



Wet Paper Goes Waterwise

Less water less sewage

What's water conservation got to do with Marine Studies? Well I must admit I had to do some thinking for a while but came to the conclusion that the less water we use, the less goes down the plug hole and therefore the less that has to be treated at the sewage treatment plant and the less that goes into the sea.

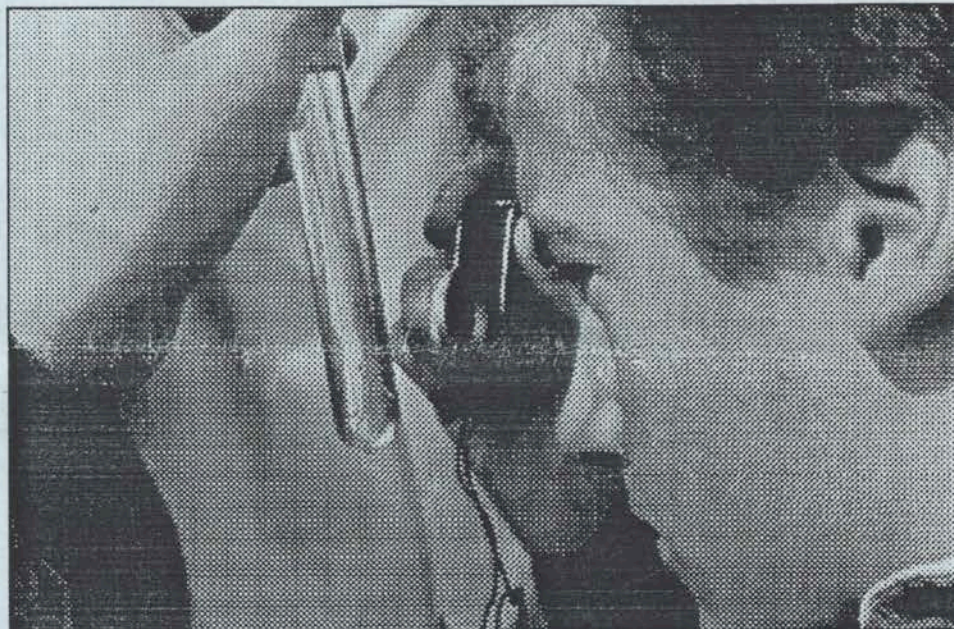
This term Wet Paper will publish a set of teaching notes, worksheets and classroom resources for the Water Resources Commission and the Gold Coast City and Albert Shire Councils.

Education Department to be involved

A successful meeting with local school support centres this month will see local Gold and Sunshine Coast schools become further involved with the waterwise project.

Six trial teachers and schools have been selected to participate in the trial of a two week Year 8 Science Unit which has the support of local school Principals.

Following these trials, and with consultation with the recently formed Studies



Examining a sample of seawater from near wave break Island sewage effluent outfall on the Gold Coast last week was student Michael Witton from Coombabah SHS. Microscopic analysis revealed an abundance of zooplankton and phytoplankton as well as turbidity of 14 metres and salinities of 28 - 35 g/l. Nitrate and phosphate tests are being checked with atomic absorption spectroscopy at Gold Coast City Council

Directorate, the Unit will undergo further trailing in schools before state wide release at the end of the year.

Copies of the Year 8 Unit will be sold, at cost, through Wet Paper.

Consultants appointed

Educational consultants Peter Stannard, Jan Oliver and Kerry Kitzelman have all been subcontracted to Wet Paper to develop waterwise materials.

Peter Stannards expertise in the year 8 Science curriculum unit will be welcomed. Jan Oliver's work will contribute to values clarification activities in years 11 and 12 Geography/Multistrand Science as well as fun activities for years 6 - 12.

Kerry Kitzelman is working on a Water conservation game for Primary School Students in which teams use a model dam, water saving devices and practices to see if they can stop the dam from running out.

Characters such as rainman - who fills the dam by throws of a dice and sprinkler sellers who see if they can tempt householders into wasteful water practices all contribute to a game where our attitudes are exposed and young children see the effects of water wastage.

The game is played for jelly beans and if the class is not tempted by the sprinkler sellers and saves water, they get to keep the jelly beans.



