

**Dudley School** near Inglewood has developed an ongoing relationship with their nearby stream, the Ngatoro. In May, the whole school had a field trip following the stream from its source in the National Park to where it enters the sea at the Waitara River mouth.

Along the way, the children studied flow conditions, water temperature, riparian (streamside) cover and stream life.



Jana Hartley, Jasmine Marshall, Robert Marshall and Brendon Kroon with their magnificent 3-D model showing the course of the Ngatoro Stream.

The children are also taking action for the environment by monitoring the stream annually at a site near their school. The results of the monitoring will be sent to Council.

In June, the children helped a local farmer plant the banks of the stream to improve water quality and habitat. The children will continue to be involved in monitoring the stream and caring for the plants. All this has been complemented by classroom studies which covered a range of curriculum areas.



Dudley School children, teachers and parent helpers checking on the Ngatoro Stream.

## Siemens Science Experience

Fifth form science enthusiasts recently visited the Taranaki Regional Council as part of the Siemens Science Experience facilitated by the Taranaki Polytechnic. The students collected and analysed biological data to help assess the condition of the Patea River at Stratford. They also had a 3-D view of land management issues using aerial photographs and stereoscopes. It was fun to work with a keen group of future scientists. Who knows, there could be a freshwater biologist or a Land Management Officer among them.



Siemens Science Experience students identifying invertebrate life at the Taranaki Regional Council biology laboratory.

## Resources available

A reminder that as well as the unit on trees, which is promoted in this newsletter, there are a number of other units available on:

- weather
- recycling
- the coast
- the river
- possums (mini-unit)

Other resources from the Taranaki Regional Council include videos, information sheets, booklets and reports on environmental topics.

Videos include:

- Natural Born Weed Killers, about biological control of weeds
- Climate of Concern, about climatic issues
- Biodiversity in Aotearoa
- Trees for Survival
- Native Fish
- Volcanic Hazards



Available from Paul.

## Bits'n'Pieces

### Civil Defence Resource Kit

A Civil Defence Resource Kit for primary and intermediate schools has been produced. The kit focuses on the essential information children need to know to keep safe, and involves fun activities which fulfil many curriculum objectives. The kits will be launched on 10-12 August at Hawera, Stratford and New Plymouth. Details are enclosed with this newsletter.

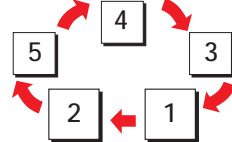
### Taranaki Science and Technology Fair

It's that time of year again when we start preparing our exhibits for the Taranaki Science and Technology Fair. Remember that there is a special prize from the Taranaki Regional Council for an entry, from any category, that demonstrates some aspect of environmental science. Exhibitors should also note that there are four \$1000 scholarships available this year, sponsored by local industries. For more information contact the HOD science at your school

### Living with the river in-service training

After the success of the Big Coastal Day Out, another training day for primary and intermediate teachers is planned. The river is the topic and there will be a range of fun and educational activities offered for teachers who wish to explore the river as a topic for study. Look out for details arriving at your school soon.

**Answers from page 3:** Identification - 1. Rimu, 2. Kōwhai, 3. Mānuka, 4. Kauri, 5. Pōhutukawa. Reproduction:



## NEXT S.I.T.E.

The next issue of S.I.T.E. will focus on the mountain. We will look at how it affects our environment and life here in Taranaki. Look out for it in the last newsletter of the year.

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TARANAKI REGIONAL COUNCIL  
NEWSLETTER TO SCHOOLS

### Walking the talk

One of the best ways to promote care of the environment and healthy attitudes towards the environment is to actually model that behaviour.

The school context provides many opportunities to model environmentally friendly behaviour, such as, waste minimisation, recycling and composting. It could also include having an area at your school where trees are propagated, planted and maintained.

Schools participating in activities such as clean-ups, recycling and tree planting make a strong statement about the importance of the environment to the children and community.

Schools could also look at their energy and water usage. Turning off lights and heaters when not in use, and fixing dripping taps, will send a positive message to children about wise use of resources.

Making an effort to avoid activities that damage the environment, such as polluting the air by burning inappropriate material like plastics in the school incinerator, is also important.

When I was teaching I sometimes washed paint brushes in outside drains that went through the stormwater system to rivers and the sea. This of course had the effect of polluting waterways and endangering aquatic life. Unfortunately, although ignorance was the reason, this was the wrong environmental practice to show the children I taught.

By making an effort to avoid harming the environment and participating in environmentally friendly activities, you are showing that **caring** for the environment is a **value** of your school. Of course the same principles apply in the home situation. The environmental actions we take, and behaviour we model, will have a big influence on the environmental manners of our children.

Paul Radich



Schools in the Environment - Winter 1999 - No.10

## Trees for the environment



Stephanie O'Brien, Jason Busby and Sam Smillie, of Dudley School, planting trees beside the Ngatoro Stream.

