

Colouring Competition

There was a good deal of interest in the colouring competition with many entries being received. Although it was a complex picture to colour with a large time commitment required, there were some excellent entries.

The twenty winners all received a voucher for a free excursion on Chaddys Charters. Winners were:

Junior Section

Jason Dravitzki.....Ratapiko School
Matty Simpson.....Ratapiko School
Kate Zehnder.....Woodleigh School
Liah Roebuck.....Woodleigh School
Matthew Thorby.....Uruti School
Hannah Dudley.....Okato Primary
Majestic Patene.....Okato Primary
Elizabeth Rine.....Home School
Kimberley Watts.....Westown Primary
Sarah Anderson.....Westown Primary

Senior Section

Leigh Katene.....Patea High School
Jennifer Schmidt.....Bell Block School
Lyal Sole.....Bell Block School
Tania Hockings.....Bell Block School
Karen Hendren.....Stratford Primary
Simon Styles.....Stratford Primary
Karley Sim.....Okato Primary
Charmaine Wilson.....Eltham Primary
Emma Ross.....Eltham Primary
Daniel Simpson.....Ratapiko School

Thank you to all who sent in entries and thank you to Chaddys Charters for donating the prizes.



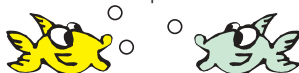
YOUR OWN SITE

It is fantastic to receive positive feedback on S.I.T.E. Most teachers seem to enjoy the layout and information contained. Some however don't always receive a copy.

If you would like your own copy of S.I.T.E. give Paul Radich a call on (06) 765 7127 or fax (06) 765 5097. This will ensure you receive a personalised copy at your school.

Visits to the Biology Laboratory

Last term around 400 school children visited the Taranaki Regional Council biology laboratory, to learn about the Council and see the display of native fish. Some came as part of a river study, others on the way to camp, or to specifically visit the laboratory and have an environmental education experience.



Visits can be tailored to meet the needs of your class, and to make the trip worthwhile we have excellent river sites nearby. We can also offer other environmental learning experiences such as pest control or land management information. There is no charge for educational resources or support.

Answers to Crossword

Across
1 Topsoil 8 Lagoon 14 Do
4 Us 9 Ag 16 Biologist
6 Ph 10 DOC 18 Recycle
7 Oil 11 Tuna

Down
1 Trout 6 Panda 15 O3
2 Pollution 9 Acid 17 TRC
3 Oxygen 12 Algae
5 Shag 13 TB

Email

If you want to contact the Taranaki Regional Council for information, to ask a question or request some information, the Information Officer's address is paul.radich@trc.govt.nz.

NEXT S.I.T.E.

Next term recycling will be the major thrust. Once again we will be offering schools the opportunity to become involved.

There will be a unit of work on offer and our Information Officer will be available to visit schools on request.

Pencil this one into your programme for Term 2.



Paul Radich - Information Officer
Taranaki Regional Council

Ph: 06 765 7127
Fax: 06 765 5097

Seaweek 7-13 March

Seaweek is a national initiative which promotes interest and understanding of the sea and related issues.

In the February issue of Starters and Strategies there will be a page dedicated to this with ideas, curriculum links, and a Seaweek poster.

There is also a competition for secondary students focussing on:

a migratory species
significance of waterways to Maori
a local waterway
water pollution

Information will be sent to secondary teachers soon. As well, there will be a theme song for Seaweek, hopefully playing on radio stations. For help with the competition or a copy of the song and songsheet contact Paul Radich.



TARANAKI REGIONAL COUNCIL
NEWSLETTER TO SCHOOLS

Kia Ora Koutou

Welcome to the summer edition of S.I.T.E. (Schools in the Environment).

For the benefit of new teachers in the region, let me provide some of the background on environmental education.

It is hoped that by educating school children about the environment they will become its guardians, influencing the adults in their lives to care for the environment and become responsible resource users in the future.

