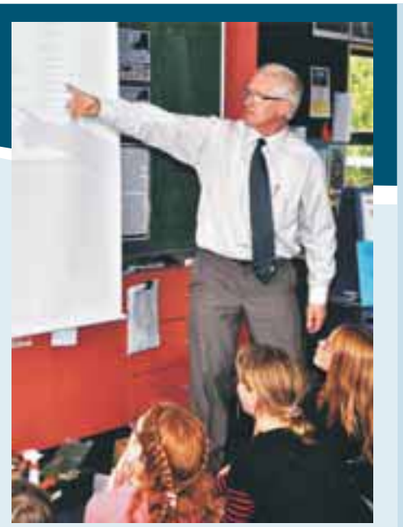
OUT ● F site — Omata classes study Taranaki Blowout

Senior pupils at Omata School are all concentration as Education Officer Kevin Archer makes a point to them about the Taranaki Blowout website, whilst the younger pupils are learning about the importance of having 'canned foods' in their Home Emergency Kits.



Inglewood High School

compares the Waiwhakaiho River and the Waionganaiti River

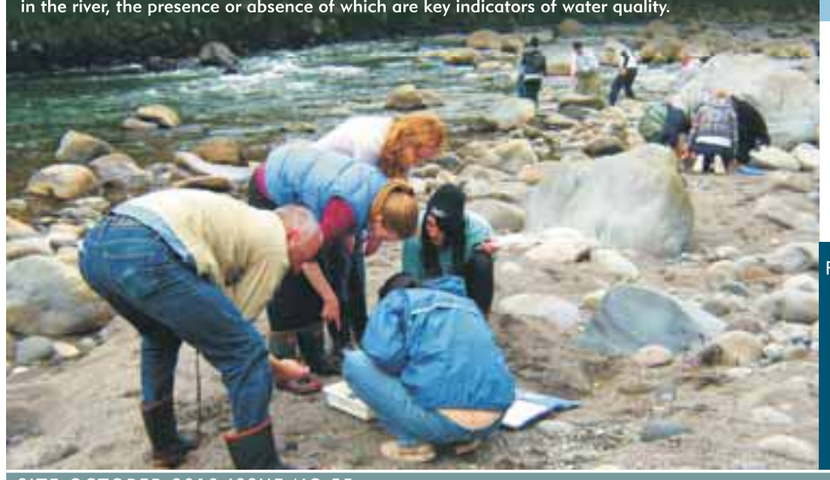
Year 12 students at Inglewood High recently studied the water quality in the Waiwhakaiho River at two different sites on the river's course. They were able to compare the water quality at each site and draw some conclusions as to why the results were so different. Earlier in the term, the same group had studied the water quality of their local stream, the Waionganaiti and the data found there was used to compare the water quality of the two rivers.

Environmental Awards - 2011

It is not too early for you to consider a nomination for a Taranaki Regional Council Environmental award. Nominations for the 2011 Environmental Award round can be made any time up until 31 March 2011. Previous winners from Taranaki schools have been chosen for activities as diverse as planting native trees, achieving zero waste, adopting rivers or beaches, reduction in energy usage and writing environmental books. To be granted an award, we need to see evidence that a project is sustainable (ie not just reliant on the enthusiasm of one person). Activities can involve the whole school, a class or syndicate or an interest group within a school. For further information please email Kevin at kevin.archer@trc.govt.nz

Youth Environment Jam at Vertical Horizons

Senior students from many Taranaki secondary schools spent an action-packed couple of days at Vertical Horizons near Inglewood in August. Despite some uncooperative weather, the students were involved in activities such as wild harvesting, making hinaki, tangata whenua sessions, conservation and water quality in the Manganui River near Everett Park. They measured the clarity and temperature of the water and successfully identified many of the invertebrates found in the river, the presence or absence of which are key indicators of water quality.



Bits 'n' Pieces

Professional Development

Water quality of the Patea River and native freshwater fish - Thursday 18 November
See the flyer in this newsletter for details.

Professional Development – 2011

The dates and times for the four professional development sessions for 2011 are now on the Council website. We hope there is at least one session there that appeals to you.

Staff or Syndicate Meetings

If you would like to know more about what the Council offers in support of your environmental education programmes, please contact Kevin at the Council ph 06 765 7127 or email kevin.archer@trc.govt.nz. He is happy to talk to teachers individually, in syndicate groups, to staff or cluster meetings and promises to take no more than thirty minutes of your time.

