

Property managers' session on recycling

Last term over twenty school property managers and Board of Trustees representatives attended a session at Inglewood Primary School to discuss recycling and waste management issues for their schools.

Gary Bedford (Taranaki Regional Council Scientist) explained the environmental and health hazards associated with incorrect incineration methods. One message was that all smoke is bad for people and the environment, especially smoke containing dioxins when food, plastics and other materials are burnt at the wrong temperature, as sometimes happens with school incinerators. Paul Hitchcock and Paul Coulton (Inglewood Primary School) spoke about establishing recycling systems to improve air quality at their school, composting, and removing their incinerator. Dave Elder (Waste Management NZ) outlined what his company could offer schools interested in recycling. Participants

left with information on reducing waste at schools. Schools who are interested in recycling at their school should contact Paul Radich.



Paul Hitchcock, Inglewood Primary School, explains the recycling system.

LAMPREY feature

While few people may have seen them, the lamprey or piharau is an important fish in our waterways.

The Lamprey (*Geotria australis*) is the most ancient of all fish found in our fresh waters. At first glance the lamprey appears eel-like but the seven gill openings and sucker-like mouth set lamprey apart from eels.

Lamprey live for several years at sea, where they use their sucker-like mouths to latch on to host fish and feed on their body fluids much like leeches.

It is known that lamprey migrate up many rivers in Taranaki, particularly in the larger streams and rivers, such as the Kaupokonui, Kapuni, Waiweranui, Waitotara, Waitara and Patea.



Lamprey

This migration is a major event for some Taranaki Maori who consider the piharau to be the ultimate delicacy.

Traditionally the piharau was caught in a whakaparu which is a weir made of stones or wood on the water's edge. The piharau being poor swimmers would swim along the slow flowing edges of a stream until they came to the whakaparu. They would swim along until they found a hole in the weir and then become trapped in a net or pot on the other side.

Biology Laboratory

Last year we had over 1300 visitors through our biology laboratory. The majority of these were school groups. The laboratory provides children with an opportunity to see fish they would not usually see. They also view marine creatures in a rock pool setting, learn about electric fishing and see invertebrates under a microscope. If you would like to visit the laboratory please contact Paul.



Mangatoki School children viewing native fish species at the Taranaki Regional Council Laboratory.

Estuaries Kit

The Estuaries kit, is available free of charge to all secondary schools in the region. The kit focuses on science, biology and geography and also has a section on Taranaki estuaries. Copies will be sent to all secondary schools in the region before the end of term one.

Bits'n'Pieces

Seaweeek '99, 13-21 March 1999

The theme for seaweeek '99 is *Treasures of the Coast Nga Taonga a Tangaroa*. This special week is run by MESA, (Marine Education Society of Aotearoa) to raise awareness of the marine environment. It is a good opportunity for us to think about why the marine environment is such a special place and how we can care for this area. The Taranaki Regional Council has co-sponsored a double page in *Starters and Strategies* on seaweeek related activities. Look out for this arriving in your school soon.

Websites

There are many fantastic web sites available on environmental topics. A few good ones include <http://www.epa.gov/OGWDW/kids/>. This is about water conservation. <http://www.getwise.org/> is also a good site about water and energy conservation. <http://www.teachingonline.org> The starters and strategies homepage also has many excellent environmental education ideas and information.

Natural hazards 5th form Geography

The Taranaki Regional Council is organising an inservice day for secondary school teachers focusing on North Taranaki coastal hazards. This will especially suit teachers of 5th form geography. Further details will be sent to HOD Geography at your school soon.

S.I.T.E. for all

If your school would like individual copies of S.I.T.E. for all teachers, please contact Paul Radich to organise this for the autumn issue of S.I.T.E.

Answers from page 4: Go Fish: 1=Bully(N), 2=Kokopu(N), 3=Perch(I), 4=Inanga(N), 5=Trout(I) A trip down a River: Irrigation-5, Industry taking & discharging-1, Recreation-2, Farm dairy discharge-6, Power generation-3, Town water supply-4.

NEXT S.I.T.E.

The next issue of S.I.T.E. will focus on the Civil Defence functions of the Taranaki Regional Council. Teaching young people to be prepared for an emergency is an important part of this function.