The Taranaki Regional Council has responsibility for ensuring sustainable management of Taranaki's natural resources. My role is to work with school children and teachers to promote awareness of environmental issues and give children the skills, attitudes, knowledge and values to contribute towards maintaining and improving the quality of the environment.

This newsletter aims to highlight environmental issues, keep schools up to date with what other schools are doing in environmental education, and provide a cue for teachers who are considering some study with an environmental component.

Interest in 1997 was very encouraging with around 50 schools requesting some sort of involvement in the form of field trips, school visits, visits to our laboratory or information requests.

I thank those teachers who made me welcome and included environmental education in their programme.

I aim to continue the growth of environmental education in 1998 and am fortunate to have the assistance of Teacher Support Services in this aim.

If I can help in any way please don't hesitate to contact me.

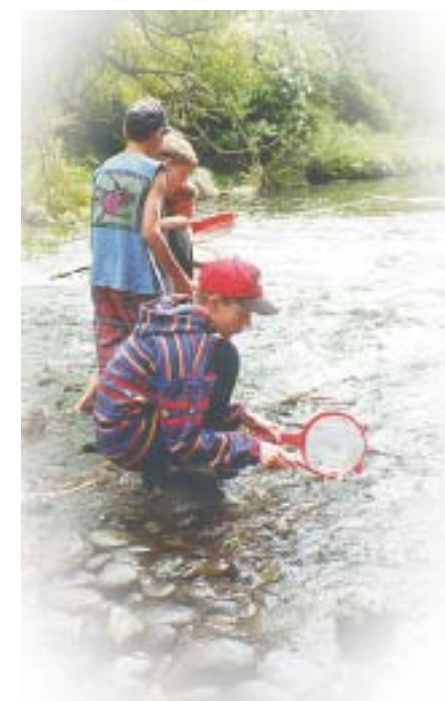
Best wishes for the '98 school year.

Paul Radich



Schools in the Environment - Summer 1998

'Living with the River' - Major focus for Term 1



Bell Block Primary School children at Eltham camp, collecting river life for identification.

follow, equipment to work with in the field, personnel to help with a field trip and find a suitable site if necessary. The unit of work concentrates on biological, chemical and physical monitoring and includes hands-on activities for children to try.

This unit of work ties in particularly well with the science (making sense of the living world), social studies (place and environment) and technology curriculums but there is an integrated approach with suggested language, art and maths activities.

The field trip includes children finding and identifying invertebrate life, sampling water for pH, measuring flow and water clarity, as well as some fun activities. While this unit is aimed at levels 3-4, it can be easily adapted to all school levels and secondary teachers may find something in it to fulfil their curriculum requirements. There is also a video available with the unit, ph (06) 765 7127.

Please contact Taranaki Regional Council, Information Officer if embarking on a river study. Council will provide equipment and a guide for a river site visit and visit your classroom if required.

The Coast - Te Takutai Moana

Many requests came in for the unit of work produced by the Taranaki Regional Council about the coast. Topics covered in the unit included pollution, monitoring sea life, coastal erosion, marine reserves, and Tangata Whenua issues. The unit included diagrams and descriptions of sea life found in Taranaki and a small poster. All the topics related to the Taranaki scene.


If you require a copy of The Coast-Te Takutai Moana or assistance with equipment or personnel to support your coastal study please contact Paul Radich.

See back for winners of colouring competition.



Okato Primary children at Kawaroa identifying rockpool creatures.

The Story of the Golden Eel



Occasionally nature provides us with unusual and rare creatures. The golden eel is one such example. The golden colour occurs due to a lack of melanin in the skin of the eel, which normally gives an eel its dark colour. (This is different to an albino eel which has no colour at all). Golden eels are thought to occur at a frequency of less than 1 per 100 000.

In the early 1990's the Taranaki Regional Council was given two golden eels which were displayed for the public at our biology laboratory. Local Taranaki Maori then informed the council of the special significance of such eels, saying they were sacred and guardians of the environment. In response to Tangata Whenua concerns, these eels were returned to the streams they came from.

