

JAN 1992

# Marine Studies News



Newsletter of Wet Paper Publications 14 Milbong Terrace Ashmore 4214 (075) 39 4187

Promotional edition. Copyright free.

## "MARINE STUDIES" SETS RECORD SALES

Over 1000 pre-publication sales were recorded of a new book called "Marine Studies" setting an all time record for local Queensland publishers Wet Paper.

Paula Moffatt, partner in the family firm said that the sales have been a record for pre-published books of this kind in Queensland.

Principal author and publisher of the new book Mr. Bob Moffatt said that the idea for the book started out many years ago as a set of notes produced by the Science Teachers Association and later for the Brisbane South Marine Studies Project for local teachers.

"Since then many years of research and debate over content and design have been combined to produce the new book," he said. The publication took seven months from the first draft pages to distribution to schools.

The publishers accredited the speed of the printing procedure to printers, Merino Lithographics who brought the book to print in less than three weeks.

Over 96 percent of schools piloting the new Queensland syllabus bought



Printers Ian Woodcroft and Geoff Stone of Merino Lithographics unload the final sections of the 608 page book "Marine Studies"

class sets of the book with large interest also coming from Western Australia and other states.

The book deals with current issues and is designed as a University pre-entry textbook for Australian students to teach them about the sea over two years.

It contains over 5000 academically challenging student activities and exercises in 608 fully illustrated pages.

Approved by the Australian Yachting Federation, National Association of Underwater Instructors and many government departments the book is a combination of practical work, Oceanography, Marine Biology, Ecology and Conservation.

"Marine Studies," is the first complete textbook for secondary school students and represents a unique opportunity for schools to become involved.

### Sea World unfolds new education program

A new look Project Neptune is set to thrill and excite primary and Secondary School children all over Australia, Education Officer Alexandra Rossi told Marine Studies News today. The new Project Neptune Master Kit can be used by teachers and students as a valuable resource for information and illustrations on the marine environment.

The kit will include a 12 page booklet on Dolphins, a 23 page book with information and illustrations on Sea World animals as well as a colour poster on marine animals. "Included in the set will be our new tourism, maths, physics and primary projects" Alex said. For further information contact Sea World at:-

PO Box 190 Surfers Paradise Phone (075) 88 2222

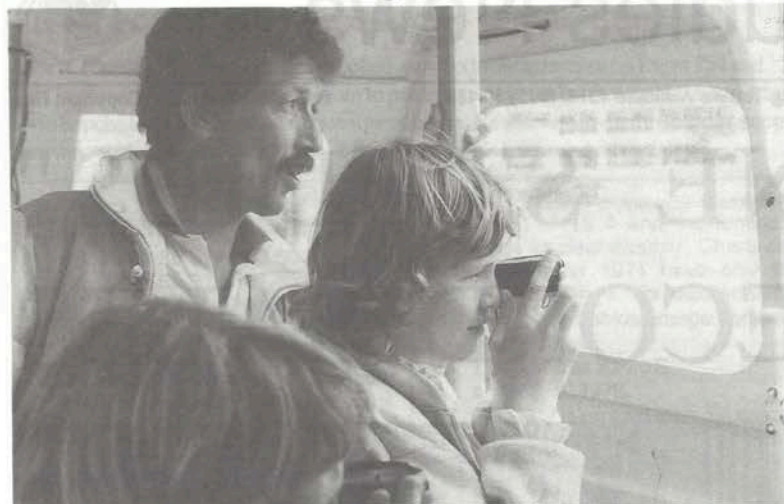
**SEA WORLD.**  
Gold Coast Australia



First Marine Studies books hot off the press ready to "hit the water"



## Schools take advantage of marine resources



Marine Studies teacher Jim Wilson completing practical navigation exercise with student Julie Grantham from the book - Classroom navigation. Boat supplied by Darling Point Special School

Schools from around Australia now use Wet Paper publications as part of their senior schooling initiatives to make the high school curriculum more meaningful. Five titles, two copyright free kits and one set of assessment items make up the set.

### Coastal Studies

\$15.95

This is a book about the Australian Coastline and how it should be managed. Written by Bob Moffatt it has three units with integrated videos and over 30 classroom ready exercises, excursion ideas and projects. Unit 1 discusses wave formation, surf, characteristics, measurements, sand, headlands and bays. Unit 2 deals with coastal landforms, coastal features, wave and beach interactions, sand system, beach profile, the sand budget, beach protection. In Unit 3, a case study is chosen to illustrate how human influences, settlement patterns, management problems, beach nourishment, buffer zones, management structures, canals, management issues and a local government act interact together. A Teachers Guide is available for \$22.

### Pollution

\$15.95

issues in marine conservation and management was written by Tim Ryan and is a resource to stimulate schools to study pollution as it affects the sea. Topics discussed are ecosystem cycles and functions, conservation, causes and effects of pollution, industry and residential pollution as well as many ways to test and control pollution.

### Classroom Navigation

\$11.95

is a book about navigation and shows how basic navigation principles can be applied to Science, Maths, Marine Studies, Geography or Physical Education Classes. 98 pages. Teachers Guide \$22

### Snorkelling

\$11.95

written by Bob Moffatt is a book about swimming underwater and how this environment affects the human body. 96 pages. Teachers Guide is available for \$22

### The Barrier Reef World

\$15.95

This book is designed for Geography, Marine Studies or Science Classes who wish to learn about the reef without actually going there. Written by Bob and Paula Moffatt the book is 120 pages long and contains integrated videos, classroom exercises and projects. Teachers guide available for \$22

### Beaches worksheets

contains 30 copyright free fully trailed student projects, information sheets and OHT masters on beaches. Excursion ideas and a primary contract is available Price \$ 14.95.

### Examination questions

written by Dave Claridge, Geoff Jensen, Glen McIntosh, John Maloney, Bob Moffatt, Ward Nicholas, Alan Perry, Tim Ryan and Geoff Waterhouse, these copyright free masters are available for \$49.95 and contain 1166 exam questions on Marine Studies.

## New glossary of terms announced

Recent amendments to the glossary of terms in Marine Studies given to the editor include:-

**Ahead** - the nautical terms for "ajohn"

**Astern** - without humour, i.e. the Captain told no jokes. "He was astern captain"

**Amidships** - this condition exists when you are completely surrounded by ships.

**Berth** - the day on which you were born.

**Bunk** - a phony seas story

**Buoy** - a buoy is the floating device you always smack into when trying to avoid the submerged obstacle the buoy is there to warn you about.

**Channel marker** - tells you which station your TV is tuned to

**Displacement** - accidental loss i.e. when you dock your boat and later cannot find it, you've displaced it.

**Dock** - nickname for medical man.

**Eddy** - Nelsons last name.

**Heave-ho** - What you do when you are sick.

**Keel** - what a wife does to a husband when he tells her he's just bought a boat.

**Launch** - the meal eaten on board a boat about noon time.

**Moor** - Amount of people needed for a party, like the moor the merrier..

**Oar** - when you have choice, like .. "This .....oar that"

**Tide** - a commercial detergent

**Wake** - What your friends attend when you've been careless with your boat.

## Powerboat Handling Instruction for Chapters 1-5 In Marine Studies

Contact Phil Gray, Sunshine Coast Sailing School. PO Box 5202, Maroochydore South 4558, Phone (074 535 364). AYF Accredited. Based at Mooloolaba Yacht Club. Sailing courses also available

## AUSTRALIAN SURFRIDER FOUNDATION

Contact Brad Farmer

PO Box 444 Mermaid Beach 4218

**Conservation, Activism, Research, Education**

Telephone (075) 350999

National Office Burleigh Heads



# Sea Week 92

Seaweeek is MESA's main national public awareness campaign conducted annually to promote the protection, wise use, understanding and enjoyment of our marine environment.

Seaweeek's theme for 1992 is "Marine Parks: Saving our Seas" and will be held from 3-10 May. Wise management of our marine environment is becoming increasingly important. We want to discuss the important part marine parks are playing, and could play, in conserving our seas for the variety of demands placed upon it.

Our MESA vice president, Jan Oliver, has been appointed as the national seaweeek co-ordinator to assist members developing and promoting activities. Jans address is 86 Waverley Rd., Taringa 4068.



## National Marine Conference Perth October 92

Since its foundation in 1985 the Society has held national conferences around Australia. Copies of conference proceedings can be obtained from the MESA Secretary. The next national conference will be held in Perth, late Oct/early Nov 1992. The conference is being closely coordinated with a conference of the Australian Association of Environmental Education, and will include exciting field trips. Members will receive conference details through MESA newsletters and will receive concessional registration discounts.

## Marine Park Authority Announces New Video

A new video and educational booklet will be available in Feb/March on the Crown of Thorns Phenomena. This updates current research and provides useful information to supplement Chapters 15 and 16 on Benthos and Marine Management Issues.

For further information write to:- Education Officer, Great Barrier Reef Marine Park Authority, PO Box 1379 Townsville 4810.



## UNDERWATER MAG FOR STUDENTS

Neville Coleman produces many relevant resources in the Marine Studies area as well as giving lectures and conducting weekend seminars. The Sea Australia Resource Centre houses the Australasian Marine Photographic Index which provides outstanding colour slides of Australian Marine Life.

Of particular use to Marine Educators is the magazine -

### UNDERWATER GEOGRAPHIC

Why not have your library subscribe to this now and receive:-

- ★ A free book, Beginners guide to Underwater Marine Biology plus
- ★ A autographed Dolphin poster for 2 years subscription

Rates are \$25/per year and is available from Sea Australia Resource Centre. 15 Lancelot St Rochdale South, 4123



NEWS  
PO Box 183  
Capalaba 4157

NAUI training manual suitable for Chapters 8 and 9 of Marine Studies. Cost is \$15+\$6 pack and post. Illustrates many useful techniques as well as containing additional revision questions.

