

EcoBuzz

EcoBuzz Edition 505

Term 3 2014

IN THIS ISSUE:

Landfill visit
Student action projects
Argentine Ants
Arbor day plantings
Ecofest in Motueka
Teacher training
Provider updates
Solar Schools



Motupipi School visit their ‘Adopt a Section’ in Abel Tasman National Park in partnership with DOC and Project Janszoon.

Kia ora tatou

Wow – term 3 has started with a hiss and a roar, much like how term 2 finished it seems. This issue of EcoBuzz is a good indication of the huge amount of action going on in our region. Congratulations to you all for the many positive things you are involved in with your students/children.

We hope the information and many opportunities within these pages support and inspire you further. We love feedback and contributions so please don't be shy. Tell us what you would like included in EcoBuzz.

Thanks Mary, Adie, Richard, Lindsay, and Claire

What we are today is result of our own past actions;
Whatever we wish to be in future depends on our present actions;
Decide how you have to act now.
We are responsible for what we are, whatever we wish ourselves to be.
We have the power to make ourselves.



“What is in the pencil is greater than what is around it. The talents in you are greater than the environment surrounding you. Your potentials will change your environment.”

— [Israelmore Ayivor](#)

Contents

News from the Councils	3–6
Regional EnviroSchools	6–8
Schools Taking Action	8–13
Provider Updates	13 –17
Snippets	18
Teacher Activities	18–21

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Introducing Mary



Mary Curnow will be taking on the Environmental Programmes Officer role with a focus on waste minimisation and environmental education at Nelson City Council from Monday 28 July. She's spent the last 11 months working with Council in their Community Partnerships team and previously worked at the Nelson Environment Centre with the Waste Education Services team, Sarah Langi and Karen Driver, working with businesses and schools to reduce waste. She's really looking forward to getting involved in this area of work again and looks forward to meeting you and working with you in the future.

Mary will be taking on the role previously held by Jo Martin, who will be managing the Council's Maitai Project as well as hazards work, and temporarily by Richard Frizzell, who will be focussing on the Council's air quality and built environment programmes.

Mary's contact details are mary.curnow@ncc.govt.nz; phone 03 546 0383.



Argentine & Darwin Ants – what schools need to know and do.

These ants are a major pest. Please help stop the spread.

Why are they a problem?

- These ants multiply very quickly, have a huge appetite and will utilise any food source they can find
- They will quickly over-run a property and invade buildings/homes too
- They will kill other types of ants, beneficial insects and earthworms
- They can even kill baby birds in nests!
- These ants will farm aphids and scale insects (taking sugar from them in exchange for protecting them from other predators)
- If left unchecked they could become a serious threat to many orchard crops, organic growers and gardeners

How are they different to the common black ant?

Check out identification: <http://www.tasman.govt.nz/environment/pests-weeds/pest-animals/argentine-and-darwin-s-ants/>

Identification of these ants is valuable as the more people who can recognise the different ants, the better are the chances of reducing the spread of Argentine and Darwin ants.

Actions that can help: **“Stop the spread”!**

1. Check items so that you are not spreading these ants to new areas
 - Giving away or receiving pot plants
 - Having a school fair? Ants could be on anything including clothing, soil and plants
2. Ants are wonderful at finding food, so keep areas clean and clear away any food scraps.
3. Bait: Only Adults are to administer any of the bait options for ants and care is needed on school property.
4. Watch out for Community Education classes in Richmond and Nelson in October that will teach householders best practice and timings to remove ants effectively.

Arbor Day Celebration Plantings 2014 in Tasman

A small but dedicated group of schools participate in Arbor Day plantings this year. In addition we offered schools the opportunity to receive trees for their school grounds and many schools took up this offer. In addition it is great to see so many schools keen to incorporate the planting of trees into their school activities. These learning experiences show our tamariki first hand how to grow and nurture trees in their everyday environment.

