a comprehensive species list for each of their sites, without having to spend hours underwater collecting the information!

#### **RESULTS OF THE BCGS VIDEO MONITORING TRIAL (JANUARY 2004):**

- a) *Hand held video swim*: the following species were recorded: Blue-lined Leather Jacket; Banded Sweep; Common Bullseye; female Western King Wrasse; Old Wife; Crested Morwong; Western Blue Devil and Western Puller.
- b) *Video camera (30-minute deployment)*: the following species were recorded visiting the video equipment: Yellow Striped Leather Jacket, Horseshoe Leatherjacket and the Woodward’s Reef Eel. Chris commented that “this is the first sighting of the Woodward’s reef eel at any of our sites”.

We will keep you updated on the outcomes of their video monitoring over the coming months!

**In the meantime please refer to the BCGS WebPages for more information on the marine monitoring programs that the school is involved with and their results to date  
– the WebPages make for very interesting reading and highlight the amount of effort put in by Chris Gibbs and the marine students from BCGS.**

<http://bcgs.wa.edu.au/kidscoastcare>

## GENERAL KNOWLEDGE:

### WOODWARDS REEF EEL

- Scientific name: *Gymnothorax woodwardi* (McCulloch, 1912);
- common on coastal reefs between Albany and Kalbarri;
- rarely seen during the day;
- feeds at night, preying on sleeping fish and therefore often caught by night-time anglers;
- can be aggressive and will bite if molested, they have nasty teeth (it is always a good idea to look and not touch anyway!);
- ENDEMIC to Western Australia, so therefore the species is found no-where else in the world!;
- Dr Barry Hutchins of the Western Australian Museum comments; "there are numerous specimens in the museum's collection, so they are reasonably common". The largest specimen collected is 76 cm long, although Barry has seen one closer to 100 cm at Kalbarri!

Please refer to the following WebPages for a photograph of this species, by conducting a search using the scientific name: [www.fishbase.org](http://www.fishbase.org)

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## 4. NATURAL EVENTS: ANNUAL CORAL MASS SPAWNING - 2004.

### ANNUAL CORAL MASS SPAWNING

Please refer to the attached flyer "**Annual coral mass spawning in Western Australia**", for information on coral spawning along the Western Australian coastline.

The major coral spawning event this year is expected to occur between

**MARCH 14<sup>th</sup> - 16<sup>th</sup> 2004**

**APRIL 12<sup>th</sup> - 14<sup>th</sup> 2004**

### HOW YOU CAN HELP TO MONITOR THIS EVENT

Observations on coral spawning in Western Australia have been carried out each year since 1984. Previous observations by the public along the Western Australian coastline have provided valuable insight into the geographical synchrony of coral spawning in W.A and the variability between years at the same location. It is important to continue these observations each year, as this information is important to the long-term management of our coral reefs.

The MCMP Manual has simple methods to assist you with recording this natural phenomenon:

The first method entitled "**Annual coral mass spawning**", asks the observer to record important information on specific spawning events (e.g. date, time, location, water depth and type of coral).

The second method entitled "**Coral spawn slicks**", asks the observer to record information on the location and extent of coral spawn slicks, following mass spawning events.

If you are interested in participating in monitoring these events please contact Karen Wheeler of the Marine Conservation Branch on 9336 0123, for the relevant methods and data sheets. Alternately, if you are visiting Ningaloo Marine Park, contact the Department of Conservation and Land Management (CALM) Office and they will provide you with this information, 20 Nimits St, Exmouth 6707; Tel: (08) 9949 1676.

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## 5. CLOSING DATE FOR COASTWEST APPLICATIONS - FEBRUARY 27

*"Coastwest is a State Government initiative aimed at providing opportunities for West Australians to learn about, conserve and protect our coast".*

*"The Marine Community Monitoring Program is a collaborative project between the Department of Conservation and Land Management and the Natural Heritage Trust's Coastcare Program. The project aims to build a constituency for marine conservation in Western Australia by actively engaging the community in marine monitoring initiatives".*

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**Not long to go now before the deadline for submitting your 2004 Coastwest Application.**

For more information about the program please contact:

Bill Cuthbert  
State Coastwest Co-ordinator  
Department for Planning and Infrastructure  
469 Wellington St  
Perth, 6000.