## NAUI offers training for Chapters 8 and 9

NAUI has qualified instructors in all Coastal Centres around Australia. For details on your local training instructor contact Hans Telford, NAUI Australia, 07 390 3233, Fax 07 390 3159 or write PO Box 183 Capalaba 4157

## EDFISH gears up for big year



EDFISH is a Wetlands Education Project run by the Qld. Department of Primary Industries. A set of copyright free activity sheets are available from a ring binder.

Present activities include:- Mangroves, Barramundi, Seagrasses, Prawns, Dugong, Freshwater Habitat, Golden Perch, Redclaw, Glossary, Our mangroves booklet, Coastal Wetlands booklet.

The EDFISH materials are relevant to Chapters 13, 14, 15 and 16 on Plankton, Nekton, Benthos and Marine Ecosystems.

In-service is available for Qld Teachers or interstate teachers can learn more through sessions run at National MESA conferences.

Three new modules are being prepared for this year so if you have not yet seen the kit write to:

Dawn Couchman

EDFISH Co-ordinator, Department of Primary Industries, PO Box 46 Brisbane. Telephone (07) 239 3386

## MERINO Lithographics

18 Baldock St Moorooka 4105, is proud to be associated with the printing of Marine Studies. Merino specializes in the printing and publishing of books and magazines



## VIDEOS-VIDEOS-VIDEOS

Are you interested in Videos on Boat Maintenance, Navigation, Waves, Weather, Boat Handling, Great Barrier Reef, Sailing, Plate Tectonics for Chapters 1-17 of Marine Studies? We carry an extensive range of videos. Phone us now for our catalogue on 07 - 801 3474 or Fax us through on 07 - 801 3913.

If you mention this advertisement, we will deduct a discount of 10%. Offer expires March 15th, 1992



**marcom projects**

Pty. Ltd. (A.C.N. 054 620 236)

P.O. Box 3148, Loganholme, Q. 4129  
4 Tarun St, Shailer Park, 4128  
Ph: (07) 801 3474 Fax: (07) 801 3913



## Answers to Questions Pages 154-155 Chapter 6 Chartwork of New Textbook - Marine Studies

Bob Critchley, Bowen SHS, has supplied answers to the questions on Pages 154 and 155 of Chapter 6. As we did not have room to publish these in the book, they like many others will be published in this and subsequent newsletters. Readers are invited to tender to supply answers with consultancy rates paid from subscription fees and advertising.

### Exercise A Answers

- (a)  $20^{\circ}38.85'S149^{\circ}03.50'E$   
(b)  $20^{\circ}28.65'S149^{\circ}01.75'E$   
(c)  $20^{\circ}41.65'S149^{\circ}07.80'E$   
(d)  $20^{\circ}28.75'S148^{\circ}45.85'E$   
(e)  $20^{\circ}54.15'S149^{\circ}25.35'E$
- (a) Rock, bommie or obstruction, always covered by water, which is less than 2m at chart datum (zero tide), and a limiting danger line around it.  
(b) Dries 2ft on a zero tide. i.e. It will have 3ft of water over it on a 5ft tide.  
(c) Depth of 8 fathoms and 3 feet (52ft) on zero tide. i.e. It will have 60ft of water on a 9ft tide.  
(d) Wreck, part of which is visible at chart datum or zero tide. May be covered at high tide.  
(e) Overfall or tidal rip. May be hazardous to small craft when there is wind against the tide conditions. Usually quite safe in light wind, or wind with tide. Also more severe on spring tides than neap. Local knowledge required.  
(f) Eddies or whirlpools. May cause confused seas during fresh to strong wind, and so be hazardous to small craft.  
(g) 20 fathom line, at chart datum at chart datum or zero tide.  
(h) Peak height 198ft Allonby Is. This is above MHWS (Mean high water spring). Vertical sextant angle reading may require tidal adjustment.  
(i) Flood tide rate of 3/4 knot to SE. This is the flow at mid tide rising, on a Spring tide.  
(j) Bottom is fine sand.
- Group flashing 2, every 6 seconds. Height of 88ft above MHWS. Range of 15 miles. Since the chart is pre-1971, this is the lesser of geographical range based on eye

height of 15 ft and the luminous range for clear weather. Charts corrected after 1971 have only the luminous range. You calculate your own geographical range for your height of eye.

- 1:100,000 at  $20^{\circ}30'S$
- a. 1963 b. 1978
- $9^{\circ}$  East. Using east rose, 26 years x 2.75 per year =  $71.5' = 1^{\circ}11.5'$  which is added to the  $8^{\circ}$  in 1964 to give  $9^{\circ}11.5'$  which is  $9^{\circ}$  to the nearest  $0.5^{\circ}$
- a. 6.1 b. 8.0 c. 27.1 nautical miles
- a.  $307^{\circ}T$  b.  $76.5^{\circ}T$  c.  $224.5^{\circ}T$  d.  $91.5^{\circ}T$  e.  $353^{\circ}T$  f.  $261^{\circ}T$  g.  $309.5^{\circ}T$  h.  $115.5^{\circ}T$

### Exercise B Answers

- a.  $116^{\circ}(T)$  b.  $004^{\circ}(C)$  c.  $115^{\circ}(T)$  d.  $102^{\circ}(T)$  e.  $189^{\circ}(C)$  f.  $282^{\circ}(C)$  g.  $317^{\circ}(T)$  h.  $345^{\circ}(C)$  i.  $165^{\circ}(T)$
- a. Error =  $6^{\circ}(E)$ , Deviation =  $1^{\circ}(E)$ , b. Error =  $12^{\circ}(W)$ , Deviation =  $17^{\circ}(W)$ , c. Error =  $16^{\circ}(W)$ , Deviation =  $21^{\circ}(W)$ , d. Error =  $1^{\circ}(E)$ , Deviation =  $4^{\circ}(W)$ , e. Error =  $28^{\circ}(W)$ , Deviation =  $33^{\circ}(W)$ , f. Error =  $6^{\circ}(E)$ , Deviation =  $1^{\circ}(E)$ , g. Error =  $6^{\circ}(E)$ , Deviation =  $1^{\circ}(E)$ , h. Error =  $9^{\circ}(W)$ , Deviation =  $14^{\circ}(W)$ , i. Error =  $15^{\circ}(E)$ , Deviation =  $10^{\circ}(E)$
- SET A. Variation, deviation, calculate the error  
a.  $11.5^{\circ}E$  b.  $13.5^{\circ}E$  c.  $11.5^{\circ}E$  d.  $16.5^{\circ}E$  e.  $10^{\circ}E$  f.  $11^{\circ}E$  g.  $14^{\circ}E$  h.  $17^{\circ}E$  i.  $4^{\circ}E$  j.  $7^{\circ}E$  k.  $7.5^{\circ}E$  l.  $3^{\circ}E$  m. zero n.  $7^{\circ}E$  o.  $8^{\circ}E$  p.  $8^{\circ}E$   
SET B. Variation, error, calculate the deviation  
a.  $6.5^{\circ}E$  b.  $7^{\circ}W$  c.  $2.5^{\circ}E$  d.  $6.5^{\circ}E$  e. zero f.  $2^{\circ}W$  g.  $5.5^{\circ}E$  h.  $3.5^{\circ}W$   
4. Deviation, Error, find variation....  
a.  $9.5^{\circ}E$  b.  $8.5^{\circ}E$  c.  $10.5^{\circ}E$  d.  $8^{\circ}E$  e.  $10.5^{\circ}E$  f.  $11^{\circ}E$  g.  $10^{\circ}E$  h.  $8.5^{\circ}E$

Exercises C - K next newsletter

## 200 SUBSCRIBERS REQUIRED

With advertising and 200 subscribers, MARINE STUDIES NEWS will become a reality. If it is, you will be billed with your first newsletter and we will produce five more issues which aim:-

- To give you information about the book, Marine Studies that we could not fit in. (Our budget was for 608 pages and a book that would weigh less than 1kg for postage and overseas export. We did a limited print run so as to identify the problems and see what people wanted. We are totally self contained and self funding so have few constraints. In doing so we respond in a more sensitive way to the market.)
- To provide another venue for people who want to advertise marine education materials.
- To provide the opportunity for other teachers to publish their work and share their ideas.



Keeping a tight grip on business Wet Paper partners Bob and Paula Moffatt after 7 gruelling publishing months

Marine Studies was printed and published in Australia using Australian Paper and technology. Wet Paper was so named because curriculum materials were produced so fast, that the ink was barely dry before they were in use in the classroom.

## Marine Studies Teachers Guide/Newsletter Subscription application

Please supply me with 5 Issues of Marine Studies News for \$15 per year

[ ] Please do not send any money

Name \_\_\_\_\_

School \_\_\_\_\_

Address \_\_\_\_\_

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14 Milbong Terrace  
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(075 - 39 4187)







## Ch 8 Radio answers available

Dave Dawson, from the Department of Transport and Communications has worked through Chapter 8 and has produced all the answers to the Questions in the book as well as giving detailed explanations to many other issues.

Fifty four answers are available and in some cases detailed explanations are given. The answers are on disc and we are processing these at Wet Paper to be available later in the year for subscribers who have paid their \$15.

Dave has done all the work on an honorary basis and I would like to express my sincere thanks to him in this regard.

### Consultants start work

WetPaper now has six expressions of interest in the people wishing to do consultancy work. In each case contact has been made by phone and work started.

