

These St John Bosco pupils and parents are getting a great view of the Peringa Park wetlands during a recent tour there. The school has adopted the wetlands as an area of great interest to the community. Already students have been involved in clearing the area and planting suitable trees. Future activities include further plantings, some pest plant and animal removal, studying the water quality and possibly naming tree species. The school is to be congratulated for its efforts.



Brilliant wetland models

Matthew Allen and Maaike Young, Year 5 pupils at St John Bosco with their models of the Peringa Park wetland. The class, under the guidance of teacher Brenda Wright, produced models or PowerPoint presentations as methods of recording their knowledge from their recent study. All presentations were of a high standard, many exceptionally so and clearly reflected the students and the school's great interest in this important area.



Sacred Heart visits the Council

Council officer's Rusty Ritchie and Kerry Matthews talk to Year 8 Sacred Heart pupils who visited the Council to check out the Council's biolaboratory and pest management depots. A third activity for the students was a Council overview in the display room. From what we were told the girls thoroughly enjoyed their visit.

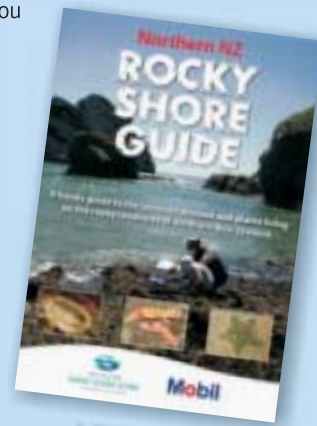


Professional Development 2010

Water quality in the Kaupokonui stream. See the flyer in this newsletter for details.

Northern NZ Rocky Shore Guide

This is a handy guide to common plants and animals living on the rocky seashores of northern New Zealand. We have been using the guides as part of our rocky shore resource kits and they are proving to be invaluable. Our stocks are limited but we can supply each school with one on request. Contact Kevin Archer if you would like a copy.



Essay Competition

In addition to the two winners mentioned on the front page, the Council awarded runners-up prizes of \$200 to Daniel Phipps of Francis Douglas Memorial College and Talissa Squire from New Plymouth Girls' High School. Congratulations to both students.

Seaweed Photo Competition

Many thanks to the students who submitted photos in the Seaweed photo competition, the prizes for which are sponsored by the Council. Special congratulations go to Kameron McMichael from Devon Intermediate whose photo of a river and beach scene not only won first prize in the Year 7 and 8 competition, but also won first prize in the People's Choice Competition.

Answers from page 3

River words and their meanings: 1.E 2.F 3.I 4.J 5.A 6.H 7.B 8.G 9.C 10.D

Longest rivers The lengths of the rivers and their islands are as follows: Waikato (425km-North), Clutha (322km-South), Whanganui (290km-North), Taieri (288km-South), Rangitikei (241km-North), Maitai (240km-South), Waiau (Southland) (217km-South), Clarence (209km-South), Waitaki (209km-South), Oreti (203km-South).

Highest waterfalls - heights (in metres) are in brackets Sutherland (580), Shirley (365), Stirling (164), Bowen (160);

The eel paragraph Cycle, story, fish, journeys, respect, distances, phenomenal, navigate, advertising, promote;

Go Fish 1. Bully N 2. Kokopu N 3. Perch I 4. Inanga N 5. Trout I

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SITE

Schools in the environment newsletter

Winter awaits

Welcome back to the second term which surely can't fly past as fast as the first term. Favourable weather meant most of your planned environmental programmes supported by me, were not affected by the weather. Hopefully this situation will continue into this term.

Unfortunately, last term there were some programmes I couldn't support owing to a clash of dates, unsuitable tides or other reasons. As mentioned in previous SITE newsletters, the greater notice I receive, the more likely it is that I will be able to help. It may surprise you to know that I have already received requests for support, on specific dates, from three schools for activities next year. Our policy of first in - first served will remain and is the fairest for all.

It is pleasing to note that the number of schools using our equipment continues to grow. A recent addition to our rock pool study resources is a Northern NZ Rocky Shore Guide (photo on back page). Feedback suggests the guide is a definite help to those wanting to correctly identify many of the common plants and animals that live on our rocky seashores. Please contact me if you think we have any resources that could benefit your programmes.

Many thanks to the Year 12 and Year 13 students who entered the environmental essay competition. Two students were selected as the region's delegates at the Sir Peter Blake Environmental Forum in Wellington (see photo). In addition, the two runners-up received \$200 to spend on educational material. Thanks to those teachers who encouraged their students to take part.

We conducted two successful professional development sessions in term one, both focusing on rock pools. This term's session will be held on Thursday 6 May at Dawson Falls and in Kaponga and will show how water quality changes as a river runs its course and how we use aquatic invertebrates to assess it. Registration can be made by email or through our website www.trc.govt.nz/teacher-workshops.

Best wishes for a successful term everyone.

Regards to all,
Kevin Archer

Our rivers and streams

This issue of SITE looks closely at the nature of our Taranaki streams and rivers and why they are such a valuable natural resource to our region.



