Taranaki Regional Council

SiTE

Schools in the environment newsletter

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Another year awaits

Welcome back and special greetings to those who have come to Taranaki for the first time. You will find that environmental education in this region is regarded by many teachers as an important part of the school programme and can easily be incorporated into a wide range of subject areas. There are a number of environmental education providers available in Taranaki and we try to work together to provide as much support as possible for yourselves and your students. If you would like to find out more about the programmes the Council offers please get in touch.

School bookings are traditionally heavy for this term and this year is no exception. While I may not be able to support your out-of-school programmes in person, there is a chance that I can provide resources for you to use on a field trip or I can take a supporting lesson in the classroom. Please get in touch as I would like to help if it is at all possible.

All three of the Council's regional gardens offer specific activities and a visit to any is sure to enhance your school programme. It continues to be all action at Pukeiti at the moment and the developments happening there are awe-inspiring. Despite the on-going work, we are still able to offer a selection of activities there. Please also consider a visit to our other regional gardens at Tūpare in New Plymouth and Hollard Gardens in Kaponga.

This year's Seaweek is scheduled for 25 February to 5 March. The theme "Toiora te Moana-Toiora te Tangata – Healthy seas, Healthy People," highlights the enormous contribution our beaches, seas and coasts make to our health and wellbeing as well as offering ideas for us to keep our coastline and seas healthy for all. Further information can be found at seaweek.org.nz/resources-downloads

I am often asked if there is a charge to schools using my support. The good news is that the Council views the education programme as a valuable investment in our future generations. There are no charges for all schools, early childhood centres and other education groups in the Taranaki region.

Best wishes for a happy and rewarding year.
Kevin

The Taranaki coast

Our coast is highly valued for its natural character and as a place for people to play, gather food and relax. This issue of SITE focuses on our coast, what makes it different, how we use it, how we protect it and things we can do to make it even better.

Time to explore the regional gardens and Pukekura Park

As mentioned in the editorial, a visit to any of the Council's three regional gardens is rewarding, educational, fun and very worthwhile. All three are unique and highly regarded by thousands of visitors each year. For further information please contact Kevin.

Pukekura Park is a Garden of National Significance, covering 52 hectares near the heart of New Plymouth.

Despite its standing, it is sometimes overlooked as a venue for school visits. From personal experience, I know a visit there is extremely rewarding and is fun. To make it even better, The Friends of Pukekura Park have developed some fantastic online education resources for schools to use.

The material provided is extensive and includes booklets to cover three separate walks in the park. While the walks are suitable for all year levels, the information in the booklets relates to the NZ Curriculum subjects, Science and Social Science level 3.

For further information please go to http://bit.ly/pukekura

The Taranaki Coast

The Taranaki coast is a mixture of high cliffs, estuaries, reefs, rocky shore, marine protected areas, safe swimming beaches, river mouths, wonderful surf breaks and the country's busiest west coast port.

Coastal water quality

The Council monitors the quality of seawater at popular coastal beaches every summer. Results at our beaches are consistently better than the national average and in 2015/16, 99% of samples were within Ministry for the Environment guidelines for seawater quality.

The Council is one of over 20 organisations or agencies involved in managing activities on the land, coast and other areas of the marine environment.

Coastal erosion

Our coastal areas are constantly under pressure from the sea. The coastline can be naturally eroded by scouring at the floor of high cliffs, at the dunes or at the subtidal foreshore.

It takes place mainly during strong winds, high waves, high tides and storm surge conditions which can all lead to coastal retreat and loss of land.

Council Officers carry out regular monitoring.

Sand Dunes – What are they and what do they do?

A sand dune is an accumulation of sand formed by wind, waves and eroding sandstone. They depend on all three as they are constantly changing.

They act as a natural barrier against storms and waves and often protect houses and other structures further inland.

They act as a storage reservoir during storms in a similar way to how wetlands help to reduce flood impacts.

Four simple measures you can take to help protect our coast.

1. Take note of the signs at the beach which show you the best, safest and fastest ways to the water.
2. Respect the fences which are erected to protect plants, sand dunes etc.
3. Keep off the sand dunes altogether. Important plants and birds live in the dunes. It is their habitat, not ours.
4. Next time you go to the coast, take some bags and gather any rubbish you see in the area. There are usually rubbish bins in the area for you to dispose of whatever you collect.

Seawalls, groynes and breakwaters

These artificial structures have had tremendous impact on our region's beaches. They have been built to alter the effects of sea currents, waves and sand movement and to protect harbours from the open sea. They can prevent coastal erosion and protect special areas on the coast.

Rocky shore studies

There are many rocky reefs along our coastline with a rich diversity of marine life. We are fortunate in that we have a number of suitable rocky shore areas suitable for school groups to study.

Sandy Bay located north of Opunake.

How can we help?

- Download our Coast study unit from our website or contact Kevin for your own copy.
- Invite Kevin to talk to your class about rock pool ecology prior to you taking your class to explore a rocky shore area.
- Request a Rocky Shore unit which has been updated recently.
- Request extra resources such as wall charts/estuary, beach or other rocky shore material.
- Invite Kevin to talk to your class about the Taranaki coast and/or read 'Skalaska' to your class. This short story contains a strong environmental message about the need to care for our coast.