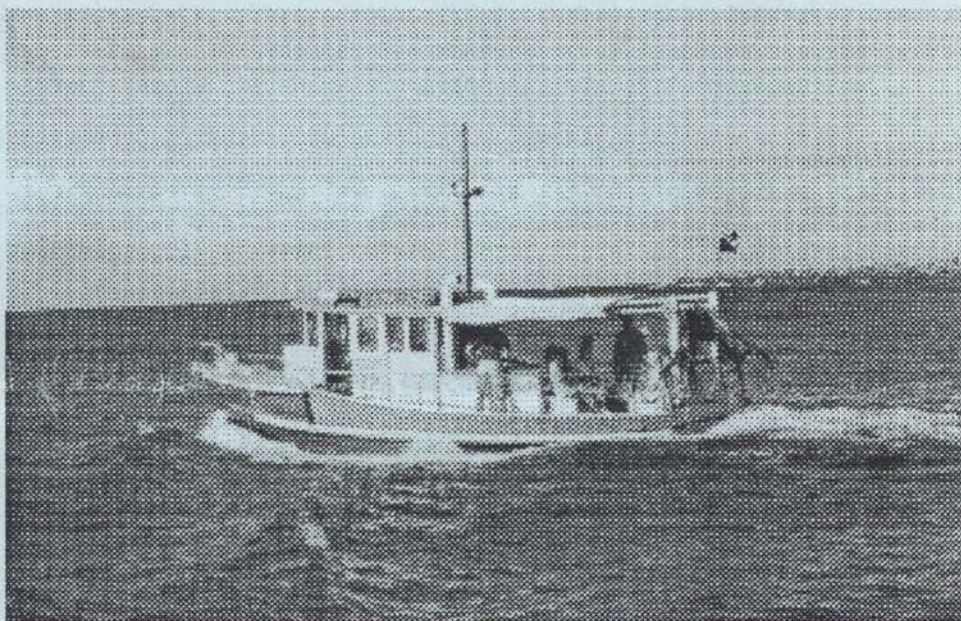
Ward Nicholas is working on preparing sample questions that distinguish between knowledge and its application and information processing and reasoning.

Geoff Jensen is working on Mariculture and further developments from the north.

A group of us on the Gold Coast are going to tackle expanding Pages 524 onwards on Mangroves. John Burnett from Emmanuel College gave some great classroom activities at a recent meeting. Many of us learnt how to blow up a pneumatophore and section a mangrove leaf using a petri dish.



Ann Stone explains the finer points of the silver nitrate salt test



The ER Duke, Department of Education, Jacobs Well EEC, Seaweed 1992

### Oceanographers for the day - A Seaweed saga

Benowa State High School students and their teachers Len Couzens and Mark Rickard joined with Sea World Staff Jan Thornton, Alex Rossi and Mark Hoult along with Bob Moffatt to play Oceanographer for the day. The Jacobs Well Field Study Centre staff of Jim Rebgetz, Glen Leiper and Ann Stone also brought their boat the Duke and we split classes into two groups. Basically we did the same activities on each boat but were limited on some occasions by gear and time.

A series of Water Testing Kits supplied from Wet Paper allowed students to study water from the sewage pipes that lead out into the ocean near Sea World. For those of us who thought sewage was a really messy business, all were in for a real surprise. Even Mark from Sea World was skeptical about collecting this supposed polluted water from the cesspit near the Ocean.

Back at school students made simple water testing devices from instructions in their new book on Marine Studies. A water sampler was made from an old wine bottle, a secchi disc from an ice cream lid and a house brick. Field thermometers were mounted in plastic sprinkler pipe and depth sounders were made from old nuts and bolts from the metal work rooms. Sophisticated

plankton nets were carefully constructed from nylon stockings and coat hangers. In the process many hundreds of metres of venetian blind cords and electrical tape was used.

### Field day

Came the day to go to Sea World and with spectacular Gold Coast weather, we sailed from port aboard Sea World 1, for the sewage outlets. Pipe - ho and we anchored to

### How to get the Radio Answers and Sewage Information

Simply by subscribing \$15 to the Newsletter Supplement. Form attached on back.

This started, like all Wet Paper Ventures with a stab in the dark, a big deep breath, and a bit of unsolicited marketing .. sorry about that.

I have enough \$15's now to give me the confidence to go further and with others now joining the team, the creativity is flowing in.



take our first measurements. Carefully unpacking our secchi discs, we were surprised to see them go right to the bottom and touch a clear sandy bottom some 7 metres below. So much for our ideas of poo enriched murky waters. Samples of water were taken with our wine bottle collectors and bought on board to a water testing lab set up on tressels amidships.

### Tests conducted

The first test was dissolved oxygen. If there were large amounts of organic material discharged from the pipes we would expect low DO readings. The hatch kits we used were from Wet Paper and Selbys Scientific. A sample of water was carefully siphoned off into the DO bottle and two powder pillows added. By carefully inserting the stopper so as to not trap any oxygen the bottle was shaken and the yellow floc allowed to settle. A third pillow was added to dissolve the floc and a measured amount of the yellow solution collected. This was then tested with sodium thiosulphate - each drop representing 1 mg of dissolved oxygen per litre. Eight drops later the solution turned clear which indicated a very high DO level.

### Nitrate and phosphate tests

The next test was for nitrate and the low range test kit was used. One of the powder pillows from the kit was added to a measured sample of seawater. The solution was stoppered and shaken for three minutes. A further 30 seconds were allowed for the cadmium to settle at the bottom of the tube. This was decanted off into a second tube and the cadmium rinsed out into the slop bottle which was later called the "save the turtles bottle" because everything went in - plastic pillows from the experiments especially. We then took this tube and filled it with another sample and compared this inside

the colourimeter. What you do is to match the colours on a disc. We found that the reading was below 1 and you are supposed to multiply this by 4.4 and so we presume the nitrate level is less than 4.4 mg/L. (Later when we visited the Coombabah Lab and checked results with the Environment Department we found that readings in the sea were less than 1 mg/Litre. Samples were taken so that the Phosphate tests could be done back on shore.

Nitrates came out at less than 1 mg/l in the seawater. We tested phosphates from a sample of effluent and found that it contained 4 mg/litre. The sample was supplied by the Gold Coast City Council.

### Plankton trawl

Then it was out with the plankton nets and we trawled right through the sewage outlet. Hauling in the nets the group was surprised not to find blobs of poo, but swarms of zoo and phyto plankters. These were quickly taken to the steromies on board but we soon



Home made echo sounder

discovered that if each of us took a test tube and looked carefully through a hand lens, the results were terrific. We could see baby prawns and scrimp and copepods flicking everywhere.

Much of the plankton died pretty quickly in the hot sun but in the surface layers of the test tube, the diversity was fantastic. For many of us this was the highlight of the trip.

### Visits to plants proposed

We propose to visit each of the plants soon to see if we can find out why and learn more about ocean out-falls of sewage. One thing we all learnt is that it changed our attitude to the quality of water that was being discharged from the sewage pipes and while not all agreeing that this was the best solution to the disposal, felt that we were a lot further advanced from what our southern MESA members have experienced in recent times.

### Further Information

Day courses in Oceanography and Marine Biology run by Wet Paper Staff and Sea World are planned for Term 4. For information about materials and course outlines - contact either:

Bob Moffatt, Wet Paper, 14 Milbong Tce, Ashmore 4214, Telephone or Fax (075) 39 4187 or

Alex Rossi or Jan Thornton, Sea World, PO Box 190, Surfers Paradise, 4215. Telephone (075) 88 2222 or Fax (075) 911 056

Jacobs Well EEC, courses contact Jim Redgetz or Glen Leiper, MS 1372, Beenleigh 4207 - Telephone or Fax (07) 462317

Benowa State High School - Marine Studies Course and Textbook - Contact Mark Rickard or Len Couzens PO Box 5733 Gold Coast Mail Centre Bundall 4217 Telephone (075) 39 4222 Fax (075) 97 1215.

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Please supply 5 issues of Marine Studies News and Teachers Guide Supplements for \$15 per year [ ]

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## Marine Studies in Western Australia



Chapters 19 and 20 of Marine Studies being played out by conference delegates to the Camping and Outdoor Educators State Conference at Nanga Bush Camp WA Aug 92

August was a big month for us here with visits to schools in Western Australia and South Australia with a keynote address to the Camping and Outdoor Educators Association of Western Australia.

Thanks to Keith Cook for inviting me to the weekend conference which allowed Wet Paper three sessions to show off our new book, Marine Studies. I discussed how it could be used in schools and how it fitted the Qld Marine Studies Syllabus. I learnt the real value of workshop sessions at a conference and found teachers enjoying the hands on approach, much more than the "sit and listen" we so often give at conferences. Explaining the Qld Syllabus was fine but I noticed interest waned after about 20 minutes and we went on to workshops after this. I felt it a bit irrelevant singing the praises of Qld.

Some of the workshop activities which I felt went really well were:

- Ocean and tide models from cardboard, template, pins and glue from Chapters 11 and 12 on Oceanography and Coastlines
- Whale Bay simulation game, but with set groups. We all laughed as the WA Inc characters appeared from "The Authority" and how "the CODS" - Concerned

Organisation of Divers, attacked the credibility attempting to prove corruption in the Government agency.

- Navigation - from Chapter 6, using Cape Hillsborough Channel and very simple home made set squares. - I guess a few want to navigate to Qld since the camp was really cold and wet.
- Water pollution tests and measurement from Chapter 13. Running an environmental lab from your suitcase was interesting especially getting all those little white powder pillows through as personal luggage.

### Outdoor Ed has big focus

Of great interest to educators of Phys Ed or Outdoor Ed from the eastern states would be WA's emphasis on this in the curriculum. Many camp schools have been set up specifically to cater for this.

The ocean trek is a feature with boats built to allow students to sail/motor down the coastline as part of their school curriculum with a Camp school providing the equipment. One such camp is run by Rob Lucas at Point Peron 5133, Rockingham Beach, 6168.

Rob really has a great setup from over 30 years of outdoor ed at the centre.

### Expedition Boat Shed

At the Cnr of Riverside Drive and East Streets in East Fremantle is the Expedition Boat Shed run by Co-ordinator Paul Willison. Perhaps one of the best and friendly setups I've seen. Watched a class come in with their teacher, conduct 1 hour of boating, pack up and leave - no hassles, all in the normal course of events. Wish I had more time to talk to Paul but he has some great ideas. See address below.