Sir Peter Blake Environmental Forum

Taranaki Regional Council Chairman David MacLeod with the two winners of the environmental essay competition. Luke Duthie (Francis Douglas Memorial College) and Sarah Harris (New Plymouth Girls' High School). Luke and Sarah represented our region at the seventh Sir Peter Blake Youth environment forum held recently in Wellington. During the forum, they were involved in team environmental projects which were presented to parliamentary officials at the end of the forum. In addition the students visited places of interest such as Te Papa and the Karori Bird Sanctuary, heard a selection of interesting environmental speakers and met a number of like-minded young people. A memorable experience for all involved.

Oakura School studies its river

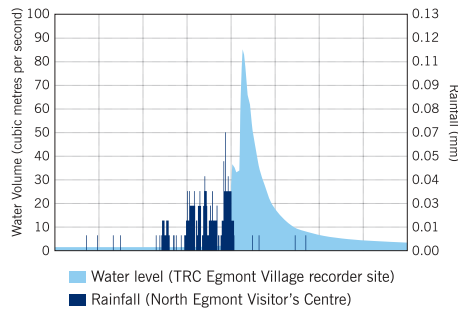
Two Oakura school pupils and a parent make good use of the bugbox identification guide and associated identification sheet during one the school's river lessons in February. Five of the school's senior syndicate classes looked at the health of the Oakura River by focusing on the aquatic invertebrates living in it, its water clarity, temperature and riverside vegetation. The school has plans to do further study on the river later in the year.



The Rise and Fall of Taranaki rivers

The great majority of our rivers have their source (start) on Mt Taranaki. Not surprisingly there is a direct correlation between rainfall on the mountain and water levels of the rivers and streams that flow from it. This can easily be seen in the graph below which shows water volume of the Waiwhakaiho River and rainfall at the North Egmont Visitor's Centre over the same period. As the river volume graph shows our rivers can rise and fall very sharply following heavy rainfall on the mountain.

The effects of rainfall on the Waiwhakaiho River
(Period: 24 hours)



How is the data gathered?

Rainfall data is automatically sent from remote monitoring sites to a Council computer database every 30 minutes. The latest half hourly and hourly data is analysed and published on our website www.trc.govt.nz at approximately 15 and 45 minutes past each hour.

Similarly, river levels and river flow data is automatically sent to the Council's computer database. Data is analysed every two hours and is published on the graphs within 10 minutes of downloading. Other environmental data is also displayed.



Water plunging down Dawson Falls on Mt Taranaki.



Are our region's rivers and streams fed only by rainwater on the mountain?

The answer to that question is No, on two counts. Firstly snow and ice feed water into our mountain streams and rivers. In addition, beneath the surface of the mountain, huge stores of water called aquifers release water into our streams in various volumes. This is why streams continue to flow when it's not raining.

How are our rivers different to rivers in other regions?

Most of our rivers are comparatively short and narrow in comparison to rivers in other regions. Many are relatively shallow, but as mentioned they can experience rapid rises and falls. Many of our native freshwater fish live in them. Some provide anglers with excellent trout fishing whilst others provide excellent whitebaiting opportunities. Thankfully, pest fish are not the problem here as they are in other areas. People use our rivers for a wide range of activities such as swimming and kayaking.

Human impacts of water quality

As a river or stream makes its way down the mountain, its flow is increased by the many springs, creeks and tributaries which join it. The mountain water is very pure but as it flows to the coast, its quality can be affected by changes in climate, geology and vegetation and by human activities. It flows through farms where water can be used for many activities including irrigation and cleaning farm dairies, as well as providing drinking water for animals. Treated waste water may also be returned to the river.

In our region some water is used for electricity generation and industrial sites use water for a variety of purposes.

Council assistance and resources

River kit - A full kit for studying in-stream life is available on request. The kit contains sets of 10 trays, bugboxes, brushes, magnifying glasses, sieves, 1 thermometer, 1 clipboard and an identification sheet.

River visit - Kevin Archer can assist in a study of a local stream or river. Ideally a field trip is preceded by a classroom visit.

Teaching Unit - Living with the River - Te Awa. This can be downloaded from our website www.trc.govt.nz/resources-for-teachers/ or contact Kevin Archer for a hard copy.

Explore the council website www.trc.govt.nz/ Fresh-water/ for all sorts of river information.

In addition, stormwater from various sources including roads, streets and private properties enters our waterways.

However, things are improving as people show greater respect for our rivers and streams. Trees on river banks are no longer being cleared. Indeed the reverse is happening as people see the benefits of riparian planting. People no longer use waterways as dumping places for rubbish or unwanted chemicals and pollutants. And waterways are being fenced to keep animals out of them.

Remember, we share the river with native fish which prefer clean water in which to live.

Other material available on request includes Photographic Guides to Freshwater Invertebrates of Taranaki's River and Streams; Investing in our Banks (river) booklet; Rights of Passage (freshwater fish) booklet, Taranaki - Where We Stand which is a summary of the 2009 State of the Environment report.

Riparian lesson - Kevin Archer is able to take a classroom lesson outlining the benefits of riparian (stream bank) planting.