Phone: (08) 9264 7730

Fax: (08) 9264 7566

Email: [Coastwest@wapc.wa.gov.au](mailto:Coastwest@wapc.wa.gov.au).

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**Regards Karen**

**Karen Wheeler**  
**MCMP Project Officer**  
**Marine Conservation Branch (CALM)**

**Tel: (08) 9336 0123**

**e-mail: [karenw@calm.wa.gov.au](mailto:karenw@calm.wa.gov.au)**

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***GOOD LUCK WITH YOUR MARINE MONITORING ADVENTURES!!***

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**ATTACHMENT: MARINE COMMUNITY MONITORING PROGRAM  
Update #2 (February 11 2004)**

**ANNUAL CORAL MASS SPAWNING IN  
WESTERN AUSTRALIA**

One of the most spectacular natural events in the Ningaloo Marine Park is the annual mass spawning of corals. The coral mass spawning was first discovered in Western Australia in 1984 by Dr Chris Simpson, the current Manager of CALM's Marine Conservation Branch, in the Dampier Archipelago. Between 1984 to 1987, Dr Simpson and several other researchers documented this phenomenon on reefs along the Western Australian coastline from the Kimberleys to the Abrolhos Islands.

Over 250 species of coral have been identified to occur in the Ningaloo Marine Park and the majority of these species mass spawn. Most coral species are colonial animals made up of millions of anemone-like creatures called polyps. Most are hermaphrodites (i.e. having both male and female gonads) but some are either male or female. During the mass spawning events, coral eggs and sperm are released into the water and float to the surface. Fertilization then takes place and the process of larval development begins. The larvae continue developing for the next 4-6 days while at the whim of the ocean currents until they are ready to find a place to settle on the ocean floor. At this time the larvae actively swim down to the seabed and search for a suitable place to settle. Upon attachment to the seabed the larvae change their form to that of the adult animals known as polyps.

The major period of coral mass spawning on Western Australian reefs mainly occurs after the full moon in March or April. Minor spawning events also occur after the full moons in February and May and after the new moons from February to May. In some years spawning is 'split' between the March and April full moons. Spawning can occur on any of several nights from between 4 -14 nights after new or full moons. However, most often spawning occurs 6-10 nights after the moons (i.e. on neap tides).

For people wanting to observe the phenomenon this year in Ningaloo Marine Park, 7-9 nights after the full moon in March and April are the best dates as 2004 is likely to be a 'split' spawning year. On these nights spawning will begin around 8:15 pm and last until about 10 pm. Dates of major spawning may vary slightly at different reefs along the WA coastline.

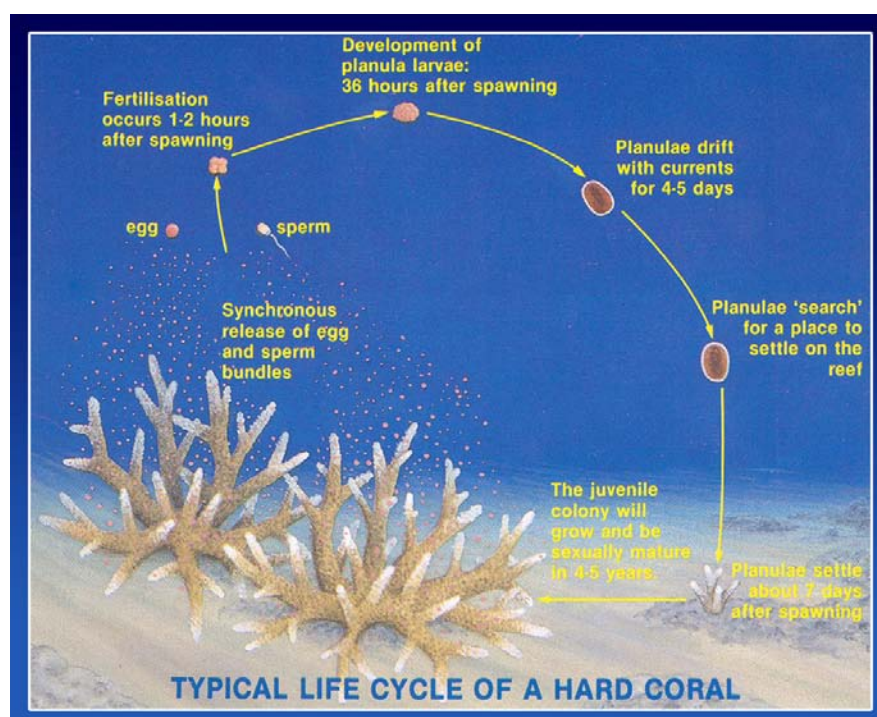
The major coral spawning event this year is expected to occur between