Trees will be championed in this term's newsletter. We look at the many ways that trees contribute to a healthy environment.

A unit of work on trees has been produced and is available free of charge to teachers who request it. The Council's Information Officer is also available to visit your class to talk about trees, and some trees are available for planting at your school. This unit suits levels 1 to 4.

To request the unit *Trees for the Environment* or a visit to your class, contact Paul Radich.

## Turtles at Avon School

Senior children at Avon School helped trial the new Civil Defence Resource Kit. The lesson focused on keeping safe in an earthquake. The children learned that turtles had the right idea by not panicking, and protecting themselves by keeping their arms, legs and heads under a shell.

To reinforce this message the children cast plaster of Paris turtles and painted them to have a constant reminder of what to do. The turtle moulds were designed by Nigel Ogle of Tawhiti Museum and can be borrowed free of charge by classes using the resource kit.



Details for the Civil Defence Kit training afternoons, included with this newsletter.



Photos: A - Tom Joseph demonstrating turtle safe, B - Erin Self casting her plaster of Paris turtle, C - Riki Ngawharau painting his turtle, D - Shane Wale, Chris Devereux, Tom Joseph and Shane Demchy display the finished product.

# Trees for the environment



## Trees help our environment in many ways by:

- converting carbon dioxide into oxygen for us to breathe
- contributing to the water cycle by raising water from the ground and releasing it into the air
- binding soil to prevent erosion
- providing shelter for livestock and crops
- providing a barrier to noise, light and traffic fumes
- reducing the force of water on the ground and slowing run-off with branches, trunks and roots
- sheltering us from the wind
- shading us from the sun
- nurturing and giving a home to birds, animals, and other plants
- giving us timber, rubber, glues, soaps, oils and fibres
- beautifying our environment and many more

The Taranaki Regional Council promotes the use of trees to enhance the environment. In this page we will look at some of the ways trees and plants help fulfil environmental objectives.



## Trees fight global warming

The amount of carbon dioxide (CO<sub>2</sub>) in the atmosphere is an environmental concern. A build-up of CO<sub>2</sub> is believed by many scientists to cause global warming.

Global warming occurs when too much heat from the sun's rays is reflected off the earth and trapped in the layer of CO<sub>2</sub> gas in the atmosphere. This trapping of gas is important as it provides us with protection from extreme temperatures. However, if too much CO<sub>2</sub> builds up, too much heat is trapped and warms the earth in a similar way that heat builds up in a greenhouse.

Scientists who have been measuring gases in our atmosphere have discovered there is now one quarter more carbon dioxide in the atmosphere than there was two hundred years ago. This has probably occurred from burning too much fossil fuel such as oil, coal and gas and burning large areas of forest.

Trees take carbon dioxide from the air to help them grow, and let out oxygen which we need to breathe.



The Taranaki Regional Council supports growing trees to help reduce CO<sub>2</sub> in the atmosphere.

The Taranaki Regional Council supplied at low cost; over 35 000 trees and plants to landowners for riparian management, wetland enhancement and soil conservation this year.

Kereru (wood pigeon) is the only bird in the bush that can swallow large berries such as karaka and tawa. If there were no kereru to spread the berries there would be no more karaka or tawa.



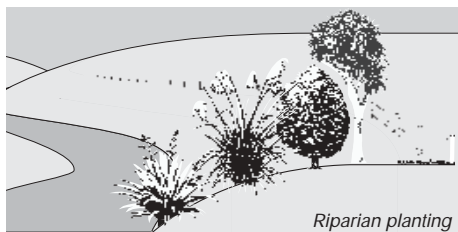
## Trees for riparian planting

Riparian margins are the strips of land beside a waterway (stream, river or lake).

Before people came to New Zealand these strips of land were covered in trees and other plants. The riparian vegetation kept the waterways cool and shaded, and helped the water quality by filtering any surface water before it flowed into the river. The trees and plants also helped hold the banks up and stopped them from eroding.

Today, many waterways have lost their riparian cover. People took it away without knowing that it was important. Nowadays, when we travel around Taranaki we see many rivers and streams that are without any trees alongside them.

We now need to replant these riparian areas. This involves fencing off an area on either side of a waterway to keep stock out. We then need to plant trees and other plants and look after them (weeding etc) until they are well established. This will improve the quality of the water and provide habitat for fish, birds and other creatures, and of course it looks good too.



Riparian planting



## Sustainable land management

Trees have an important role in the Council's Sustainable Land Management Programme. Taranaki Regional Council staff provide free advice and information to landowners on how to make sure their land is used in a way that will keep it good for future generations. Planting trees in riparian areas and for soil conservation helps to achieve this.

Since 1900, half of the world's forests have been destroyed.

Approximately 30% of the total land area of the Taranaki region is in indigenous forest, 15% of this is protected.



## Trees to prevent erosion.

Erosion is the loss of land from the actions of wind or water. Erosion is bad for the environment because it takes land away and sometimes washes soil into waterways, affecting the quality of the water.

