

What's happening out there?

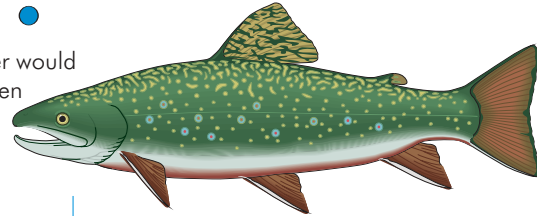
It would be neat to know about any environmentally friendly initiatives that your school has taken part in over the years, or is currently involved in. You may have a recycling programme in place; have been involved in a beach clean-up, adopted a river; planted some native trees. If you have been or are involved in any of these activities, please fax through the information to the Council. This will help establish a database and provide a support network for schools who wish to embark on their own environmentally friendly programmes.

Feedback

Any feedback you have on this newsletter would be appreciated and would help strengthen environmental links within Taranaki.

If you:

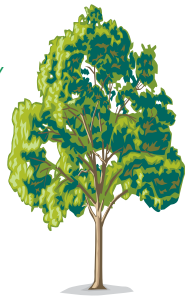
- have some environmental happening at your school or have been involved in an environmental project in the past;
- have any suggestions about how S.I.T.E. could be more useful to you in your school;
- want something in S.I.T.E clarified or extended; or
- wish to remain on the mailing list or just wish to offer your support



Te Wera Arboretum

Nothing to do? Pack a picnic lunch and invite your family or school to visit the Te Wera Arboretum.

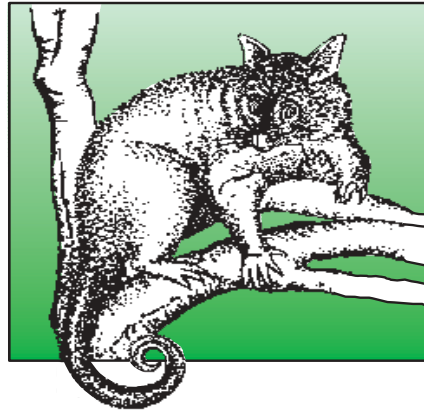
This fascinating display of tree species from throughout the world looks stunning in the autumn and provides a pleasant walk for all ages.



Admission is free and picnic areas and toilets are available. This facility is supported by the Taranaki Tree Trust and TSB Community Trust. It is located 37km east of Stratford on State Highway 43 next to the Te Wera camp site.

Possum Controllers

The Taranaki Regional Council's latest possum control operation is focused on the Korito area. So schools within this area can expect a visit from our pest management officers. If your school is outside this area, but would like a visit on possum control contact Paul Radich at the TRC.



Competitions

Write a poem, fictional story, or factual essay on the part rivers play in our lives and why they should be protected (no longer than 500 words).

Or design a poster based on the 5 key messages about freshwater (maximum size A3).

Winners will receive a prize pack and have their names published in the next S.I.T.E. newsletter.

Send your entries to the

Environmental Education Officer
Taranaki Regional Council
Private Bag 713
Stratford

Entries close 30 May 1997.

Tell us

If you are involved in any environmentally orientated organisation, let us know. We can publicise your activities in future issues of S.I.T.E.

Fax: 06 765 5097



The next issue of S.I.T.E will arrive at schools early in the 3rd term and the focus will be weather. Teachers may choose to leave a slot in their long term plans for this topic and forward any ideas for the page.



TARANAKI
REGIONAL
COUNCIL

TARANAKI REGIONAL COUNCIL
NEWSLETTER TO SCHOOLS

Kia ora

My name is Paul Radich and I have been appointed as Environmental Education Officer for the Taranaki Regional Council. I have a teaching and travelling background, having taught in Taranaki, the Hawke's Bay, Japan and England.

While travelling I developed an interest in environmental issues and on returning to New Zealand, was made aware of the special environment we have here - something well worth protecting.