Turbidity as well as other indicators of pollution were measured at sewage outfalls on Gold Coast recently. Boat Courtesy Sea World - Water Testing Kits Courtesy Gold Coast City Council- Program courtesy MESA Seaweed- Activities from Waterwise and Wet Paper.



CONSTAQ 92

Don't miss the waterwise display and seminar presentations at the annual Science Teachers Association of Queensland Conference CONSTAQ 92 - Sunshine Coast This Year.

Information about CONSTAQ 92 from

Greg Smith
CONSTAQ92
Burnside State High School
Winsor Rd
Burnside Qld 4560



NAUI SEMINAR - START OF GREAT THINGS TO COME

Braving the chills of Toowoomba, the Wet paper team took to the roads during Easter vacation to attend Ted Bramblys NEES environmental education Seminar.

NEES is a National Environmental Education Strategy for NAUI divers which presents Marine Studies Education from a divers perception. The program at Toowoomba Grammar, involves students joining a school dive club at Grade 8 and working through their NAUI badges and certificates each year. By the time the students get to Year 12, many have become instructors and are keep to explain the wonders of the underwater world to the up and coming year 8's. This means they must know a great deal about the marine environment and is an added motivation to learn. The Grade 12's I met seemed to devour information about the sea because they had to apply it in class next week with their own classes.

This represents quite a unique way of teaching Marine Studies and if you are interested you can contact Ted Brambly at Toowoomba Grammar School, Margaret St, Toowoomba.

Whale Bay Played by over 50 at Seaweeek

Last week at Seaweeek a group of use played the Whale Bay Game from Chapter 20. We played for three hours non stop !! Please find attached Whale Bay amendments as trailed for Seaweeek as well as a Copyright Free sheet for use in your classrooms.

At the end of the game we sat down in groups to list suggested improvements. These are summarised below.

1. Grouping people with close interests good idea- interest groups to be clearly defined i.e. the old Barrier Reef World Zoning Game had definite groups i.e. the conservationists v's the developers v's the fishermen etc. etc.
2. Signs on tables as people come in i.e. Developers, Greenies, Fisherman, Army, Bush Peoples Action Group etc. - 6 groups plenty.
3. Colouring exercise great warm up to get everyone to know each other.
4. Participants should receive briefing and info beforehand by mail.
5. Need to clarify objectives - what was the initial problem i.e. to zone the park.

6. Presenter/Chairman to play a role too i.e. The Marine Park Authority Rep.
7. Groups should be briefed on weather they support the proposal beforehand.
8. Not much is known about the Catchment Area to Whale Bay - more information needed also Wally Island Description is poor. Need to have more info - suggest leave room for useless scrub for development to occur on - to give the developers a chance to play a role.
9. Add marine park pictures to the game
10. 10 Minutes allowed to check other groups proposed solutions, then 10 minutes to revise plans could be useful.
11. Chairman to sum up conclusions and draw final plan. Groups to leave with final plan drawn so that in debrief drinks and supper interaction can occur with problems - learning continues but with compromises being reached
12. Suggest we play Whale Bay 11 next year to see how the zoning is progressing.

MESA Seaweeek materials now available

The MESA Education kit for SEAWEEK, Marine Parks - Saving our seas, written and edited by Jan Oliver, is now available from

MESA c/- GBRMPA
PO Box 1379
Townsville 4810
Telephone 077 818811

This excellent resource contains some really new and exciting information and contains the following information and curriculum activities:

- ★ Ocean rescue 2000
- ★ What is a MEPA?
- ★ Marine Reserve Case Studies
- ★ What should be done about our Marine Environments - recommendations from the Fenner Conference
- ★ Role Play Game on zoning a new MEPA
- ★ Inquiry on Should Otway Basin be explored for oil?
- ★ Top 40 Activities to do about Marine Environments
- ★ Who is doing what, What would you do if and more

The Matthew Bay game is another role play game and could be used before or after Whale Bay to test the skills learnt in the other. It has more roles and involves judges.

Position Vacant MARINE STUDIES Consultant/s Required

Earn up to \$1,000

Wet Paper requires the assistance of a Marine Studies Consultant to write Revision Sheets and Chapter Quizzes with Answers to each of the Chapters of the book Marine Studies.