Some schools like Brooklyn and Parklands in Motueka have chosen trees that will act as a memorial or add to the landscape values of their school.

Once again it was a pleasure to work with our community's children during these events and also to introduce our new Horticultural Officer, Richard Hilton, who will be working in the Richmond, Waimea and Lakes/Murchison areas. There are still options for continual plantings if schools are interested; contact Adie Leng or Claire Webster, who work closely with our Parks and Facilities team.

Kathy Curnow Horticultural Officer
Motueka and Golden Bay



Left is Lisa Healey, right is Levi Maguire both from Broadgreen Intermediate planting at Tahunanui back beach. Above is Wakefield School planting at Faulkners Bush.



Nelson City Council school planting programme

Winter is the best time of year for planting trees, and planting is now well underway throughout the region. The community and schools planting programme is a real highlight on Nelson City Council's calendar.

Planting kicked off on Arbor Day (5 June) with a Youth Council organised planting at Tahunanui back beach where coastal dune trees and shrubs were planted.

Since then, classes from Nayland Primary, Tahunanui, Broadgreen Intermediate and Birchwood Schools have all been out to plant native trees and shrubs on Council reserves.

This is a wonderful programme and it is a privilege for Council to be able to work together with schools to help improve our environment and landscape. In the future many students will return to these sites and know that they have helped to provide food and habitat for our native birds, insects and fish and also contributed to making Nelson a better place.

Planting will go through until the end of September with many schools yet to plant. We hope that everyone has a fun experience.

If you are interested in the Council's school planting programme please contact Lynne Hall, Council Environmental Programmes Officer, phone 03 546 0308

Richmond Waterways

There are four main streams/creeks in the Richmond urban water catchment. One of them is Borck Creek. The lower reach of the Borck, where it enters the Waimea Inlet, runs along Headingly Lane, coming from behind the hills in south Richmond and Hope. A water treatment station, for the stuff we drink, has started to be built on the corner of McShane Road and Lower Queen Street.

Changes are also planned for the Borck Creek channel to enable more effective diversion of stormwater from the upper west side of Richmond, whilst also ensuring long term goals of retaining an ecologically friendly habitat and spaces for recreation. Earth works may be starting in Term 3.

If you think your school/class would be interested in a long term project around the changes involving Borck Creek, please contact Adie Leng. Your project could include: working with engineering processes dealing with stormwater and flooding, ecological and landscape planning, waterways and freshwater fish monitoring, growing of seedlings, and/or planting around the channel changes over the next year or so, as well as contributing to a Richmond waterways community vision.

Contact Adie Leng for more information.



Minding the Maitai - Schools come and help!

The Council is launching a new initiative to restore the health of the Maitai River in association with Waimaori at the end of August. Schools interested in being part of monitoring the state of the Maitai should contact Mel McColgan, phone 021 146 8654.

A community planting up is planned for the Maitai on the 10 August from 10.30 – 3pm (postponement day 17 August). See map of location above – park at Golf Course car park. The purpose of the planting is to restore the original streamside ecosystem and support the mountain to sea biodiversity corridor. Bring gumboots, gloves and appropriate clothing.



Ecofest is coming to Motueka in Term 3 on September 21st. An Ecofest roadshow aimed at showcasing appropriate groups and businesses that help people live more sustainably, and offering a wide range of interesting seminars and hands-on workshops.

What's Ecofest?

Consider it a home and garden show with a green conscience. Schools can have a stand at no charge, to sell appropriate items or run kids' activities, for fundraising. You will need to register before 8 August with Jo Reilly, Event Manager on Ecofest@xtra.co.nz or 03 5433 663

The target market is mainstream public whom we aim to educate and encourage living more sustainably. Ecofest particularly focuses on products, services and innovations that assist people in saving money on their household bills, and aim to provide a wide range of experiential learning opportunities for the public to get involved in.