### Nautical Studies Syllabus

A brief but detailed syllabus has been written called Nautical Studies. Although we did not meet I believe Ron Jensen, from Christchurch Grammar School is co-ordinating and I will endeavour to find out more so that we can start networking.

It would be great to network the people doing similar units and I hope, in time to devote some effort in this regard.

### Addresses

I'll share these with you if you could some time share yours with me. If any of you would like to travel, I've found some el chepo accommodation and car hire as well as some contacts. This is not complete

- Keith Cook, Murdoch University Murdoch, 6150, Telephone: (09) 360 2007, Fax: (09) 310 4802 (Ex. Outdoor Ed President)
- Paul Willison Expedition Boat Shed Cnr Riverside Rd & Pier St East Fremantle 6158 Telephone: (09) 339 7851 Fax 09 335 0850

**Chapter Tests  
Included in  
this Supplement**

**Written by  
Tim Ryan  
Gympie State High School  
Gympie**

**Chapters 11-14**





- Geoff Bayley Port Lincon SHS Telephone (086) 823677 Fax (086) 82 6692
- Chris Elliott - Starting with our book Marine Studies next year. Tumby Bay SHS Telephone (086) 882003 (School) Fax School 086 882 608
- Steve Bennets, Bunbury SHS Phone 097 215244, Fax 097 912372
- Max Williams. Coondanup SHS Wanjeep Rd Coondanup Mandurah. Phone 09 581 3555 Fax 09 5811213
- Alan Wolfe, South Fremantle SHS, Lefroy St, South Fremantle PH 3373833. This school has an approved Marine Science course as part of Senior Science and PE. Also has Year 10 Marine Science.
- Simon Lyon Underwater World Phone (09) 4477500 Fax 09 447756
- St Marys College - Mark Stanniforth (09 - 3411022 (schl). Has excellent Junior Science Program, Diving and Surfing Courses for Girls, driving force north of Perth. Very interested in Maritime Archeology.
- Joe Zeenay, St Marks Ang Community School, St Marks Drive, Hillarys, Phone (09) 307 1650, Fax (09) 3077577 Elliott Rd Karrinyup... also Junior Marine Science.



Geoff Bailey and partner explore Chapter 6 navigation at the Tumby Bay Seminar organised by Chris Elliott

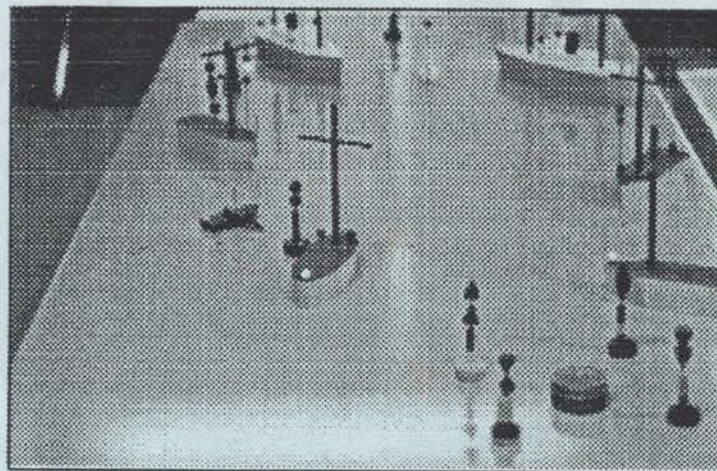
- Rob and JoAnn Lucas, Point Peron Camp school, thanks for great hospitality. Saw a fully operational recycling program with worms as well as the sea track boats, snorkelling gear, wave skiing and other programs. Rob is at PO Box 5133 Rockingham Beach 6168.
- Max Williams at Coondanup HS, hobbled to an afternoon out of the suitcase seminar. Max looks like starting Marine Studies next year ..Wanjeep Rd, Coondanup, Mandurah 6120.
- Paul Tye..Outdoor Ed at Edith Cowen University, 2 Bradford St Mt Lawley 6050

## South Australia begins with Maritime Studies

Although not as great a selling extravaganza as WA, the trip to South Australia identified there new syllabus which I hope by now is approved. I have the contacts if you would like to ring.

Met up with old MESA mate Geoff Bailey, who took me tuna fishing and provided some great hospitality and a great restaurant called "bugs" at Port Lincon. Chris Elliott from Tumby Bay organised a day long seminar for teachers from the region and is starting Marine Studies next year from the technical studies section of the school.

Drove to Murray Bridge and was at home amongst the tinnies and rowing boats. Met instructor Gary Hodge - contact is Barry Wilden, PO Box 321 Murray Bridge 5253 (085) 32 5855 Phone. Also found Ian Milne, driving force in Marine Biology working at Victor Harbour Whale Watch Centre PO Box 885 Victor Harbour SA Telephone (085) 52 2266, Fax 085 524411, who has some great Whale Watching information and Video. Greg Wirth showed me initiatives at Victor Harbour.



Good idea from Port Adelaide TAFE, a table for pilotage with model boats. This TAFE presented Part A of the Qld Syllabus very well (Although they were all out on the day I visited)

## October details

We are heavily committed to the water conservation program in SE Qld with TV adds coming up mid October. We also are working on the book, **Be WaterWise**, for our clients, the Water Resources Commission. The book is targeted for the Upper Secondary Geography and Multistrand Science Syllabus and is due for release November. Advance bookings are always cheaper - remember that \$40 deal on Marine Studies (RRP \$50). Oceanographer for the Day continues to be trialled at Sea World with local and Brisbane schools.

## Free Coastal Studies Books

Well if you missed or session at CONSTAQ92 at Twin Waters, you missed our free books on Coastal Studies. However if you are planning a unit on Coastal Studies, we are having a Coastal Studies Sale for Xmas at \$10 per book in a class set of 25 or more. You have to circle this part of the newsletter and return it to me with your order to receive this offer. Normal price is \$16.

## Computer fish

Lots of information on disk. IBM Network buffs, I'm pretty sure that South Australian Department of Fisheries has exported masses of information about fish to a NEXUS network. If someone contacts Ralph Tregenza for me at Angle Park Computer Centre (08) 243 5559 and let me know how others can excess this info, I will publish next newsletter - how much it costs also would be useful.

## Marine Studies Teachers Guide/Newsletter Supplement Subscription falls Due January 1993

### Renewal application closes November 30

Please supply 5 issues of Marine Studies News and Teachers Guide Supplements for \$15 per year [ ]

Name \_\_\_\_\_

School \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_ Code \_\_\_\_\_



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## Days of excellence

Term 4 always proves quiet for us here and so we have begun a Days of Excellence idea based on an idea by Jan Thornton from Sea World. The almost completed Wet Paper lab, has a store of portable Marine Studies lessons that can now go to conferences, workshops and schools to complement and in-service teachers with the book *Marine Studies*.

The wave tank above is used to demonstrate the ideas presented in Chapter 12 on Coastlines. Most teachers have great difficulty in understanding how the sand actually moves underwater and by carefully constructing a beach profile and setting the wave paddle at a fixed rate, sand can be made to move from the artificially created sand bar, back onto the beach.

The tank is especially good for illustrating the way the wave's orbit fields interact with the seafloor. Sand movement can also be clearly seen as illustrated in Figure 45 on Page 333 of Chapter 12 - Coastlines.

The demonstration is accompanied with a hands on wave tank simulation of longshore drift as shown on Pages 21 and 26 of our Coastal Studies book.

Students are able to see how oblique wave patterns affect the coastline and the effect of groynes. South Australia, NSW and Queensland all suffer from beach erosion and these experiments are designed to highlight these issues.

### Marinating Senior Science

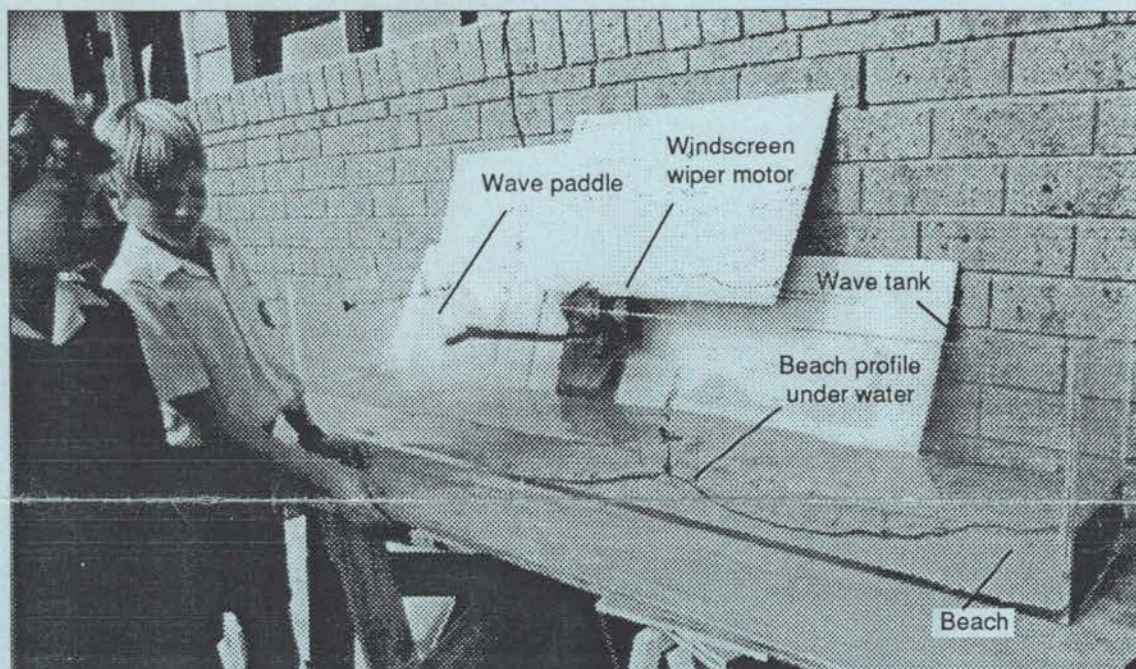
A draft paper is available free from Wet Paper, on how schools can "Marinate" their Senior Science Subject. Primarily written for the Qld Multistrand Science Syllabus, the paper discusses those aspects of Marine Science which are different from Marine Studies as well as raising the grey area debate.

