

Te Kura o Nga Ruahine Rangī pupils had a great time at their camp at Te Wera in November. One of their many activities was a stream study which involved all students at the school and a good number of parents. The behaviour of all students was exemplary and the manner in which they interacted with each other was first class. Many students expressed surprise at their ability to correctly identify the wide range of invertebrates they found in the water. Everyone enjoyed the lovely morning tea that followed the study. Thank you Te Kura o Nga Ruahine Rangī.



## TRC Environmental Awards - 2011

Now is the time for you to nominate your school, a class or a group for a Taranaki Regional Council environmental award. Last year Ahititi School, St John Bosco School and Frankleigh Kindergarten were granted awards in recognition of their outstanding environmental programmes. So if you have been busy tree planting, setting up waste minimisation systems, adopting rivers, wetlands or beaches, writing environmental books, being energy efficient etc you could qualify for an award. Nominations close on March 31, with presentations made at a time that suits the winning recipients. More details and a nomination form are on the Council website [www.trc.govt.nz](http://www.trc.govt.nz) or contact Rusty Ritchie, Senior Information Officer ph (06) 765 7127 or fax (06) 765 5097

## How clear is the water?



As part of the Stratford High School Year 10 Social Studies programme, the students checked out the water quality of the Patea river near to the scout den in Stratford. Many students commented that the water level was the lowest they had ever seen in November and they were right.

## Omata hits the airwaves



Omata School pupils talk to a More FM radio announcer as part of their Taranaki Blowout programme. The pupils competently answered some penetrating questions regarding their knowledge of the mountain, their preparedness for an eruption and its possible effect on a rural community. Thank you Omata School for allowing your students to participate in this activity.

## Bits 'n' Pieces

### Professional development sessions - 2011

**Teachers workshop 1A - Rocky shore**  
Wednesday 16 February 4.00pm - 5.30pm  
Bayly Rd Lighthouse, Rahotu

**Teachers workshop 1B - Rocky shore**  
Thursday 17 February 4.00pm - 5.30pm  
Kawaroa reef, New Plymouth

**Teachers workshop 2 - Wetland areas**  
Thursday 5 May 12.30pm - 4.30pm  
Devon Intermediate, Peringa Park wetlands and Umutekai (New Plymouth)

**Teachers workshop 3 - Biodiversity**  
Thursday 4 August 1.00pm - 4.30pm  
Taranaki Regional Council, Stratford

**Teachers workshop 4 - Mt Taranaki**  
Thursday 24 November- 10.00am - 3.30pm  
Konini Lodge (Dawson Falls)

### Public education day

**Sunday 6 February 2011 - Waitangi Day**  
10.30am - 2.00pm

#### Explore the streams at Pukeiti

Discover what's living under the rocks in the river with the council team. Bring a picnic lunch, sun block, hat and old shoes or gumboots. We will be using parts of the SHMAK (Stream Health Management and Assessment Kit) to help people gain a better understanding of how we assess stream health. Sure to be fun for all.



### Answers from page 3

#### Code Cracking

1. Wetlands act like giant sponges.
2. Wetlands are great habitats for many plants and animals.
3. Most of our wetlands were drained for many reasons.

#### Multi choice answers

1.C 2.C 3.A 4.C 5.A 6.D 7.A 8.B 9.D 10.A

#### Photo Match-up

1. Gecko
2. Blue Duck
3. Tui
4. Water boatman
5. Frog
6. Damselfly
7. Eel
8. Mayfly nymph
9. Backswimmer
10. Dragonfly
11. Pukeko
12. Shag

For support with environmental education contact:

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[www.trc.govt.nz](http://www.trc.govt.nz)



# Site

Schools in the environment newsletter

## Welcome

A warm welcome back to the new school year. With the prospect of warm, settled weather, there will be opportunities for your students to enjoy the wonderful environment we are privileged to live in. I am aware of the challenges teachers face when providing outdoor education programmes but there is no doubt that well planned outdoor activities have huge educational benefits for your students. Traditionally, term one seems to be the most popular for school visits to coastal areas. However, support from me has to be on a first in, first served basis. I may not always be available to accompany you on a field trip but I usually can offer help in some other way such as lending you a set of field trip equipment (trays, sieves, worksheets, identification pamphlets etc) or taking pre-field trip class lessons.