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TARANAKI REGIONAL COUNCIL
NEWSLETTER TO SCHOOLS

Greetings all

Welcome to S.I.T.E. (Schools in the Environment) for 1999 and a special welcome to teachers new to the region and the profession.

S.I.T.E. newsletter informs teachers in the Taranaki region on opportunities for environmental education. It also celebrates the happenings in environmental education with children out in our environment learning about our environment and doing something for our environment.

Recently the Ministry for the Environment produced and distributed *Learning to Care for Our Environment - Me Ako ki te Tiaki Taiao* a national strategy for environmental education. Also expect to see 'Guidelines for Environmental Education in Schools' arriving in your school before long.

While the advent of these documents may be met with a collective groan from the region's teachers, still coming to terms with the plethora of Ministry of Education documents thrust upon them in recent times, it really is nothing to be afraid of. Environmental Education is easily integrated into other subject areas. In fact many teachers may not realise they are already doing wonderful work in environmental education.

My aim for 1999 is to further develop environmental education in the region and help teachers as much as possible to meet associated curriculum objectives. Last year over 3500 children had direct contact with the Taranaki Regional Council through classroom visits, visits to the Taranaki Regional Council lab, field trips or in many cases all three. Many other teachers requested units of work and other information on environmental topics.

Please don't hesitate to contact me if you think that I may be able to help you. Best wishes for the 1999 school year. Naku noa

Paul Radich

S.I.T.E.

Schools in the Environment - Summer 1999 - No.8

Living with the River

a cross curricula resource



With the fine hot summer upon us, we become more aware of the precious natural resource that is our freshwater.

This is an ideal time of the year to get into the rivers and find out about the life within them, the different pressures on them and what we can do to keep them supporting life for future generations.

The unit of work *Living with the River Te Awa* is again available from the Taranaki Regional Council. This is a cross-curricula resource suitable for most school levels with information and activities for teachers to use with their classes.



Matiu Pahau, Maharatia Hura and Joseph Nahi of Marfell School proudly display the invertebrate sample they found in the Waingongoro River.



Children from Central School on their way to Te Wera Camp check the invertebrate life in the Patea River.

The Council's Information Officer is also available to visit classes and assist with field trips to suitable river sites (all equipment for field trips is provided). Classes may also visit the Taranaki Regional Council biology laboratory to view the display of native fish which inhabit our waterways.

Please contact Taranaki Regional Council Information Officer to receive the unit of work 'Living with the River - te Awa' and arrange a field trip.



Coastal Environment Studies

The unit of work *The Coast Te Takutai Moana* was popular with Taranaki teachers and children in the last term of '98. The study concentrates on the coast and examines the special nature of the Taranaki coast. Field trips to coastal sites can also be arranged, with equipment and information on marine life provided. The children have the opportunity to carry out some monitoring similar to that done by Taranaki Regional Council staff. This study also puts the rocky shore study into an environmental education context.



Andrew King and Joshua Gallichan of Mangorei School spot some marine life in the rock pools at Kawarao.

Water Pressure

Have you ever stopped to think about how important our rivers are and how much our activities impact on them? Let's follow the main river that runs through New Plymouth, the Waiwhakaiho River, and see what happens to the water as it flows from the mountain to the sea.

The headwaters of the Waiwhakaiho are near the summit of Mount Taranaki/Egmont. The water makes its way through the national park where its flow is increased by the many springs, small creeks and larger tributaries which join it. Once the river leaves the National Park (where it is very pure) the water is increasingly affected by people. It flows through farms where the water is taken for irrigating pasture and crops, cleaning farm dairies, and drinking water for animals. Treated waste water from dairy farms may also be put back into the river.

Further along some of the water is diverted to Lake Mangamahoe and used for electricity generation. Water is taken from the lake and treated by the New Plymouth District Council for water supply to the New Plymouth and Waitara area. The river flows between two quarries to the Meeting of the Waters, where the water from the power station rejoins the flow.

Along the way the river is used extensively for recreation, such as swimming, kayaking and fishing at various points. As the river flows through New Plymouth city, stormwater from various sources, including roads, streets and private properties enters the river.

Before flowing into the sea the river passes through an industrial area. Although these industries no longer take water from the Waiwhakaiho, stormwater and some treated washings from the industrial sites enter the river. The river ends its journey at the sea near Fitzroy beach.