Materials developed will have to be on Macintosh or IBM formatted 3.5" discs

For details and application form send a copy of this add name and address to

Wet Paper
14 Milbong Terrace
Ashmore 4214



Bumper Supplement Issue

More Chapter Tests, A Ship Stability Exercise and great article on Working in Fisheries form this issues supplement. Written by Ward Nicholas (Rosedale SHS), Bob Griffin (Gateway TAFE) and Tim Pickford (Australian Maritime College).

If you are not a supplement subscribe you are really missing out. All it takes is \$15 and to fill out the form over.

September Supplement will contain over 250 questions from Tim Ryan and we are editing now. Many multiple choice that match the book and will make great diagnostic test items. For information such as this you would pay heaps.

Youth Environmental Symposium Success

Hundreds of hours work by more than fifty volunteers, facilitators and educationalists saw the YES symposium make its 1992 debut at Numinbah Environmental Centre this month.

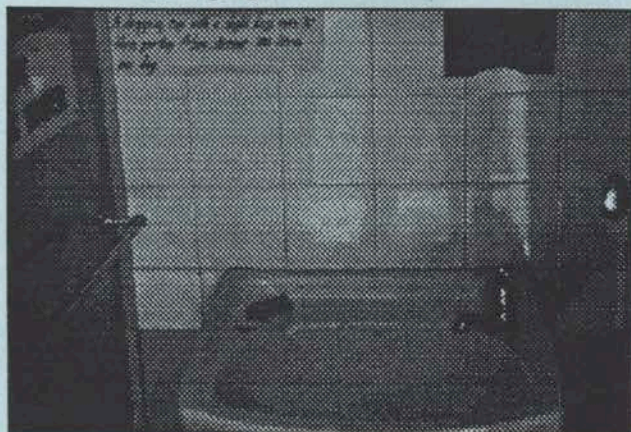
Organised by centre Officer in Charge, David Farnsworth and assisted by new Earth Ed Co-ordinator Sally MacKinnon, the symposium challenged the youth of South East Queensland to research an environmental issues of their choice including rainforest destruction, driftnetting, intractable waste, native wildlife extinction, air and water pollution, land degradation and whaling with a presentation of group findings during August.

David and Sally report that, the course has a 95% representation fro Gold Coast Schools as a result of a lot of hard legwork.

The students will spend a full weekend at Numinbah EEC exploring some basic ecological concepts designed by the Institute for Earth Education.

Wet Paper goes bush to learn about the sea... and earth education

Wet Paper visited one of the YES weekend camps and what an eye opener. It was just the sought of total education that is needed to change attitudes, which is what David told me is fundamental to the program.



Signs in the toilets, great games to play - all part of the total education that we saw at the YES Symposium at Numinbah



Organiser of the YES Symposium David Farnsworth (Left) with volunteers Natasche Schuba (center), the Plant Eater and Sally MacKinnon (Right)

Being interested in water conservation at present, I went to the loo and was confronted by signs saying that 6 litre of water goes down here when you flush, a notice board about conservation in the bush, a sign in the shower saying that up to 70 litres of water can be used in a normal shower. Over the sink was a sign that reminded all that 5 litres of water can be wasted if we don't turn the tap off when we brush our teeth.

The activities I participated in were wonderful, imaginative and involved us all in the process of learning about our world. One activity took us into the bush and then on an energy journey finding the sun and collecting \$1M solariums. As we travelled to earth and met the plant shown above, we lost the required solariums our as we passed through the atmosphere. Then finding our way to the plant shown above, we saw how it used more energy. We had to feed the plant and then travel along metres of food chain till be came across a mouth with ate the rest. However we kept some to find that we were going to experience the pitfalls of eating a pizza. An the activity did not finish there as we learnt about stored energy in the earth.