When the position of Environmental Education Officer at the Taranaki Regional Council became available, I saw it as an opportunity to work locally towards a national and global cause.

My main aim is to help Taranaki teachers access the information and resources they need to promote environmental education and provide links with the national curriculum where possible. I look forward to helping where I can. I don't have all the answers but can help you to find them through the expertise we have here at the Taranaki Regional Council, and the links we have with Teacher Support Services and Jock McKenzie, Science Advisor at Massey University College of Education.

Environmental education has cross-curriculum links, lends itself well to a thematic style of learning and teaching and allows students to become involved in practical 'hands on', fun activities.

My guess is that many classes and teachers out there are already involved in environmental education. I would like to support them and any others who would like environmental education within their school.

I hope you find this newsletter useful and look forward to any feedback.

Paul Radich.



S.I.T.E.

Schools in the Environment - Autumn 1997 No.1

Schools and Environmental Education



Paul Radich assisting Warea School children with a study of their local river - February 1997.

The Taranaki Regional Council is committed to developing liaison with schools by implementing an environmental education programme.

What are schools doing about 'environmental issues'? How can I encourage my students to be environmentally responsible? Could our school do more recycling? How do I establish a native planting programme at our school? What is a riparian strip? How can I conduct a successful river/seashore study? These may be some of the questions you have asked at some stage of your teaching career.

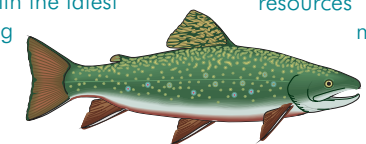
The Taranaki Regional Council (TRC) is charged with responsibility for sustainable management of the region's natural resources and education is one of the key tools available in achieving this aim. Hence an education officer has been appointed to proactively encourage healthy environmental attitudes and practices among our primary and secondary school students and make them aware of environmental issues. The goal is to foster a responsible attitude toward the environment and the target is the citizens of the future.

What is S.I.T.E. (Schools in the Environment)?

The S.I.T.E newsletter is a means of the TRC communicating with all Taranaki schools, keeping them up-to-date with the latest national initiatives, providing a network for schools to share ideas and resources and finding out what schools are doing in the environment. S.I.T.E. also aims to provide practical information and ideas for studies which teachers may choose

The first S.I.T.E.

The first issue will focus on 'the river' and resources available. Although we are moving out of the season when it's fun to get out and visit our rivers, there is still relevance in making this an ongoing study. Teachers may not necessarily want to embark on a river study now, but should remain aware of the resources available.



S.I.T.E. Newsletter - Autumn 1997

Alive and swimming...native fish on display



- Include a visit to the Council's biology laboratory display in your river study
- See the live collection of native freshwater fish that occur in Taranaki
- Learn about the adult whitebait species (kokopu, inanga, koaro)
- View the fascinating range of streambed life through a video microscope

To incorporate this unique resource into a unit of study for your class contact:

Paul Radich Ph: 06 765 7127 Fax: 06 765 5097

TRC Biology Lab - up, running and improving

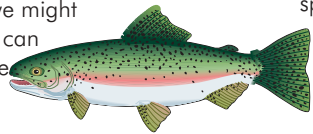
Our biology laboratory, featuring live fish, is approaching completion after a re-fit. Many schools have visited this in the past and have found it to be most worthwhile.

The laboratory is an actual work space for our freshwater biologists and marine ecologist. The lab also has an impressive display area with eels, native and introduced freshwater fish and a new marine tank which will be the home for some intertidal creatures.



Visits to the lab usually take about an hour. There is an opportunity to view the aquarium and a lesson is also given on freshwater and marine monitoring, their purposes, and methods. Some examples of the insects and bugs we might find on the streambed can be viewed under a video microscope.

If you would like to arrange a visit, either in conjunction with your river study or for another purpose, please contact Paul.