The Civil Defence Emergency Management programme titled 'Taranaki Blowout' kept me particularly busy in the latter half of last year. We hear plenty about the 'crowded curriculum', so we were greatly encouraged by the response from schools towards it. Mind you, after taking ten staff meetings and over sixty classroom lessons on the topic, I began to think I was close to blowing up myself but it was all well worth it. The Taranaki Blowout website [www.taranakiblowout.org](http://www.taranakiblowout.org) will be maintained and teachers are very welcome to use it at any time. We will continue to support teachers implementing any aspect of the 'What's the Plan Stan?' Civil Defence Emergency Management programme. Congratulations to all teachers who have used this resource already, by all accounts its usage in Taranaki schools is well ahead of most other regions.

There are a number of changes to the Youth Environment forum this year as the Sir Peter Blake Trust has taken over the running of it from the Ministry for the Environment. The Trust will now be selecting students via an application form which can be downloaded from their website [sirpeterblaketrust.org/programmes](http://sirpeterblaketrust.org/programmes). See the insert for further information.

This year, we will be involved with a separate essay competition in conjunction with Puke Ariki's 'What if?' programme (see insert).

Congratulations to the Wild NZ company from New Plymouth Girls High School which won the Taranaki Regional Council Environmental Award at last year's Young Enterprise Scheme. Best of luck to all those who are entering this year.

Best wishes for a great year.  
**Kevin Archer**

## Wonderful WETLANDS



Wetland areas are the focus of this issue - why their numbers have diminished, why they are so important and how they can be used as study resources.

# Seaweek

26 February - 6 March 2011

Seaweek is an annual celebration of what the sea means to us as New Zealanders. It aims to increase our knowledge and appreciation of the special marine environment we have virtually at our front door. The theme for this year is 'Back to the Future' - the culture, history and traditions of the sea. Kia kaha tangata moana.

Many local organizations which have links to the sea will coordinate activities or events around Seaweek. These and other nationwide happenings can be found at [www.seaweek.org.nz](http://www.seaweek.org.nz)

As part of its support of Seaweek, the Council runs two rocky shore teacher workshops. Many schools combine a rocky shore study as part of their Seaweek programmes.







## What are wetlands?

Wetlands are areas where water is the key factor influencing the environment and the plant and animal life living in that habitat. They occur where the water table is on or near to the surface of the land, either temporarily or permanently. Wetlands come in many forms such as lakes, ponds, swamps, bogs, estuaries, mudflats or lagoons. They are a rich, unique habitat for wildlife and as such provide a great study resource for students who can learn about topics such as the water cycle, food chains, the importance of habitat, human impacts and how to get involved in conservation activities.



## What makes wetlands so important?

Simply, they contain water which is the basis of all life in this world. Water is a home for thousands of plants and animals and it also transports minerals and nutrients that feed the plants and animals. Water is vital to human survival and clean water is essential for humans to enjoy a high quality of life. Wetlands play a huge part in this as they act as a natural filter so the water leaving the wetland or entering the ground is much cleaner than it was on its arrival. Water travelling through the wetland is slowed down by the vegetation and the suspended solids in the water are trapped in the stems and root masses. Wetlands provide habitats for countless species of plants and animals. They provide shelter and protection, as well as food, water, breeding grounds, nesting and nursery sites for many species. In some countries, including New Zealand, they provide stopovers for migrating birds.

## Historical Importance to Maori

Early Maori greatly valued wetland areas for both their plant and animal resources. Flax was probably the greatest plant resource and was used in countless ways including the production of mats, clothing, kits and ropes. Raupo was used for thatching and dried moss was used for bedding. Other plants were used as medicines or dyes. Eels, other fish and birds provided a valuable food source. Many birds provided feathers to adorn cloaks and other garments. In addition, wetlands provided valuable waterways which were used as an important means of reaching places.



## Flood control

Wetlands act like giant sponges, storing excess water during heavy rains and releasing it slowly, thereby preventing flooding. As a result, areas downstream of wetlands still receive water when rainfall levels are low. Wetlands help stabilize shorelines and river banks.