Youth Environment Forum 2011

Each year the Council selects via an environmental essay competition two Y12 or Y13 secondary students to represent our region at the Sir Peter Blake Youth Environment forum held annually in Wellington in the April school holidays. The students are guaranteed to have an unforgettable experience with all travel, food and accommodation costs covered. In addition, the Council awards two $200 vouchers for the runners-up. Look for details in the first issue of SITE next year and please bring this competition to the notice of your 2011 Year 12 and Year 13 students.

Puke Ariki

Aotea Utanganui Museum

The South Taranaki Museum in Patea operates a very educational, hands-on programme which caters for students at all levels. Information regarding upcoming programmes can be found on **http://tinyurl.com/36a6otr**

Email: rob.groat@stdc.govt.nz

Phone: Rob 0800 111 323

Answers from page 3

Multi choice quiz: 1.D 2.C 3.C 4.A 5.D 6.A 7.C 8.D 9.C 10.B

Complete the Paragraph: Fish, time, waikaka, wetlands, summer, ground, drains, stream, mudfish, clay, rain, water, settlers, potato

Fishy phrases: 1.H 2.F 3.A 4.I 5.J 6.C 7.D 8.E 9.G 10.B

For support with environmental education contact:
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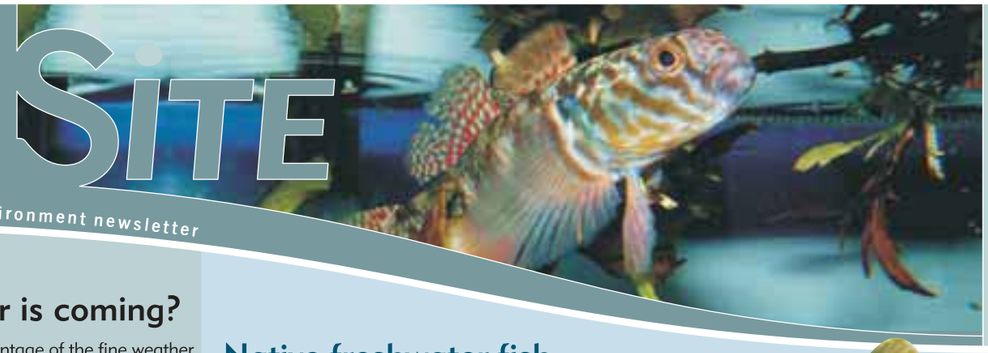
TARANAKI REGIONAL COUNCIL

SITE

Schools in the environment newsletter

SITE OCTOBER 2010 ISSUE NO.55



Fine weather is coming?

I hope you all took advantage of the fine weather in the second week of the holidays, it really did seem to take a long time to arrive. No doubt you are all looking forward to plenty of sunshine in the final term, but as we know looking forward to it is one thing, but getting it is quite another.

A big thank you to the 55 schools that have been involved to some degree with Taranaki Blowout. We are delighted that so many teachers enrolled their classes and/or encouraged their pupils to enrol as individuals. Hopefully many of you have followed the Taranaki Blowout scenario on the website www.taranakiblowout.org over the school holidays and into the 'eruption phase'. Remember the very important 'recovery phase' is happening right now. If you want to schedule a visit from me before Taranaki Blowout finishes, please email me (kevin.archer@trc.govt.nz). I can assure you that emergency preparedness education won't end when Taranaki Blowout finishes, I am always happy to work with you and your classes on any material from the teaching resource *What's the Plan Stan?*

No doubt your planning for 2011 is in full swing so it is important to remind you that Council support for your programmes is based on a first-in-first served basis. Many schools include rocky shore, river and wetlands studies in their first term programmes and should you want support from me, you need to book as early as possbile.

Thanks to those schools that were represented at our Biodiversity professional development session in August. From the feedback received, those who attended not only enjoyed their afternoon but also made contact with people involved in other biodiversity programmes. The group learned a great deal about our region's biodiversity issues. I am aware of the difficulties schools face when trying to have representation at these sessions. Some schools, when unable to send a teacher, have been represented by receptionists, librarians, teacher aids and parents which is a great way of dealing with the problem.

I continue to be amazed at how teachers handle an increasingly complex and demanding job with such professionalism, kindness, determination and patience. I wish you all a happy and productive fourth term.

Regards to all.
Kevin Archer

Native freshwater fish

This issue of SITE features native freshwater fish many of which are constantly under pressure on a number of fronts. With the exceptions of eels and whitebait, our knowledge of many of our native freshwater fish is often limited. It is up to all of us to give our native freshwater fish species the best chance of long-term survival. Many species can be viewed at the Council's biolaboratory and a visit there is always popular with both the young and the not so young.