This was completed by Council staff, and Iwi representatives with the media present.

Golden eels are still seen in Taranaki rivers from time to time.

Golden eel

Fresh water - our precious resource

Fresh water is one of the essentials of life we often take for granted in Taranaki.

We don't really become aware of its importance until there is a drought and its availability may be limited, or until it becomes polluted affecting its use. We rely

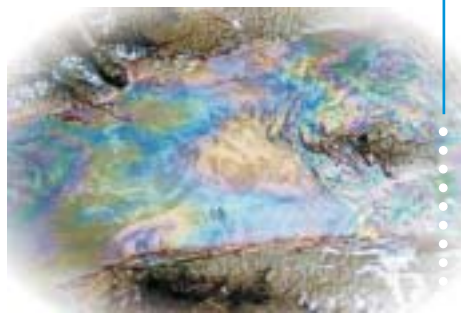
on water to drink, wash in, swim in and fish in. Industry requires fresh water to produce thousands of products, and to clean and cool machinery. The agricultural industry relies heavily on fresh water for animal consumption and cleaning. As well as this the inhabitants of rivers and streams depend on clean unpolluted fresh water to live in.

What is water pollution?

When substances from human activities find their way into water they may poison and disrupt aquatic life, or the amount may be too large for the waterway to absorb.

There are two main categories of pollutants.

- Poisons or substances which disrupt life, eg cyanide, mercury, and petroleum compounds.
- Organic substances which often may be acceptable in low concentrations but which can overwhelm the capacity of the environment to absorb them, eg sewage effluent, agricultural or food processing wastes, or milk products.



Oil spill floating on the surface of a stream.

Electric Fishing

Electric fishing not only sounds exciting but it also provides valuable information.

It involves putting an electric current through the water which interferes with the swimming pattern of fish and causes them to stop swimming and either sink or float.

The fish are then caught in a net, identified and released after recovery. Electric fishing is particularly valuable when establishing the effects of barriers on a waterway. It is used to establish whether fish species found downstream of a dam or weir are also present upstream.

Electric fishing may also be used at times of fish kills following pollution events.



Scientific Officers electric fishing.

Did you know?

- New Zealand has 27 native fish species. At least 18 of these are found in Taranaki.
- Whitebait, while all looking the same when young, are a number of different species including inanga, giant kokopu, short jawed kokopu, banded kokopu, and native kaoro and smelt.
- You can easily tell a longfinned eel from a shortfinned eel. A longfinned eel has the top fin running further along than the bottom fin. In a shortfinned eel they are the same length. Longfinned eels have been estimated to live for up to 60 years. Male longfinned eels migrate at an average age of 23 years, while females migrate at 34 years. This is because females need to be bigger for reproductive purposes.
- Lamprey look like eels but are quite different. They are an ancient fish with seven gill openings and a sucker-like mouth which they use to suck body fluids from their hosts at sea. Lamprey migrate back to rivers to spawn in the winter. Taranaki Maori consider lamprey a delicacy and look forward to this migration to gather them for kai.



How do we detect water pollution?

Because water is so important we must aim to prevent pollution and if it does happen find out how it occurred and what can be done to limit the effects and prevent it happening again.

The Taranaki Regional Council uses two main methods of assessing water quality and detecting pollution.

•Chemical analysis

For chemical analysis, samples of effluent and river water are tested at our laboratory to check for the presence of any wastes in the water.

•Fresh water biomonitoring

By assessing the aquatic life in the river, scientists can tell how healthy the river is and has been.

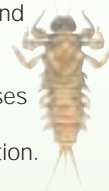
Biomonitoring ...

Surveys are carried out on aquatic insects, crustaceans, molluscs and worms. These are collectively known as invertebrates (animals without bones). As different invertebrates vary in their tolerance of the amount of pollution in a stream they are good indicators of water quality.

Each invertebrate is assigned a score of 1 to 10, 1 being very tolerant to organic pollution and 10 being very sensitive to organic pollution. Scientists take these samples back to the laboratory for sorting and identification.