We often take our rivers for granted, forgetting that they are essential for our quality of life. We must be careful not to treat them badly. Our rivers must be protected from activities such as dumping rubbish into or beside them, or allowing chemicals and other pollutants to flow into them. Cutting down the trees that provide shade and protection for rivers, allowing our stock to wander into them, breaking the banks and polluting the water with wastes, can also reduce the quality of the water. Remember that we share the river with other animals which rely on the cleanliness of the water in which they live!

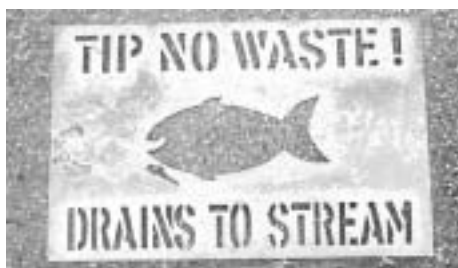


The lower Waiwhakaiho River as it flows through New Plymouth.

Hopefully, if people know more about how rivers work and why they are so important they will be more careful with them.

Dead fish don't lie!

You may have seen these signs painted on our streets. They remind people that stormwater drains are only for water which drains off our streets and roads when it rains. Pollutants such as chemicals, paint, carwash suds, and oil must never enter stormwater drains as they flow into our rivers and streams and out to the sea. If we put pollution into these drains we run the risk of killing the life in our waterways, such as invertebrates, eels, other fish, and generally downgrading our water quality. A lot of the pollution that enters our waterways is accidental, for example, oil or petrol that leaks from cars is washed into the drains when it rains. It is estimated that more oil enters the sea each year from stormwater drains than from oil spills at sea.



Signs painted on streets and roads to remind people not to tip waste into stormwater drains.

Don't waste water



Most of the time there is plenty of water available in the rivers for all the things we want it for. At other times, like this year's long dry summer, we need to be a little more thoughtful about how we use water. Rivers at this time of year are near their minimum flow.

If we all use our water wisely and don't waste it, there will be plenty for everyone. Everybody can conserve water resources, including domestic, agricultural and industrial users, hydro-electric power producers and consumers. Most of us, however, have the greatest influence as domestic users of water that has been treated by our district councils for domestic supply.

Most people use about 240 litres of water each day. Interestingly, only about 1% of this is used for drinking. Below is a table showing how most of us use our water. We can easily save water by doing a few simple things, such as taking shorter showers, turning the water off while we brush our teeth, fixing dripping taps, not running the water to rinse our dishes or wash vegetables, waiting until we have a full load before using our washing machine or dishwasher and not wasting water when irrigating the lawns or garden.



The ways we use water

1%	Drinking
1%	Hand basin
3%	Dishwasher
4%	Kitchen sink
8%	Running taps
10%	Shower
13%	Clothes washer
15%	Bath
20%	Toilet
25%	Outdoor usage

Junior Environmentalists Page



Go Fish



1.



2.



3.



4.



5.

Put the names of these fish on the correct lines above: Inanga, Perch, Kokopu, Bully, Trout. In the box put 'I' for introduced or 'N' for native fish.

Environmental Word Find

See if you can find the following words

- environment
- recreation
- tangaroa
- river
- sea
- air
- plants
- animals
- resource
- natural
- freshwater
- kai
- land
- people
- wai
- hau
- kaitiaki
- tane
- coast
- awa
- tangata
- whenua
- moana

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

What goes where?

On the drawing:

shade liquid that should go into stormwater blue

shade sewage green



A trip down a River

- ___ Irrigation
- ___ Industry taking & discharging
- ___ Recreation
- ___ Farm dairy discharge
- ___ Power generation
- ___ Town water supply

Match the water user activity with the correct numbered dot

Seaweek Competition

The theme for Seaweek '99 is 'Treasures of the Coast' Nga Taonga a Tangaroa.

In 20 words or less say what you like about the Taranaki coast or like doing at the coast.

Major Prize
A Tour of the Sugar Loaf Islands on Chaddy's Charters for a family of four (plus consolation prizes)

Open to all school ages

Post, fax or email your entry to the Taranaki Regional Council by Friday 26th March 1999 (see details on back page)