### Class sets sales our lifeblood

The lifeblood of Wet Paper is the class set sales of its books. We are in here for the duration and want to build a small business which has after sales service second to none.

*Marine Studies* class set sales financed the purchase of equipment, travel and accommodation to the Outdoor Educators Perth Conference and the Twin Waters STAQ conference where no fee was charged for workshops.

Sales also finance our continued support to MESA,



Year 7 students from Somerset College with the Wet Paper Wave Machine at a recent day of excellence in Science. This project was financed from Class Set Sales

the STAQ Science Contest and Travel Grants to Teachers of Marine Studies Excellence.

### Evaluating the Marine Studies Syllabus

Discussions with teachers have begun on the syllabus from Qld and plans are well underway to revise our book, *Marine Studies*. There is a separate evaluation as well being done by the Board of Senior Secondary School Studies, however ours will critically examine each of the objectives written as well as the ability of the teachers and the students both pre-service and teaching to handle the syllabus. Some of our early concerns are that:-

- there is a tremendous amount of capital works in schools devoted to Boating Afloat. An analysis of photographs and the schools resource lists that I presented last year to the conference has now grown.
- the costs of getting students onto the water and the option of hiring boats may be a better option. In SA and WA, camp schools and aquatic centres have been established. Maybe we should look at these. The expedition boat shed in WA is an excellent setup that Wet Paper has identified and recommends a visit. It is run by the Department of Marine and Harbours. Maybe our Department of Marine and Harbours should look at this as well. Boating afloat needs to be placed in perspective. What happens when:
  - equipment breaks down?
  - your enthusiasm wains?
  - other members of staff are not qualified?
  - the school budget cannot maintain equipment? For example to sand blast a trailer costs \$60-\$80 per hour and to replace a boating trailer costs \$800 - \$2000

- there appears to be too much content in the syllabus. One school interviewed spent a whole term on Chapter 13 which has prompted me to investigate the possibility of suggesting changing focus in this regard. Water testing is great, but it takes time and energy to set up. Maybe our objectives should look at the analysis of second hand data and leave the analysis in the core to Science? To do the complete unit as proposed by Mitchell and Stapp would take 2 terms and then what of Oceans and Coastlines?
- How detailed a study of Ecosystems is required? At the recent STAQ conference, the question of transects and collection of abiotic data in the way presented in the syllabus was questioned. Is this Biology? What sort of objectives need to be written in this regard and what level needs to be reached by students of Marine Studies?



**More Chapter Tests Included in this Supplement**

**Written by**  
**Tim Ryan**  
**Gympie State High School**  
**Gympie**

**Chapters 15 - 18**



## Marine Science Book

Wet Paper is planning for a Marine Science book in 1995 and to pull apart the Marine Studies book at the same time.

Our early market research from most states indicates to us that there is a need for a common curriculum with the opportunity for a local focus on some broad issues such as Coastlines and their management, cold and Tropical Water Science, marine plant and animal physiology as well as others with I will share with you as we work through this.

We are after paid consultants to help us in this regard and should be able to offer travel grants and research fees to assist. The project is long term and in the meantime we are planning to go back to where we stated almost 15 years ago, with the STAQ booklets selling for say \$5. I have talked with many MESA members interstate and have found about 6 who are willing to work on these units.

To assist schools and do the right thing by your budgets, Marine Studies will not be changed until this time giving you three maybe four years out of your books.

## Marine Studies Revision Underway

We have about 800 Marine Studies left and are reprinting with revisions over the holidays. All the errors you helped us identify are being fixed and there are no changes to questions, pages or activities. Only getting out the minor errors and typos.

## Supplements finish for 1992

This issue is the last of the supplements for this year. I'll be sending out renewal forms with the last two Newsletters for the year in November.

Please supply 5 issues of Marine Studies News and Teachers Guide Supplements for \$15 per year [ ]

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## Top Video - Commercial Fishing

Stayed at Port Lincoln caravan park and watched a video called the Port Lincoln Fishing Industry. Details Tuna fishing and reporting as well as other terrific stuff: Costs about \$20,

Available from, Port Lincoln Apex Club, PO Box 626, Port Lincoln 5606. A really good job by the local Apex Club.

Speaking of videos and if you are interested in Water Quality. Fresh Water, From Sydney Water Board, 115 Barhurst St, Sydney 2000, Phone (02) 269 5468



Port Lincon, Where I saw Dean Lutins Mother in Laws house, a real fishing fleet, and learnt the traditional Chinese saying of "Foorkoff" use in the mariculture industry

## Coxswains Error in Newsletter

Last newsletter caused some concern over this issue and there were many errors.

The Marine Board and Education Department have contacted us and are extremely supportive of our efforts to get information across.

A full explanation of what will be required will be in the next Newsletter however to book an examination for the Reduced Trading Certificate you can contact:

Sue McElvoy

(07) 224 8789

You can also get a copy of the syllabus from:

Examiner Marine Board  
GPO Box 2595  
Brisbane 4001

Information about Survey can be obtained from

Capt John Watkinson

Marine Board  
GPO Box 2595  
Brisbane 4001

It appears boats are required to be surveyed but that exemptions can be gained.

## Workshops for Pre-service Teachers

October sees the first Pre-service Workshops in Marine Studies begin for QUT students. The workshops will focus on Teaching Methods and cover

- Chapter 4 Navigation
- Chapter 6 Chartwork
- Chapter 7 Tides and Weather
- Chapter 8 Marine Communications
- Chapter 9 Skindiving
- Chapter 11 Oceans

Chapter 12 Coastlines

Chapter 13 Seawater quality and pollution

Chapter 20 Whale Bay

Organised by Dave Tulip and Jack Marsh QUT, these workshop sessions are the start of a pre-service course for teachers of marine studies.

The aim of the workshops are to:

Provide practical hands on activities teachers can use to illustrate marine studies concepts.

Provide some training in content and answer questions about topics covered in the course

Clarify the syllabus topics

Provide information and the opportunity for teachers to see the standards required for the topics

- Boating afloat
- Boating ashore
- Skindiving
- Marine Communications
- First Aid and safety

## Boating Afloat Training

Optional Work for December will include Boating Ashore and Afloat, however we are awaiting a syllabus or some guidelines from Harbours and Marine before undertaking this. Basically we want to cover Chapters 1, 2, 3 and 5.

## Board Conference Dates

It looks like the Board will have the Term 4 Conference for teachers of trial schools in Qld from 28-30 October







## Busy month in the classroom

### Lab Commissioned

Funded entirely from the sales of Marine Studies Texts, a fully equipped curriculum research lab was commissioned this month. The aim of the lab is to develop new experiments for marine studies classes as well as work through fully existing exercises.

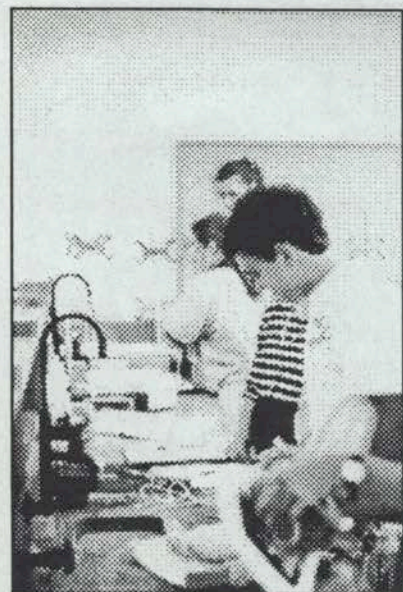
The lab is equipped with eight plankton nets making available small group work in Marine Biology classes. A complete set of water quality test equipment complete with incubator and autoclave has been purchased providing a facility to train teachers in Faecal coliform tests as well as other routine water sampling tests.

Sufficient equipment exists with the lab to run a class of 32 in the field with four to a group.

### Curriculum development

A vital function of the lab will be to develop low cost equipment for use in schools and provide the opportunity for teachers to come to try out and learn new teaching methods.

It has been long recognised by members of the Wet Paper team, that small group work provides the greatest opportunity for learning.



QUT students learning skills from the Marine Studies Syllabus

With this in mind, the Wet Paper Lab will design experiments and seek to replicate low cost equipment that can make up class sets. The water sampler bottle is one such example.

### Lab self funded

To date, over \$5000 has been invested in the laboratory. No Government funds were applied for as Wet Paper continues to be self funding.

Wet Paper continues to draw inner strength from the clients who continue to purchase our materials and attend our seminars and training programs.

### Courses run to date

South East Qld and Northern NSW schools and Universities have participated in some of our trial programs.

Each day the old brown cortina gets loaded to the hilt and sets off to either Sea World (for the Oceanographer for the Day courses) or the home school for Water Conservation or Marine Studies practical training programs. Here are some of the courses we run.

A day of excellence for South Coast Schools. Here the best students from years 10 - 12 came to Sea World to learn practical Oceanographic methods. At the end of the day the students could use simple test equipment and plot a variety of parameters about the environment.

Systems biology - Griffith University. 22 Students from Gold Coast Campus completed a program at Sea World in which sewerage effluent was analysed from Coombabah Waste Treatment plant. The environmental impacts of reclaimed water were discussed and a lecture on waste water was given.