## What has happened to our natural wetland areas?

Less than ten per cent of our wetlands remain because they have been drained for conversion to farmland or urban development such as housing, schools, roads, airports and other developments. In addition, human activities such as sand and gravel extraction, reclamation of lake and river margins, plant and animal pest invasion, stock grazing near or in the wetlands and careless recreation activities have also contributed to the disruption of balanced wetland ecosystems.

## The Good News

In New Zealand, many people now realise that wetlands of any type play an important role in our nation's biodiversity. They are an important resource that needs protecting and many landowners have now opted to return land previously used for agricultural purposes back to its original wetland state.



## Council assistance

Wetlands unit. This can be downloaded from our website [ww.trc.govt.nz](http://ww.trc.govt.nz) or contact Kevin for a hard copy.

- Wetland resource kit. Contact Kevin for one of these.
- Request a visit from Kevin to your class. He will talk to the students about wetlands in general and take them through a PowerPoint presentation. On a separate visit he can introduce them to an environmental wetland game.
- Wetlands field trip. There are a number of sites to visit including some schools which have developed wetlands on their grounds. Contact Kevin for details.



## Recreation

Wetlands offer a variety of recreation activities including boating, fishing, photography, whitebaiting, duckshooting, kayaking, walking and swimming.



## Photo match up

Write in the names to match the photo of the wetland animal pictured. Frog, Damselfly, Tui, Dragonfly, Water boatman, Backswimmer, Eel, Blue duck, Mayfly nymph, Shag, Pukeko, Gecko.



1



2



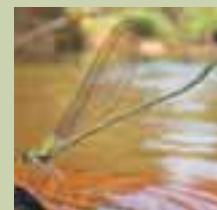
3



4



5



6



7



8



9



10



11



12

## Word find

See if you can find the words listed below.

Brown duck Pukeko  
Dragonfly Tui  
Flax Frog  
Mayfly Mudfish  
Raupo Shag  
Eel  
Water Boatman  
Cabbage Tree  
Damselfly  
Fernbird  
Gecko

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

## Wetland quiz

### 1. A wetland is an area of land that

- A. is shaped like a heart
- B. is always circular in shape
- C. has many possible shapes
- D. is shaped like an oblong.

### 2. Which of these is not generally regarded as a wetland bird?

- A. a shag (kawau)
- B. a grey duck (parera)
- C. an ostrich
- D. a swamp hen (pukeko).

### 3. Which of these is not regarded as a wetland recreational activity?

- A. skydiving
- B. bird watching
- C. tramping
- D. kayaking

### 4. What percentage of New Zealand's original wetland areas remain?

- A. 100%
- B. 80%
- C. less than 10%
- D. about 50%

### 5. Which of these is not a wetland area

- A. a desert
- B. an estuary
- C. a pond
- D. an oasis

### 6. Which of these is not a wetland plant?

- A. A cabbage tree (ti kouka)
- B. flax (harakeke)
- C. bulrush (raupo)
- D. cactus

### 7. Most of New Zealand's wetlands were removed because

- A. they were regarded by many as waste land
- B. the early settlers had lots of energy
- C. early New Zealanders wanted New Zealand to look more like Australia
- D. they weren't regarded as great swimming areas.

### 8. Which of these is not the name of a song? Clue - The correct answer is the letter that is not correct for any of the other questions.

- A. The Demise of wetlands
- B. Wetlands are forever
- C. Wetlands song
- D. Treatment Wetlands

### 9. The Buffer Zone is the strip of land between the edge of a wetland and the adjacent dry land. They are important because they

- A. reduce the speed of run-off from surrounding land
- B. reduce invasion of the wetlands by weeds
- C. provide corridors for wetland birds
- D. All of A, B and C

### 10. A habitat is another name for

- A. a natural home for a plant or an animal
- B. something that is repeated regularly
- C. something that only lives in a wetland area
- D. a place where every animal species is known to live.



## Code cracker

See if you can crack the codes then decipher the wetland messages.

1. XFUKBOET BDU MJLF HJBOU TQPOHFT.

2. 23,5,20,12,1,14,4,19 1,18,5 7,18,5,1,20 8,1,2,9,20,1, 20,19

6,15,18 13,1,14,25 16,12,1,14,20,19 1,14,4 1,14,9,13,1,12,19.

3. NLHG LU LFI DVGOZMWH DVIV WIZRMVW ULI NZMB IVZHLNH.