**MARCH 14<sup>TH</sup> – 16<sup>TH</sup> 2004**  
**APRIL 12<sup>TH</sup> – 14<sup>TH</sup> 2004**

Mass spawning is a mechanism to facilitate successful reproduction. By spawning at the same time and when water movement is minimal (i.e. neap tides), corals maximize the concentration of eggs and sperm thereby increasing the chances of fertilization. The simultaneous spawning of many different species at night ensure enough coral larvae, or planulae, survive by inundating predators

with an excess of food over a short period, thereby minimizing the impact of predation by fishes on the survivorship of larvae.

Coral mass spawning coincides approximately with the autumn intensification of the southward flowing Leeuwin Current which flows poleward along the continental shelf break (i.e. 200m bathymetric contour) off the Western Australian coastline. The Current transports the larvae of corals and other animals down the WA coastline providing a mechanism potentially connecting reefs in the tropical north, such as at the Montebello Islands, to reefs, such as Ningaloo Reef, which are further south. This mechanism is also responsible for the occurrence of coral reefs, such as the Abrolhos Islands, at latitudes where they do not typically occur.



## CORAL SLICKS

Coral spawning often occurs during periods of calm seas and light on-shore winds that are typical of the autumn period in WA. These conditions can result in coral spawn not being dispersed leading to the formation of coral spawn slicks which are often pushed onshore by winds and currents. This may cause the surrounding water to become oxygen depleted due to biological processes in the water column causing death of coral, fish and other biota. Reefs near Coral Bay have had major recorded major mortality events in 1989 and 2002 due to this process. Monitoring of the reef by CALM and the Australian Institute of Marine Science scientists is providing information on the capacity of Ningaloo Reef to recover from catastrophic events such as these.

Coral slicks are often confused with the naturally occurring blue-green algae (*Trichodesmium*) blooms and can form large slicks stretching for kilometres. They can occur throughout the year along the WA coastline usually in calm, hot weather. They are frequently reddish-pink or brown when they start decomposing. At this stage they are often confused with oil slicks. They are commonly referred to as *red-tides* or *sea sawdust*. True coral slicks will only be seen in narrow

windows of 7-11 days after the full moon. The two are easily distinguished by shape when observed very closely, *Trichodesmium* are splinter-like whereas planulae are globular.

## MANAGEMENT

Observations on coral spawning in Western Australia have been carried out each year since 1984. Previous observations by the public along the W.A coastline have provided a valuable insight into the geographical synchrony of coral spawning in W.A and the variability between years at the same location. It is important to continue these observations each year, as this information is important to the long-term management of W.A coral reefs.

If you are interested in monitoring these events please contact Karen Wheeler of the Marine Conservation Branch of the Department of Conservation and Land Management (CALM) on (08) 9336 0123, for the relevant methods and data sheets from the Manual. Alternately, if you are visiting Ningaloo Marine Park, contact the CALM Office and they will provide you with this information, 20 Nimits St, Exmouth 6707, Tel: (08) 9949 1676.