QUT - Pre-service Marine Studies Teachers. 28 pre-service teachers from Kelvin Grove Campus com-



Griffith University Students test local water for Pollution



The first Oceanographer for the Day class began in the chicken bar at Sea World August 1992

pleted a two day training course in marine Studies Method. Participants were taught how to build model oceans, ways to teach tides, how to analyse seawater, use a marine radio, use a chart of Cape Hillsborough Channel and what standards were expected from students in Navigation and Chartwork. A simulation conservation game was played as well as lectures and demonstrations on Beaches and coastal geomorphology.

Coombabah SHS was the first school to do Oceanographer for the day. 30 students spent a full day at Sea World completing a totally hands on program.

Beenleigh SHS - A lecture and classroom demonstration on Waves and Water Conservation. 68 year 10 Geography students received a slide show on how beaches work as well as watched a practical demonstration with the mobile wave tank. Students from Nudgee College, Marist Bros also benefited from this program. These talks are sponsored from the Gold Coast City Council Beaches Education Program. As similar program on water conservation is jointly sponsored by the Albert and Gold Coast City Councils.

For information about these free sessions, contact us now to make bookings for next year.



## Welcome to Mark

Welcome to son Mark who now joins the Wet Paper staff full time. Mark left school last year and has worked part time for us for the past four months. Apart from the many office jobs associated with Wet Paper, Mark will be training in publishing.



Mark Moffatt joins Wet Paper Aug 1 1992

His first book will be one that has been in the office now for too long and that is John Kennedys (Smithfield SHS - Cairns) Marine Electrics Notes.

At first, we will just lay it out, but am considering putting it together with Jim Sheffields Marine Engines Notes to make one Marine Outboard Motor book - Any suggestions - keep it as a separate set of notes or join the two together? Give Mark a call (075) 394187

## Norn Love keeps in touch

Hi Bob,

Keeping in contact, I thought you may be interested to hear about the service Held at Coorparoo SHS on the pupil free day in August. Many schools from Metro-East were represented.

Special Guests were:

1. Ian Alexander (Gateway Tafe) Ian explained some of the problems that existed in marine studies regarding the coxswain certificate and how to improve the situation.
2. Noel Marsden (Reg. Safety Officer) Discussed "Duty of Care" under the Workplace and Safety Act i.e. If you can see a potential danger/problem action should be taken to prevent injury etc.. e.g. Use of 27 meg Radio in an emergency or the use of a mobile phone allowing for the limitations of both. Regs for license make allowance the schools to be members of Recognised Yacht

clubs and they can pay \$22 per set licence fee for their radios.

3. Brad Zeller (DP Fisheries) Brad demonstrated (a) Row to set a grill net for the purpose of sampling fish in a specific area (i.e. Norman Creek) (b) Row to tag fish and also to mark the tail if we were looking at the growth of fish over a specific period. Coorparoo now shares a permit with Rochedale and Balmoral to set a net in Norman Creek. We are currently in the process of procuring a net.

Following the meeting we set up another meeting with Don Tenant (Department of Transport) re The restricted Coxswain certificate. Best Regards, Norm Love

P.S Some of the teachers were given the MESA forms and they didn't know that MESA existed. Coorparoo SHS, Stanley St and Cavendish Rd, Coorparoo, 4151

## Taperoo HS Historical and Commercial Shipping Unit

Had a call from Peter Burger at Taperoo HS South Australia this week to let me know the great things he is doing with a unit on commercial shipping. From what he told me it seems that here is a guy who has developed something special and we look forward to networking with other teachers in this field. Thanks for letting me know what you are doing Peter.

## Mariculture - Lets do it

It seems that many of you are doing this unit. Wouldn't it be great if we could all get together for a mariculture educators workshop. Well the only way this will happen is if you tell me where you are and what you are doing. Wet Paper can then start the wheels rolling and organise a conference on this area. Give me a call or drop me a line.

## Coxswains requirements - QLD

Following much discussion at recent seminars and correspondence with Dept. of Transport, a person in charge of a vessel or vessels who is in the receipt of wages is conducting requires a coxswains certificate. There is the provision for a teacher to obtain a limited trading version of this, the details of which are attached to this newsletter. Many of you now will have this certificate and for those who don't I encourage you to do so.

I floated an idea at the recent board conference on the Friday that if you are transferred and wish to run the boating unit first up next year, the school may have to engage the services of a parent or local with a coxswain

until you get your 90 days up. As a few of you are in this situation it seems a reasonable idea and should not cost the school too much.

## Michael Michie Darwin Writes

- \* Reef visits are available from Channel Is FSC in Term 4.
- \* Pamphlets available on Dolphins of NT and Seagrasses
- \* Australian Trust for Conservation Volunteers constructed a Boardwalk in Darwin (Steve Tiley - 81 3206)
- \* Channel Is Power Station - Environmental Effects - Draft Curriculum Unit, Plus Greenhouse Booklet
- \* Harry Breidahl has some new books out, through MacMillian Ed Aus, Alligators and Crocs, Fish and Shell Fish, Sharks and Dolphins, Turtles, Tortoises. Good on you Harry Hope to see you next year at MESA.
- \* A new Mangrove Pamphlet

Michael is on Darwin Phone 32 2299 need address.

## What else happened in Oct?

- \* Board of SSSS conference - see next issue
- \* Nudgee Beach Seminar - GBRMPA
- \* MESA planning for conference continues
- \* Found out about Prof Jack Greenwood and School of Marine Science at University of Qld. (075) 365 2491
- \* Dave Claridge (founding MESA member) goes under the knife and recovering well - good luck from us all Dave

## Don't forget to subscribe to next years supplement

Why? Because already I have:

- \* LTLTR that's learning how to learn through reading on five Chapters to marine studies from Geoff Jensen.
- \* A new mariculture unit from South Australia
- \* Information on SIM FISH from Tasmania
- \* A fisheries Biology Assignment from Benowa High
- \* Plankton Crosswords
- \* A sewerage and the Sea Copyright Free paper
- \* Marinating Multistrand Science

So Yes ..... please enrol me for next years Newsletter Subscribers for \$15 you can't go wrong

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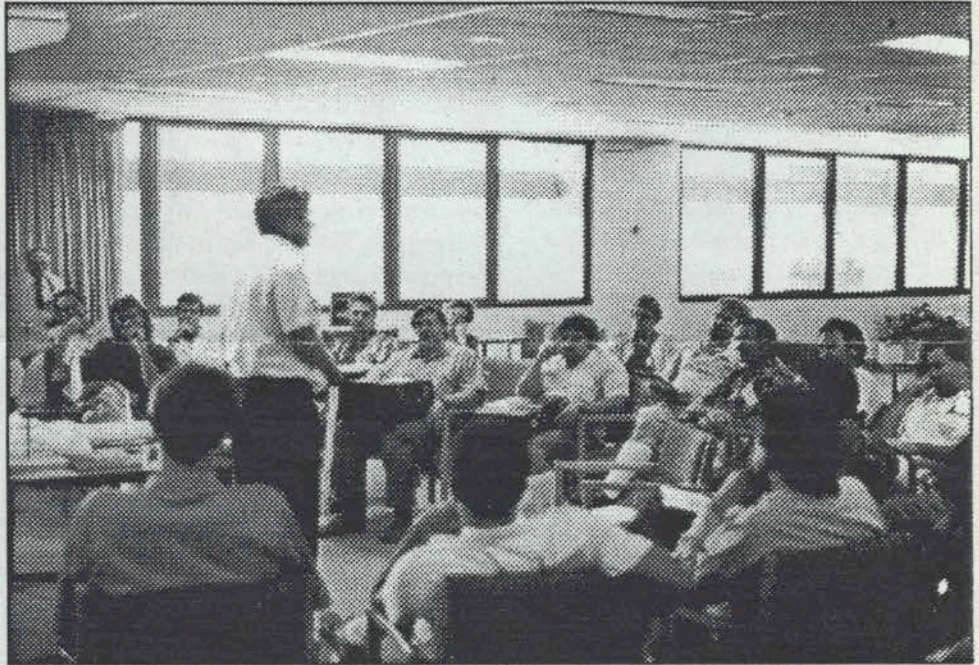




## Seminars Great Success

What a month. Geography, Board of Senior Secondary School Studies, Geography, MESA GBRMPA conferences and Seminars - its great to stay in touch.

Firstly, congratulations to the BSSSS and Ed Dept. for the Ninth Marine Studies three day conference. Some one once said to me, "But why do you want to make it a board subject?" Well the degree of professionalism and support the system gives a University Entry Subject is enormous. The standards expected of students are under close scrutiny and the evaluation of subject matter is both professional and far reaching. If marine studies had stayed a school subject, it would have floundered whereas now it has potential and is being nurtured in a professional and well ordered way. Congratulations BSSSS and Dept. of Ed for releasing teachers and paying the wages for replacements. Well done also for the organisers of the program - I could only attend one day, but it was great to see the old faces again. That's one amazing thing for readers from other states and that is for over the past four years, I guess 80% of the original teachers are still in there doing their very best, not seeking promotion and helping this subject to the greatest of heights. So well done to the teachers and organisers. It was great to hear about the students work in



Old Marine Studies Teachers at the Board of Senior Secondary School Studies Training Conference Number Nine

Cerax from Paul Sumpter, Beach Profiles methods from John Maloney and new ideas on storage of Snorkelling Equipment and demonstrating knot tying with the OHP from Greg Lynch, Frawley College, as was the information on pollution from Tim Ryan, Gympie SHS. We were a bit skeptical as Alan Perry set up with the high tech. laptop and overhead but when we saw the SIMFISH from Australian Maritime College, we were most impressed. Well done Alan - from Hervey Bay College, c/- PO Pialba 4655. Kris Kristinsen from DEH presented the new Whale video and Mark Snartt from Studies directorate summarised the feelings on the state of play with accreditation and the seconded teacher for Marine Safety.