River Facts

Taranaki has over 540 named rivers and streams including 148 significant waterways. The largest in terms of water flow being the Waitara followed by the Patea. These rivers contain about 25 fish species and more than 90 invertebrate species (that's mayflies and bugs etc).

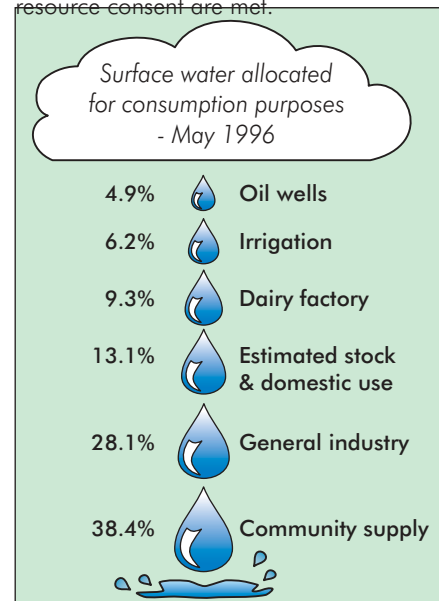
In Taranaki we use around 4 232 litres of surface water per second. Thirty eight percent of that is for community supply. Who do you think uses the rest? Rivers that originate on the mountain drop in summer by 50% of their normal flow.

Did you ever wonder why rivers still have a lot of water in them even when it hasn't been raining for days/weeks, there's no snow melting, and the ground is dry? The rivers are being filled up by water coming from out of the ground in the form of springs and seepages which brings us on to the topic of groundwater.

Groundwater is water which occurs in formations below the earth's surface. In Taranaki we use 21 588 cubic metres per day but recharge is 4.6 million cubic metres per day so it's not too much of a problem.

If someone wants to take water from a stream, discharge water into a stream or build some structure affecting a stream, they must obtain a consent from the Taranaki Regional Council. Our

scientists ensure that no major harm is being done and monitoring is carried out on a regular basis to check on any effects, and make sure the conditions of the resource consent are met.



Junior Environmentalists Page

This page is designed for children and focuses on the theme of the newsletter. Hopefully you can find or adapt an activity to suit your class level.

River Profile

- Activities
- Find out the names of rivers or streams near you. How did they get their names, what do they mean? If they have a Maori name, find out what they mean.
 - Using a map, find out where the river comes from, where it goes to - and what other streams drain into it
 - Is your river clear, murky, fast, slow flowing, rocky, sandy?
 - What life lives in your river?
 - How high does your river get in the winter, how low in the summer?
 - What is your river used for, is water taken out of it?. Is wastewater discharged into it?
 - What is on the banks of your river? Grassland, native or introduced bush?
 - Research the historical events that may be associated with your river - major floods or droughts.
 - Study a map to discover how areas of housing, industry or farms may affect water flowing into the river.
 - Check rivers and streams in your area for any signs of pollution, sick or dead fish, changes in the colour of the water, foam or rubbish in the water.

Dictionary

Find out the meaning of the following river-related words:

invertebrate riffle
 turbidity riparian
 hydrology velocity
 angler biology
 weir catchment

W F L G B O U L D E R S
 E C R A W L E R S E A A
 I A O E C A R E U L I N
 R S C F S W I M M I N G
 S T K L R H A B M H P L
 D I S C H A R G E E K E
 T N A I R A P I R O A R
 R G M E E A T W K R A N
 O U E O T S O O E P H L
 U R N E T L P V I W G R
 T A A E F U I D F I S H
 C O N S E R V A T I O N

Vocabulary word find
 Here are 30 words written forward, backward, up, down and diagonally, see if you can find them.

- | | |
|--------------|----------|
| Boulders | Fresh |
| Crawlers | Rain |
| Angler | Riparian |
| Flow | Casting |
| Swimming | Rocks |
| Kokopu | Trout |
| Discharge | Mean |
| Care | Summer |
| Tree | Fish |
| Nets | Run |
| Patea | Rapid |
| Canoe | Eel |
| Wai | Roar |
| Conservation | River |
| Weirs | Sea |

Why study the river?