THE FONTERRA Taranaki Science and Technology Fair 2010

The Fonterra Taranaki Science and Technology Fair show-cased the extraordinary range of talents possessed by local students. Once again the Taranaki Regional Council sponsored prizes for displays that best exhibit an aspect of environmental science. Prize winners were:

LEVEL - YEARS 11-13

1st Luke Duthie (Francis Douglas Memorial College)
Shrimp turbulence investigation

2nd Maria Fernando (Sacred Heart Girls' College)
Pollution in the park

LEVEL - YEARS 9-10

1st Natalie Reason (New Plymouth Girls' High School)
Constructed wetlands and perpetual motion

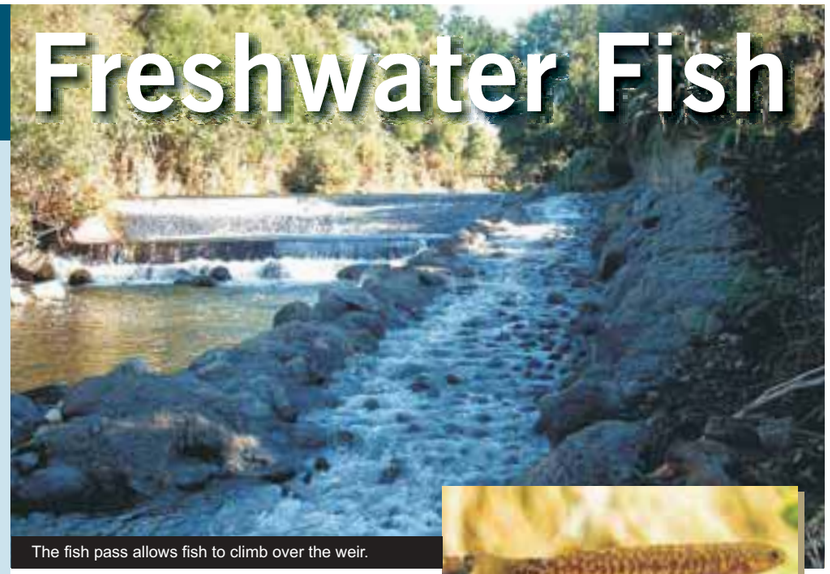
2nd Shan Hickey (Opunake High School)
Nitrogen levels

LEVEL - YEARS 7-8

1st Zoe Holyoake (Highlands Intermediate)
Removing oil from water

2nd Grady Barker (Highlands Intermediate)
Conifer Killer

Native Freshwater Fish



The fish pass allows fish to climb over the weir.

New Zealand is home to a surprisingly varied assortment of native fish species. Within the rivers and streams of Taranaki it is possible to find eels, bullies, whitebait, torrentfish, smelt, mullet, flounder, lamprey and others. Within each species are various sub-species. For example, there are up to seven species of bully, three types of eel and over twenty members of the Galaxidae family. In addition many people mistakenly think the term 'whitebait' refers to a species of fish but in reality whitebait are the juvenile of at least six different native freshwater fish species.

Endangered native freshwater fish

Species such as the Giant Kokopu, Shortjawed Kokopu, Canterbury Mudfish and the Black Mudfish are all classed as 'endangered' for a variety of reasons. Activities such as habitat destruction, in particular clearance of wetland areas and native forests, water abstraction, man-made barriers, changes to water courses, competition from introduced fish, reduced water quality and climatic changes have all contributed to their numbers being so low they are now classed as 'endangered'. Unfortunately one species, the Grayling, is now extinct, due to some of the reasons listed above, with 'over-fishing' also being a contributing factor.

Life cycles

Over 60% of our native freshwater fish are diadromous - meaning they migrate to the sea at some stage in their life-cycle either as adults or juveniles. In the past, dams, weirs or culverts have sometimes prevented them from moving up or down a stream. Thankfully we now have a large number of 'fish passes' especially built to allow fish to move past the barriers and regulations have required some culverts or weirs to be removed, replaced or modified to give the fish a better chance of reaching their desired habitats.

A bucket of elver ready to be transferred upstream past the Patea Dam.

Why do we know so little about many of our native freshwater fish?

Most of our native freshwater fish are nocturnal, hence we seldom see them during the day. Many use camouflage as protection and are very difficult to see. With the obvious exception of eels, many species are quite small. Lots of them live a solitary existence, happy in their own company. Very few of them are targeted for fishing with the obvious exception of whitebait and to a lesser extent eels.

How the Council can support your native freshwater fish study.

We host visits to the Council laboratory to view some of the freshwater fish on display and to listen to a talk about our native fish. Contact Kevin to arrange this. During a class visit Kevin can talk on any of the following topics.