Environmentalists Activity Page

Coastal places

The list below contains seven beaches, three reefs, two estuaries, one harbour and two marine reserves all of which are found in the Taranaki region. See if you can sort them out.

Bell Block	Opunake	Oakura
Parininihi	Kawaroa	Tapuae
East End	Ohawe	Tuaranga
Port Taranaki	Fitzroy	Ngamotu
Tongaporutu	Manihi	Mimi

Te Reo-English

Match the Te Reo words or phrases with their English meanings.

1. Ata hikoi	**A.** Sunday
2. E noho	**B.** How are you?
3. Aē	**C.** Yes
4. Whakarongo	**D.** Very good
5. Kāo	**E.** Weather
6. Rātapu	**F.** It is very hot
7. Kei te pēhea koe?	**G.** No
8. Huarere	**H.** Walk carefully
9. Tino wēra	**I.** Sit down
10. Ka pai	**J.** Listen

Rocky shore discoveries

A busy group of rocky shore students found the following animals in one rock pool at Kawaroa recently; six painted shrimps, two rock fish, three chitons, one kina, four limpets, 20 oyster borers, 100 (approximately) barnacles, 25 tube worms, one sea slug, six anemones, three cushion stars and ten hermit crabs.

Can you show their discoveries on either a pie graph or a bar graph.

Pictured: Clingfish, Whelk and Chiton.

Rocky shore plants and animals

The photos contain some common animals and a plant found in many Taranaki rock pools. Can you name each of them from this list below?








kina, wandering anemone, oyster borers, neptune's necklace, barnacles, tubeworms, waratah anemone, cushion star.

How the gravitational pull of the Moon affects the tides on Earth

Whole class activity

There are a number of 'Moon' songs that can be used to accompany this routine to add to the fun. It could be a great activity to show at a school assembly.

1. Ask all the children in the class, except one, to kneel in a large circle. The circle represents the water in the oceans.
2. Explain to the students that if there was no Moon the sea water on Earth would experience much smaller high and low tides as the combination of the Earth's gravitational force (pulling it inward) and the centrifugal force (pushing it outward) more or less cancel each other out.
3. One person is the Moon and he/she moves around the outside of the circle.
4. As the Moon slowly passes behind the students (the water) the students lean back towards it, representing the gravitational pull of the Moon.
5. The student leaning back the furthest is the one when the Moon is directly behind him/her.
6. As the Moon moves away from any student the person gradually moves back towards a normal kneeling position.
7. Ask the Moon to stop at any given time to see how accurate the students are.
8. Practise this action a number of times until the students get more proficient with it.
9. Now ask each student to identify the person who is sitting directly opposite them in the circle.
10. As a students bends backwards as the Moon passes behind him/her, the person opposite bends inwards and so on as the Moon moves around The Earth.

OUT OF site

Taupo Intermediate at the Council

"Fancy a rook?" Council Environment Officer Tom Austin seems to be offering a rook to a couple of interested students from Taupo Intermediate during their recent visit to Taranaki. Teacher, Natalie Robinson brings her class to Taranaki every year, basing them at Icons at Tariki and they spend three days getting out and about exploring our region.

Highlands Intermediate

Highlands Intermediate's budding scientists test the Huatoki Stream study. Four groups under the leadership of the school's science teacher Pat Swanson undertook an investigation of the water quality in New Plymouth's Huatoki Stream in November. There is a move in science to involve the community in getting scientific data. It is called citizen science and this study was a stepping stone towards that.

Marfell students have a ball at Kawaroa

Two groups of Marfell students really enjoyed themselves at Kawaroa in November. Here Kairyn Niwa-Te Huia, Kaia Box, Kevin Archer, Hemi Barr and Angela Kehely search for rock pool inhabitants.

This and That

Education programmes

Puke Ariki in New Plymouth and Aotea Utanganui in Pātea have exciting education programmes with several topics having links to our Council education programmes, including the study of wetlands, bugs and Mounga Taranaki.

Further information about Puke Ariki programmes in New Plymouth is available at www.pukeariki.com or www.Facebook.com/PukeAriki or by contacting Nathan or Anne at 06 7596710.

For further information on Aotea Utanganui education programmes in Pātea please phone Rob at 06 273 8354 or email rob.groat@stda.govt.nz

Waste audit at St Pius X School

It was 'gloves on and bags open' as the Year 5/6 class at St Pius X School carried out a waste audit in October. The audit was part of a series of lessons which included the benefits of waste minimization and recycling, a visit to MRF (Materials- Recovery-Facility) in New Plymouth, what happens to our recycling, how to make our composting more effective and some ideas to reduce waste volumes immediately and into 2017.

Answers from page 3

Beaches - East End, Fitzroy, Oakura, Ngamotu, Ohawe, Bell Block, Opunake **Reefs** - Kawaroa, Manihi, Tuaranga **Estuaries** - Tongaporutu, Mimi **Harbour** - Port Taranaki **Marine reserves** - Tapuae, Parininihi

Te Reo-English

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

For assistance or information on environmental education contact:

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