Rivers influence our life here in Taranaki in many ways and they are one of our greatest resources, which must be protected.

Rivers are used for recreation, industry, domestic consumption and irrigation.

It is essential that our rivers are looked after to cater for all users (including the fish).

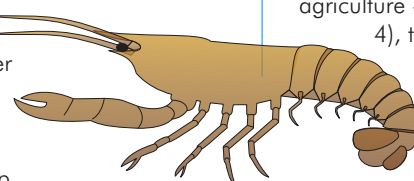
The Taranaki Regional Council carries out extensive monitoring to ensure water quantity and quality standards are maintained. Much of this monitoring can be adapted to suit children, with the children actually taking ownership of their local river.



Some of the first visitors to the upgraded display were from the Stratford Primary School.

River Kits

River kits are currently being assembled which will include sieves, hand lenses, buckets, identification sheets, flow meters, thermometers, turbidity tubes, and laminated activity sheets. The kits will be made available to schools to borrow and use for their river studies. If you would like to use one with your class, or if you would like some help with a river study, contact Paul. This could be suitable for a camping experience when near a river.



The long-term aim is to encourage schools to focus on their local rivers, and to become involved in regular monitoring and then sending their data to scientists at the Taranaki Regional Council. Schools involved would receive regular feedback.

Resources

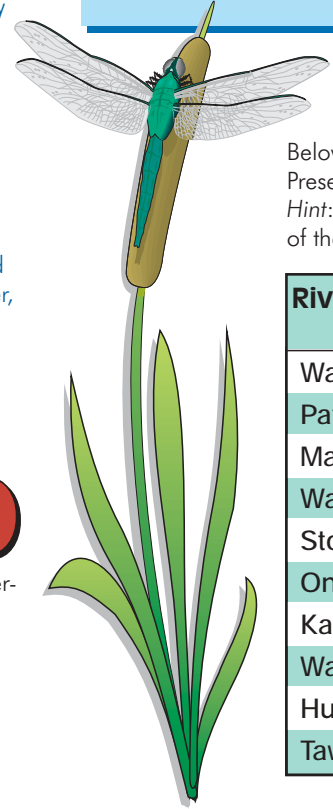
The TRC has a number of resources which are available to schools. Some interesting topics include recycling and waste management (all levels), soil conservation (level 5 and above), sustainable agriculture - living with the land (levels 3-4), the living sea (levels 2-3).

TRC also has a popular series of information sheets with topics ranging from composting to controlling possums, riparian margins to resource management issues, gorse to groundwater hydrology. Resources we don't have, can be accessed through an Environmental Resource Directory.

Taranaki Regional Council
 Private Bag 713, Stratford
 Ph: 06 765 7127
 Fax: 06 765 5097

Messages about Freshwater

- Share** Think of other people's need for water
- Take Care** Don't pollute water with wastes
- Conserve** Don't use more than you need
- Protect** The habitat of fish and other stream life
- Respect** The Egmont National Park (the origin of most of our water)



Below are the catchment areas and mean flows of some Taranaki rivers. Present these on a graph of your choice. Hint: you may need to provide a break in your graph to deal with some of the large numbers.

River/Stream Name	Total catchment (km ²)	Mean flow (Litres/second)
Waitara	1400	57 000 Bertrand Road
Patea	1140	22 000 Mangamingi
Manganui	220	6 800 Everett Park
Waingongoro	250	6 800 Eltham
Stony	55	6 200 Okato
Onaero	90	2 300 Mataro Road
Kapuni	50	1 700 SH45
Waiwhakaiho	140	1 000 SH3
Huatoki	25	750 Mill Road
Tawhiti	80	500 Duffy's