The river site is then given a numerical rating based on the average score of the invertebrates found and richness of invertebrate life. Taranaki Regional Council scientists collect and process around 350 samples each year.

Thirty two sites are monitored twice yearly to contribute to the State of the Environment monitoring. About 200 sites are monitored annually to check that consent holders (industries etc) are staying within their permitted guidelines. Nearly 700 sites have been sampled over the years in Taranaki and more than 3500 samples have been processed during this time.

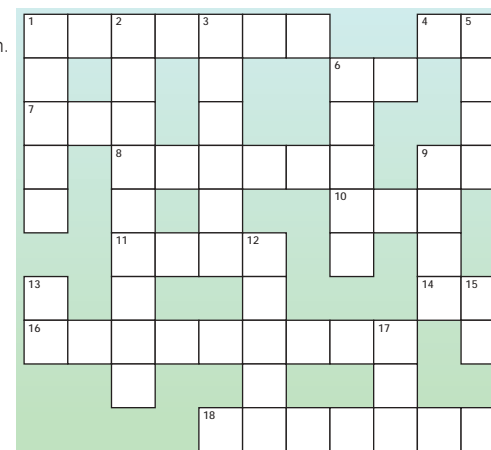


ACROSS

1. The surface layer of earth essential for plant growth.
4. People who can help protect the environment for the future.
6. A measure of acid or alkaline.
7. A substance which can cause marine pollution.
8. Body of water cut off from open sea by coral reef or sand bars.
9. Symbol for the grey-white element used to make jewellery.
10. Department responsible for protecting native species.
11. The Maori word for eel.
14. Abbreviation for dissolved oxygen.
16. Person who studies plants and animals.
18. What we should try to do with rubbish.

DOWN

1. An introduced species popular with fishing folk.
2. Contamination of the environment.
3. An essential gas we all breathe.
5. A coastal sea bird.
6. The symbol of World Wide Fund for Nature.
9. Found in lemons - the opposite to alkaline.
12. Seaweed fit into this category of plant.
13. Disease carried by possums.
15. The chemical formula for ozone, with 3 oxygen atoms.
17. Taranaki council responsible for sustainable use of the environment.



The River System

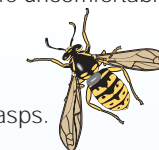
- 1 River mouth
- 2 Riparian planting
- 3 Wetland
- 4 Tributary
- 5 Headwaters
- 6 Confluence

Activity - Label the dots with the correct river system feature (you may need to use your dictionary).

Help Eddie the eel find his way down the white water

WASPS

Wasps are a pest this time of year at school and each year they make life uncomfortable for children and teachers.



The following information may help in dealing with wasps.

As well as being a nuisance wasps impact on our environment, competing with native birds for valuable food resources. They have also been known to kill chicks in their nest.

Finding a nest

Wasps normally forage within 200 metres of their nests. To find a nest site, observe the flight paths of wasps at dawn and dusk, when the angle of the sun highlights flying insects. You can make wasps easier to follow by attracting them to bait and sprinkling them with flour or icing sugar so they are more visible.

Destroying a nest

This should on be done by an adult. Once you have found a nest, locate all the entrances, taking care not to disturb the wasps. Return at night (when the wasps will be asleep in the nest) and tip a tablespoon of Carbaryl insecticide into each entrance (Carbaryl can be obtained from any garden shop). When the wasps become active they will carry the poison into their nest on their bodies, killing the wasps in the nest within a few days. It is not recommended to pour fuel into a nest.



Wasp Traps

Large numbers of wasps can be killed with a very simple trap.

1. Cut the top quarter off a plastic soft drink bottle.
2. Invert the top and glue it back on so that the narrowing opening faces down into the bottle.
3. Half fill the trap with a mixture of water, sugar (1 tablespoon per 100mls) and a little detergent (1 teaspoon).
4. Wasps will be attracted to the sugar and will land on the surface of the water. The detergent breaks the surface tension so the wasps sink and drown.