In the discussion that followed many of agreed that there was need for an association of teachers. It could be a subset of MESA but there was a need to network teachers. Wet Paper fully supports this notion and if anyone wants to take it on, we are prepared to help in whatever way possible.

The implementation of this syllabus has involved to date over 40 committee meetings, nine in-service conferences, two full professional evaluations with one full time officer employed to monitor student standards and achievements.

### Nudgee Beach Seminar

Caught between Geography and Marine Studies Conferences, I ended up attending the Tertiary Marine Educators Workshop at Nudgee Beach EEC this month. Organised and funded by the Great Barrier Reef Marine Park Authority and facilitated by Jan Oliver, this workshop provided time for tertiary educators and interested people to get together, learn about what GBRMPA thinks is important for us to know and do some networking.

Well I learnt that the Zoning the Reef had changed, that management provides a continued challenge for us all, and that other groups are just dabbling in Marine Education at a tertiary level.



Jan Oliver summing up at the Nudgee Beach Conference

### New Humpback Whale Video

#### Naturally Queensland

Migration, Conservation and Practical Tips plus Physiology

Available from

Dept of Env & Heritage

PO Box 155

Brisbane North 4002

Cost about \$30 plus post

Thanks for telling us about it Kris



There still seem to be the traditional Marine Biology offerings but I'm sure there's more to it than this so if you think that Tertiary Institutions are not dabbling in Marine Education and are running substantive courses - give me a serve back and I'd love to publish what you are doing.

Overall it was a great two days with Errol Stocks Oceanography lecture a real buzz and have made a very valuable contact for us all here. I met with Errol this month and we both agreed that there was nothing in the form of a decent Oceanography book for Upper Secondary / Undergraduate on the market. Does anyone know of one before we start planning a decent set of notes and activities?

### Great News for SA

Lindsay Holthouse rang this month to say that their Maritime Studies syllabus was finally approved by SSABSA curriculum committee and that this is the last major hurdle before formal approval is given. Lindsay has been working hard on this now for many years so we all wish him well through its final stages. Tumby Bay, Port Lincon, Taperoo, Streaky Bay and Victor Harbour are but a few of the school I know that have started planning. Good luck.

### MESA conference set to be a wow

Planning is well underway for the National Conference of the Marine Educators Association of Australasia as follows.

September 27 - October 1 1993  
The Southport School  
Gold Coast Queensland

Live in, workshops, minicourses, professional papers, student presentation, excursions, River Cruise, Sea World dinner, Great Times.

### Sailing Instructional Kit

Dan Cross from Sea Industries Australia launched a great idea this month in the form of a sailing instructional model that demonstrates the points of sailing. The model works with a fan that can be moved to show how a sail reacts under different winds. Dan has either the plans for sale or the whole model can be made up. Dan is at Sea Industries Australia Limited, PO Box 1040 Runaway Bay 4216 or Telephone 018 75 3954

### Kingscliff Enviro Club Tops

Walked along the beach with Peter Langley from Kingscliff the other day and he brought three of his Enviroclub members. He told me about their landcare dune program and the other awards his class had won.

We also talked to his students about MESA national conference next year and how we could get students involved. The MESA conference committee would love to support the notion of a students part to the conference and would welcome your ideas. Peter faxed me this photo and some information you may find useful.



Water Watch club members Selena Baker and Meredith Evison take water samples from Cudgen Creek. Both belong to Kingscliff SHS Enviro Club, FAX 066 743270 Phone 066 742707, who also won Green Train Award, Earthworm Award, Griffith Uni Banksia Award and were well spoken, caring, intelligent speakers at the Gold Coast MESA meeting

### The Surfrider Foundation

The Surfrider Foundation is a non profit organisation dedicated to the protection and enhancement of Australia's waves and beaches for all people through research, conservation, education and community involvement.

Memberships are: Associate \$10, Full \$20, Family \$35, Retail \$100 with corporate sponsorship of \$1000, \$3000 or \$5000.

Your get Membership stickers and Discount cards from participating surf shops, a periodic newsletter and publications - the Coastal Zone Enquiry Submission is great reading and full of very useful viewpoints especially from surfers and the opportunity to protect and preserve our waves, beaches and ocean lifestyle.

Surfers share a special empathy with the sea. Some people need to surf to stay sane even if it is just to paddle around. Could be the same as "messaging about in boats"

Surfers also value clean water and unpolluted beaches more than anything and are pretty vocal when their life-style is threatened.

No you don't have to hang ten or do a re-entry floater to join. You're a surfrider if at some stage of your life you went for a surf. For many of us now the sheer enjoyment of a walk along the beach rekindles those early childhood memories ... so join now and become involved in the surfers view.

### Surfrider Foundation

Level 2 Old Burleigh Theatre  
Burleigh Heads 4220 or PO Box 444  
Mermaid Beach 4218.. Telephone  
is 075 35 0999 or 016 785 2777 or  
Fax 075 761 527

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in February 93**







# Marine Studies News



Newsletter of Wet Paper Publications 14 Milbong Terrace Ashmore 4214 (075) 39 4187

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## Merry Christmas



Compliments of the season to all our regular newsletter readers, clients, friends, unsolicited readers and competitors. We hope you all have a safe and happy Christmas with all your family and friends and that the New Year will bring you happiness and good health.

Its going to be a wonderful time here at Wet Paper without the joys of publishing a book during the Christmas Break.

### Three years LWOP finishes

Time sure flies as it is now three years since I left Benowa as Science SM on the crest of a wave. Reflecting on the changes that have occurred in Australia since that time we seem to have come a long way. Qld, NSW, SA and WA all now have Marine Syllabi in some shape or form and the dedication amongst teachers implementing it is amazing. (Qld is in the fourth year of the trail/pilot stage and considering general implementation 1995)

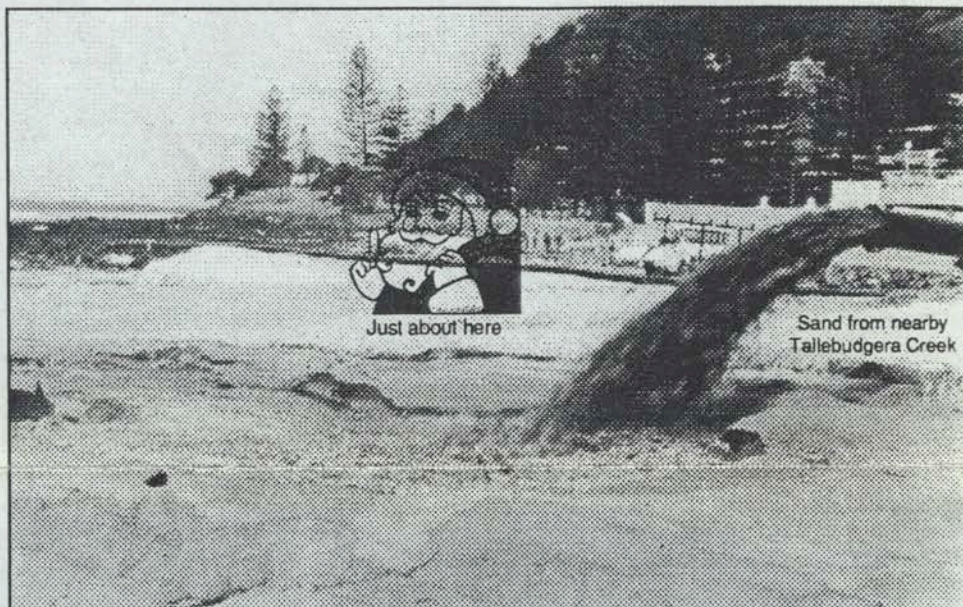
It seems though, many teachers have been dabbling for a long time and trying to get courses going. Well the tide has turned and is starting to race in and the next three years are going to be fantastic.

We are going to see marine courses in all states with increased funding from all sources. The community is going to play a big part in this subject as it will perceive its relevance and obvious motivational benefit for both staff and students.

### New Beach for Christmas

As part of the Gold Coasts beach erosion control program, sand from a nearby creek is pumped to an adjoining headland each year. The process is called sand nourishment and for those of us who will share our Christmas on the beach, its a nice thought that there will be some sand to enjoy it with.

Each year local authorities work hard to provide amenities for us all, and its been my experience that the staff in these places try hard to do a good job.



Beach nourishment work at Burleigh Heads Qld, where Wet Paper will celebrate Christmas so come and say hello

Also local councils have education budgets and will support school projects like the one described next.

### Wet Paper supports Fiji Visit

By now Geoff Jensen, Marine Studies Teacher and PE SM from Innisfail SHS should be on Davauni Is, Fiji assisting the Regional Science and Technology Jakarta branch of UNESCO Robin Hagar is leader - UNESCO Regional Office of Science and Technology - JIMH Thamrin 14 Tromolpos 237/JKT Jakarta 10002, Indonesia) conduct a two week training course for Pacific Island Marine Studies teachers.

The program was organised by Ann Coopersmith (University of Hawaii, 1000 Pope Rd, Honolulu, Hawaii), who some of you may have met at the Townsville MESA conference.

Its a sad day when you finish with your international consultancy work, but heehee, its time for other people to take the lead and Wet Paper is proud to support Geoff with travel and accommodation arrangements. Northern Regional office has assisted with some leave with pay, UNESCO has helped also with travel and accommodation. Geoff has also given up some time without pay so its a real team effort. The staff at his own school, like so many around the country, pitch in and support by looking after classes in his absence. Too often we forget the benefits gained from investing in people.

The benefits I received when I went were staggering. Many of the simple experiments described in the Marine Studies book came directly from this type of international exchange of activities. Geoff will be sharing these on his return in many ways - at his own regional conferences in the northern region, with Wet Paper in the form of newsletter supplement contributions and at the MESA conference on the Gold Coast next year late September/Oct.