Council biolaboratory - Contact Kevin Archer for a visit to see a selection of our native freshwater fish and hear about how we use invertebrates to assess water quality etc.

Junior Environmentalists Page



New Zealand's 10 longest rivers

The 10 longest rivers are the Whanganui, Clutha, Waikato, Waiou (Southland), Oreti, Taieri, Rangitikei, Waitaki, Mataura, and Clarence. See if you can sort them from the longest which is 425km in length to the 10th longest which is 203km in length. If you are really keen you could break them into North and South Island lists.

1.	km
2.	km
3.	km
4.	km
5.	km
6.	km
7.	km
8.	km
9.	km
10.	km

River words and their meanings

Link the words on the left with their meanings on the right.

1. Delta	A Follows a winding path
2. Headwaters	B Small channel in a river
3. Bed	C Main course of a river
4. Brackish	D A small waterfall or a section of a big one
5. Meanders	E A large, silty area at the end of a river
6. Mouth	F The source or start of a river
7. Rill	G Small stream or river that flows into a bigger one or a lake
8. Tributary	H The river's end
9. Trunk	I The bottom of a river
10. Cascade	J Water that is saltier than freshwater but not as salty as saltwater

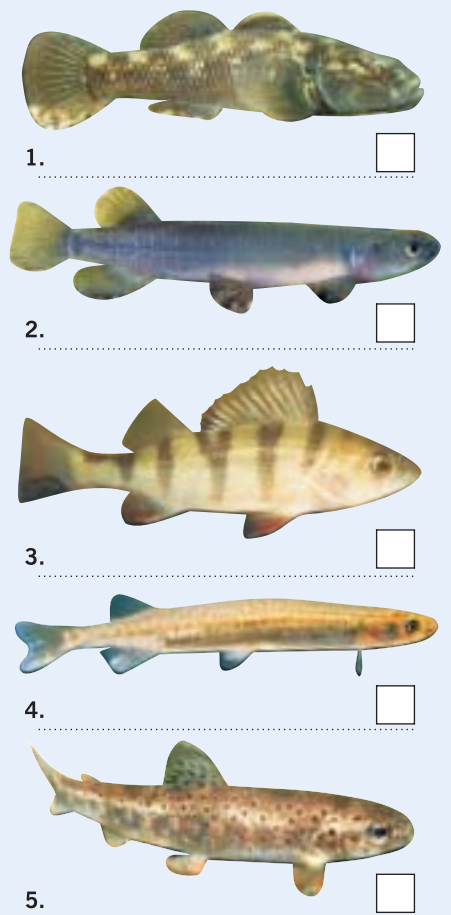
Complete the paragraph about eels

Fill in the spaces in the paragraph with the words listed at the bottom.

The life of the eel is a fascinating and little known Generally, people have regarded them as a of little significance with associated feelings of disgust. When we consider the fascinating they undergo, we should probably think of them with higher Their ability to travel vast across oceans at the start and end of their lives is How they their way across the oceans is a source of wonder. Perhaps it is time for them to hire an agency to develop a high profile campaign to a better understanding of this marvel.

distances phenomenal story journeys navigate cycle promote fish respect advertising

Go fish



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

Did you know???

Of all New Zealand's waterfalls, Huka Falls (near Taupo), has the greatest volume of water. The Waikato River drops 8 metres over a distance of 230 metres and the water is forced into a narrow channel before suddenly falling 11 metres.

The Waikoropupu Springs near Takaka, Nelson popularly known as Pupu Springs gushes out 2160 litres of water every 24 hours making it one of the largest freshwater springs in the world.

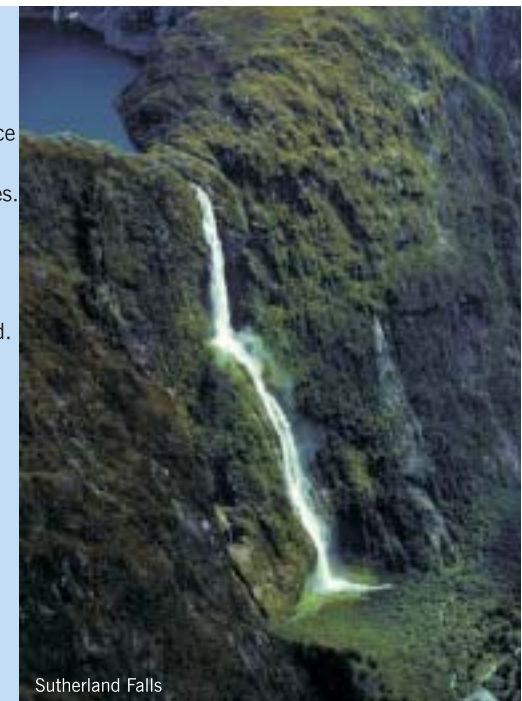


Pupu Springs

New Zealand's largest lake (in area) is Lake Taupo but Lake Te Anau has more water in it. The deepest lake is Lake Hauroko with a depth of 462 metres.



Lake Te Anau



Sutherland Falls

New Zealand's highest waterfalls

Name New Zealand's four highest waterfalls and their height in metres.

	m
	m
	m
	m