There are some erosion problems in Taranaki which have come about because we often cut trees down before we realised their importance to the environment.

Some of our worst erosion occurs in hill country where trees have been cleared off very steep hills. Trees hold the soil together and soften the rain that falls.

Trees also take water from the soil and send it back to the atmosphere. When the trees were cut down and the land was grazed by animals the waterlogged soil often slipped away.

One way to improve the situation is to replant the trees and this is happening in the region, where landowners are wanting to do something positive for their land and the environment.



## Trees for habitat

Much of the original forest cover of New Zealand has been removed to convert land to other uses, harvest timber, or for firewood. Of course along with the forest, habitat for birds, insects, plants etc has been lost.

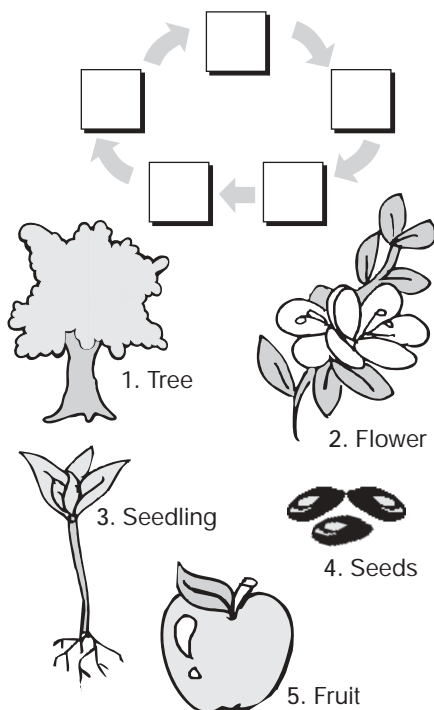
By planting trees we are increasing the amount of forest cover in the region and increasing the habitat for our indigenous animals. However, we are also increasing the habitat for introduced animal and plant pests such as possums, goats, stoats and old man's beard. We need to control them in both new and old forested areas.

# Junior Environmentalists' Page



## Reproduction

From the pictures below put the numbers in the correct box.



## Dictionary

Use your dictionary or the text on page 2 to find the meanings of these words.

- riparian
- erosion
- habitat
- atmosphere
- endemic
- indigenous
- environment
- global

## Identification

See if you can match the description to the tree, then write your answer in the box provided.

1. My droopy leaves are prickly to touch, and I can reach 50 metres high.



Pōhutukawa



Kauri



Mānuka



Rimu



Kōwhai

## Wordfind

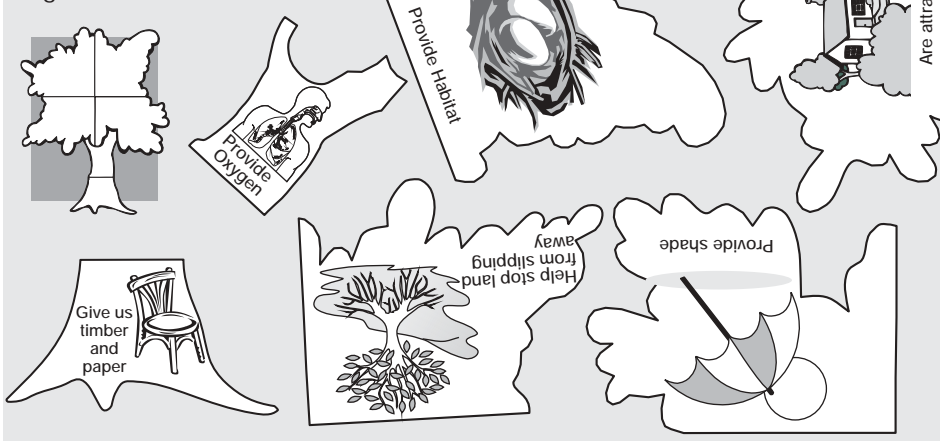
K A H I K A T E A A  
M A N U K A P K W P  
U A M K O W H A I U  
M A R A M A K N N A  
I H K A H U E A E K  
R O T I T I N M B U  
K A R U N O A K E O  
I W H I W N T W R K  
E O H A M K A U R I  
P T A W A H R O Y T

Here are 18 words written forward, backward, up, down and diagonally, see if you can find them.

Tōtara	Pine
Kōwhai	Nīkau
Wineberry	Rimu
Mahoe	Oak
Kāmahi	Miro
Kahikatea	Tawa
Pōhutukawa	Rātā
Tī kōuka	Kauri
Mānuka	Mataī

## Puzzle

Cut out the shapes and put them together to make a tree.



2. My name means yellow in Māori and birds love my nectar.
3. I have very small leaves and small white flowers. People use me for firewood, brooms and tea.
4. I have an enormous trunk, ideal for canoes and my gum was popular with early settlers.
5. I love to live near the beach and have brilliant red flowers at Christmas time.