- Why man-made changes to habitats have caused some of our native freshwater fish to become 'endangered' and in the case of the Grayling to become extinct.
- How we can protect and enhance habitats for native freshwater fish.
- Why introduced fish such as koi carp, mosquito fish, catfish, rudd and others have become pests and have a detrimental effect on the habitats and numbers of many of our native freshwater fish.
- Eels - their lifecycles, their value as a fishing resource, their importance to early Maori, their declining numbers etc.

More material on native freshwater fish is in SITE numbers 2,14,19,21,22,24,28,29,32,35,43 and 52. All can be downloaded from our website **www.trc.govt.nz.** The Council has a set of six Field Guides to New Zealand Freshwater Fish by R.M. McDowall. This is an excellent resource and would be ideal for a small group to use for reference purposes.

Koaro *(Galaxias brevipinnis)*

Brown mudfish *(Neochanna apoda)*

Short-jawed kokopu *(Galaxias postvectis)*

Redfin bully *(Gobiomorphus huttoni)*

Giant kokopu *(Galaxias argenteus)*

Inanga *(Galaxias maculatus)*

Junior Environmentalists Page

The Goodies and the Baddies

In the pictures below there are goodies and baddies. Can you work out which ones fit into each category.

☐ Smelt

☐ Perch

☐ Banded kokopu

☐ Koi carp

☐ Lamprey

☐ Torrentfish

☐ Rudd

Freshwater fish quiz

1. A grey mullet is
A. a native fish found only on Stewart Island
B. an introduced fish regarded as a pest
C. a popular haircut for older gentlemen
D. a marine wanderer found mainly in the top half of the North Island

2. Long-finned eels
A. are only found in Finland
B. only live in long, fast flowing rivers South Island rivers
C. are sometimes called 'yellowbellies'
D. are very poor climbers in streams and rivers

3. Brown trout
A. are native to New Zealand
B. are the smallest trout species in the world
C. are not a New Zealand native freshwater fish
D. are not regarded as a good fish to catch

4. Which of these is not a native freshwater fish?
A. Snapper
B. Banded kokopu
C. Common Smelt
D. Black Mudfish

5. What percentage of our native freshwater fish spend some part of their lives at sea?
A. less than 10 %
B. between 10% and 30%
C. between 30% and 60%
D. over 60%

6. Which of the following native freshwater fish is extinct?
A. Grayling
B. Canterbury mudfish
C. Koaro
D. Inanga

7. Which of these species is not classed as a whitebait when it is young?
A. Inanga
B. Banded Kokopu.
C. Atlantic Salmon
D. Koaro

8. A fish, classed as being a marine wanderer is one that
A. is always trying to leave the sea because it is frightened of being eaten
B. is often seen heading up waterfalls
C. eats seaweed as its main food source
D. spends most of its life in the sea but also small amounts of time in freshwater

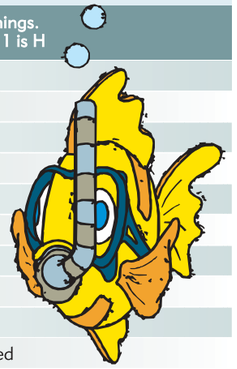
9. A lamprey is
A. a native fish that glows at night
B. a native fish that likes lives in family groups
C. often mistakenly thought of as belonging to the eel family
D. a fish that looks like a crayfish

10. In New Zealand a fish is classed as being introduced if
A. it is in low numbers
B. it was brought here by people
C. it is a really good swimmer
D. it is a friendly type of fish

Fishy phrases

See if you can link the fishy phrase with their meanings. The first one is done for you. For example number 1 is H

1	Cry stinking fish	A	Be seasick
2	A red herring	B	Very good swimmer
3	Feed the fish	C	A person who sells fish
4	A fish out of water	D	Lots of choices still to come
5	Sounds a bit fishy	E	A real mix up or series of mistakes
6	Fishmonger	F	To deliberately divert attention
7	Plenty of fish in the sea	G	Open-meshed fabric
8	A pretty kettle of fish	H	Disparage one's efforts
9	Fishnet	I	A misfit
10	Swims like a fish	J	Something that might be exaggerated



Complete the paragraph

Use the words below to fill in the gaps

Wetlands, fish, potato, drains, stream, time, clay mudfish, ground, summer, water, rain, settlers, waikaka

Few people know that one kind of ..... in New Zealand can live out of water for a long ..... The mudfish, known to Maori as ..... or hauhau, is specially adapted to living in ..... that dry up during the hot, dry ..... days. They can live in damp ..... in forests or in clogged farm ..... well away from any ..... or river. When water levels fall, ... hollow out a small cavity in a ..... bank. There they lie quietly until the next ..... brings ..... flowing into the drain or pool again. Early New Zealand ..... sometimes even dug mudfish out of their damp ..... gardens. Maybe these were New Zealand's first fish and chips!!