The training course is two weeks, is completely hands on Marine Studies Classroom activities for Senior Students. Publication



UNESCO and Wet Paper workshop leader - Geoff Jensen, Innisfail SHS



of his report will be a feature of one of next years newsletter supplements.

## WaterWise book available to schools

The water resources commission of the DPI Qld has just produced a book on water conservation. So what's this got to do with Marine Studies?

Well, apart from being a great idea to get everyone involved in a simple conservation experience, saving water means less sewerage and less pollution of our sea.

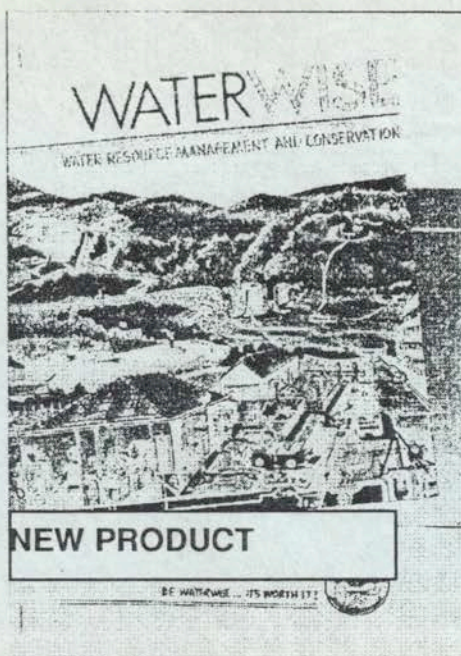
In the past we have channelled our waste into pipes and happily pumped it into the sea. Now is the time to rethink this methods and take some responsibility for our land based actions.

It would be great if we could treat our waste to such an extent, that the water we ended up with was so good, we could pump it back to our reservoirs and drink it again.

You know this idea could even spread to the rubbish that continually blows into the sea. We would look after our land so well that the seas would be left alone to recover from the enormous damage that must have been done over the years.

The book is called - WaterWise - Resource Management and Conservation and has four chapters. The first three describe the water cycle in terms of how humans have taken part of this cycle and put water into pipes. The book follows the water from start to finish in the pipes and describes in detail, how some sewerage systems work and how they can be improved.

The final chapter describes practical conservation methods and ways to be WaterWise. There are activities for stu-



Orders using school order form to Wet Paper 14 Milbong Tce Ashmore 4214 \$10 + \$6 p&p

dents to do, revision questions, excursion ideas and laboratory experiments which give the teacher something to do with students. Two posters are available as well as other facts sheets in a teachers guide which will be available early next year.

OK .. the book costs \$10 and is available from Wet Paper. The Water Resources commission and Wet Paper have funded the project as a joint venture with all profits going back into improving the curriculum materials.

Money from sales will support:

- Teacher in-service
- Promotions and marketing
- Consultancy for teachers who would like to
- Write exam questions to chapters

- prepare overheads for classroom use
- travel to workshops or conferences
- Evaluation

So I would recommend this idea to you all, as a very practical way we can teach students to **Value the Sea**, which is one educational goal that the Geographers constantly remind me of.

## Office closed

Wet Paper is closing office for the following dates:

December 14 - 18th

December 25 - 26

January 1

## School trials

Bob will be trialing WaterWise curriculum materials in schools Dec 1 - 9, but Mark will take all orders and pass on messages.

Don't forget class set discounts if order before Dec 14. Big savings on orders over 50 copies

Once again Merry Christmas and Happy New Year



## Marine Studies Teachers Guide/Newsletter Supplement Subscription Applications

Please supply 5 issues of Marine Studies News and Teachers Guide Supplements for \$15 per year [ ]

Name \_\_\_\_\_

School \_\_\_\_\_

Address \_\_\_\_\_

Code \_\_\_\_\_

Return to:

Wet Paper Publications

14 Milbong Tce Ashmore 4214 Telephone or Fax (075) 39 4187





### NATIONAL CONFERENCE UPDATE Sept 27 - Oct 1 93

## Conference 1993 Information Sheet No 2

### Planning well underway for next years conference

Information sheet Number 1 went to all the MESA State Reps so you may or may not know about our annual conference.

A committee from South East Qld with lots of input from Townsville, has started planning.

Some things have been settled on and these are as follow:

#### Venue:

The Southport School for its locality, facilities and wonderful deal. \$35/ day for full board and accommodation is not bad so we hope that money in this area is not a problem. Accomodation is on a share arrangement and meals are served in the school dining room. The conference is in the school holidays so there will be no students and there is a pool, tennis courts etc. Handy to shops, Surfers Nightlife and is right on the water, making it an excellent venue for marine workshops.

#### The dates are:

**Monday 27 - Friday 1 October** with excursions one either side. Lady Elliott Is, Underwater World, Cook Is Dives, Surfing Terks, Noosa Tours are all possibilities

### *Caring for our coast - 1993 Conference Theme*



Caring for our coast is the theme the 1993 MESA Conference on The Gold Coast Sept/Oct school holidays. Part of the conference committee at a recent MESA meeting

#### Possible formats

The committee is very much in favour of a doing/participating type conference and trying to get away from a sitting and listening all the time or trying offering too much choice.

In this regard we are thinking of longer workshops (say 2.5 hrs) where presenters can have time for participants to do things, and people have time to assimilate skills, as well as longer (say 8 - 10 hour) minicourses where you could say - learn how to drive a speed boat and see what types of standards

expert people believed we should be educating. Or there are many of us who are passionately interested in mangroves or mariculture (aquaculture) and would love to meet others, work on a team presentation to learn and share each others skills, as well as sit down and be updated in this regard.

There is also the need to have the opportunity for people to present papers and the committee is thinking of setting aside on day for this, with not too many on at once but limiting everyone to half and hour.

What the committee wants everyone to do is to fill out the form below...../ 2

#### Call for expressions of interest

Please return to Bob Moffatt, 14 Milbong Tce, Ashmore 4214 Telephone or Fax (075) 39 4187 or Jan Thornton Sea World Telephone (075) 88 2222 or Fax (075) 911056

Name \_\_\_\_\_ Organisation/School etc \_\_\_\_\_

Address \_\_\_\_\_ Code \_\_\_\_\_

Telephone \_\_\_\_\_ Facsimile \_\_\_\_\_

I would like to

run a workshop, join a minicourse team, present a paper, just come along and learn, other (please specify .. its your conference as well as our so tell us what you would like)





Planning the conference over MacD's

and let us know what you want

### Minicourse Ideas

1. Aquaculture - Dave Mason, Paul Sumpter, Geoff Bailey, SA teachers, Industry people, Excursion to local farm, sharing of classroom skills and projects, many schools NSW doing this.
2. Ecotourism for the environment - need volunteers, seems important, any takers ??
3. Mangroves and wetlands - Michael Michie, John Burnett, DPI, Littoral Society
4. Oceanography - Bob Moffatt, Errol Stock, Jack Greenwood (Uni of Qld), could also be Central Qld, Jan Thornton Sea World, WaterWise, the Tasmanian connection
5. Coastal Management/Surfrider Foundation ..... Kingscliffe has won National Awards, who else does Landcare, dunes

6. Marine Biology/Snorkelling - Ted Brambly Kirra Dive and NAUI
7. Powerboat operators - Dave Olreichs and Shaun Linane and Transport Dept, could have AYF, Air Sea Rescue, Coast Guard
8. ?? suggestions - the idea is to form a team to plan the minicourse, network ideas and get people with common interests together

### Workshop Ideas

- \* Ocean rescue 2000 - Don Alcock
- \* Recreational fishing - Dave Claridge . could grow to Fisheries Biology
- \* Underwater photography - Neville Coleman could also be a full course
- \* Build your aquarium - Tim Casey

Really draft idea for program if ten hour minicourses added

Time	Sun	Mon	Tues	Wed	Thurs	Fri
7.00 - 8.30	-	Feature b'fast	Feature b'fast		Feature b'fast	Feature b'fast
9.00 - 10.30	-	Perceptions of the sea	Minicourse A (Can start early)	Professional Papers	Minicourse B a difference	You can make a difference
11.00 - 1.30	-	Perceptions of the sea	Minicourse A		Minicourse B	You can make a difference
2.30 - 5.00	Registration	workshops	Minicourse A		Minicourse B	Farewell BBQ
Night time	BBQ	Sea World Dinner	Formal Dinner	Free	Free	-

## Sponsors corner

The following spiel may be helpful in trying to get sponsors.

### Sponsors from Government

"If you sponsor a mini course you can get your information across and be given the opportunity to bounce ideas back. You can use the conference as a support tool for your continued work"

### Sponsors from Private Enterprise

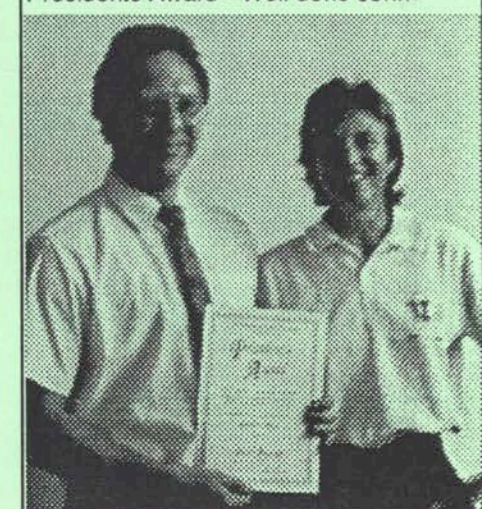
"If you sponsor a minicourse you can have your representative attend and out marketing materials as well as demonstrate your product. Teachers will give market feedback on your products FOC.

For a bit more the conference committee will prepare your company logo and have it on all mailouts associated with the conference.

If you give even more the conference committee will distribute your brochures FOC in Australia wide marketing twice a year.



Presidents Award - Well done John



John Burnett was presented with the MESA presidents award last week by Jan Thornton