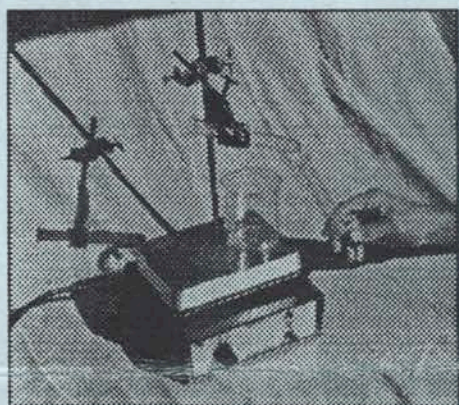
Space does not permit a full discussion but for further info write to David Farnsworth or Sally MacKinnon:-

The Officer in Charge
Numinbah EEC MS 208 Numinbah Valley via Nerang 4211
Telephone (075) 33 4148

Lab equipment arrives for new courses

Wet Paper has just lashed out to set up its own lab and experimental equipment so it can conduct in-service courses and design new experiments. Funded entirely from the sales of Marine Studies, the new lab equipment consists of:-

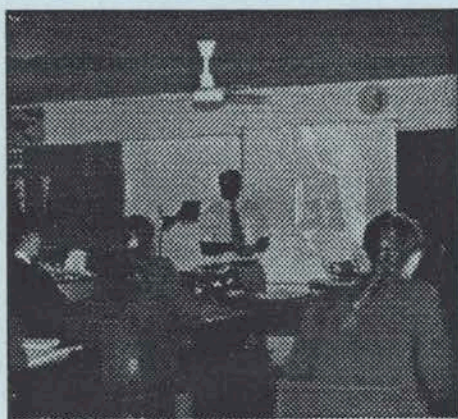
- Minmert Lab Incubator with 0.1°C accuracy for determination of faecal coliform counts
- Two satorius filter kits, pads and microfiltration sets for the collection of faecal coliform bacteria
- 8 Dissolved oxygen kits and their components for the analysis of dissolved oxygen in sea and freshwater
- 4 Nitrate kits for the determination of total nitrates down to 1mg/litre
- 1 Total phosphorus kit
- Junior science equipment as shown below.. test tubes, stands, beakers and assorted lab gear
- A wave tank that can put sand back on a created beach
- Water conservation kits that can be used to increase student awareness to this important issue
- 1 Autoclave
- 6 sets Marine Sampling gear - plankton nets, water sampler bottles etc.



Simple year 8 equipment has been purchased so that new experiments can be created to supplement ongoing consultancy work

Good Grief

No don't blink, but he's back in the classroom - but only to test out three new lectures and programs for a new business venture.



Back in the classroom for a week at Somerset College brings Bob Moffat back to earth

The activities, lectures and demonstration lessons are part of the water conservation package that has occupied Wet Paper for the past three months.

WaterWise Activities

Grade 8 activities involve students discovering how different water saving devices can conserve up to five times the amount of water in a reservoir.

Grade 9 activities allow students to measure the amount of dissolved oxygen in tap water leading to a discussion on water quality.

Year 10 students experiment with a wave tank to measure the rate at which sand can be put back onto a beach after a storm. Wet paper supplies the wave tank, demonstrator, student worksheets as part of the \$35 lesson.

Years 11 & 12 Geography, Multistrand Science, Biology or Chemistry students have the chance to use Wet Paper equipment to determine water quality of sewage and compare this to a local stream or the water in the gutters of their school.

TAFE lectures are available to plumbers on water conservation technology.

The series of lectures extends into the community with short rotary talks and garden club morning tea activities planned.

Materials available

Publications available now include:-

- BBQ notes - facts about water that you can impress others at BBQ's
- Balloons and Bumper Stickers - gimmicky but heeh!!! What's a campaign without them
- Fact sheets about water and water conservation

Publications to come out later in the year include:

- Approx. 120 page WaterWise book to be used as a 12 - 16 week course book for Year 11 Geography or Multistrand Science. It will have brand new text and information not seen before in texts such as how 6 - 3 toilets work, how showers can be modified to save water, the chlorine debate in water treatment and water reuse, sewage disposal
- A 32 year 8 environmental education workbook written in LTLTR (a learning to learn through reading program - a sort of advanced read the text and fill in the blanks - but more intricate and very modern). This is undergoing exhaustive and painful trialling and we hope to have it out, but if we have to pull it apart and start from scratch we will!! The joys of curric devel.
- A primary school water conservation package that ends in a water conservation game.

Draft materials are available for the price of photocopying and postage. The campaign materials are available now so use the order form enclosed



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