When:	10am-4pm on Sunday, 21st September 2014
Where:	Motueka Recreation Centre, Old Wharf Road, Motueka
Set up:	Saturday, 20th September from 1pm-5pm, and Sunday, 21st September from 7am.
Pack down:	Sunday, 21st September: 4pm-6pm

There will also be a similar Ecofest held in Nelson on November 16th. For further information visit <http://www.ecofestnelsontasman.co.nz/>.

National EnviroSchools Hui

Cambridge Waikato

8-10 October

The EnviroSchools Energiser Hui is a time for us to come together to build our knowledge, to share ideas, to celebrate and be inspired by what is happening nationally in the EnviroSchools Programme.

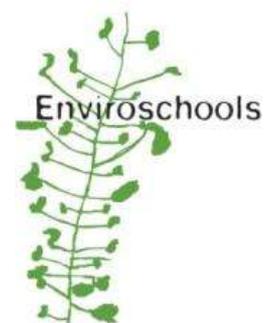
A focus on professional development:

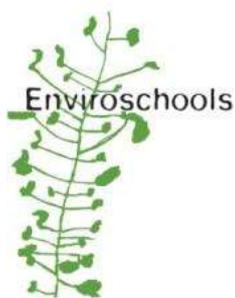
- Māori perspectives
- Effective facilitation for deepening practice
- The Holistic Reflection Process
- Familiarisation with our EnviroSchools resources
- The bigger sustainability picture.

Networking: Connect with peers, share ideas, find out what is working in other regions, and explore in your Early Years, Primary, Secondary or Funders and Supporters stream.

Inspiring speakers to extend and stimulate our thinking.

Tasman teachers – please contact Adie or Claire to discuss financial support.





Nelson Enviroschools teachers make the most of Term 2 Professional Development Opportunities

It was a really busy term 2, filled with opportunities for teacher professional development, thanks to funding from The National Enviroschools Foundation.

Teachers from Nelson College for Girls and Garin College, both Bronze Enviroschools, were able to visit a green-gold reflection which took place at Western Springs College in Auckland. As the day was World Environment Day there was also plenty happening around the school, with other schools visiting to learn about how they had achieved an awesome 70% waste reduction in 9 months.



The Envirogroup at Western Springs College taking action on World Environment Day—raising awareness of the amount of natural habitat which is being lost to tarmac for car parking and reminding people of the walk to school message

Teachers were able to meet other teachers from Western Springs and Auckland Girls Grammar School to discuss how the schools had integrated Enviroschools and Education for Sustainability into their programmes and at NCEA Level. The end of the visit was concluded with a celebration as Western Springs College became a Green-Gold Enviroschool. If you'd like to see a short video of how Western Springs achieved their sustainable waste reduction follow this link: <http://vimeo.com/97198725>.

PD opportunities continued with a very well attended workshop exploring the concept of sustainability. This was the first cross-sector workshop of this nature in Nelson, with teachers from ECE, Primary, Intermediate and Colleges attending. Feedback from the workshop, as well as the chance to network with fellow Enviroschool Lead teachers, was extremely positive and something we will look to continue to provide in the future. It was also great to welcome some Tasman teachers to the event.

Finally, teachers from Hira and Victory schools accepted the invitation to join a workshop run by Senior Education for Sustainability Advisor in Auckland, Sandy Bell-Jameson, for Marlborough Enviroschools, to investigate how the Enviroschools programme links to the NZ Curriculum.

With thanks to all teachers, schools and inter-regional partners for their on-going commitment and support.

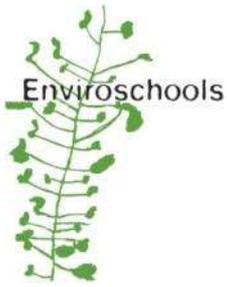
Lindsey Fish

Melissa (left) examines the NZC to find that the Enviroschool's Kaupapa and sustainability are widely embedded within it.



ECE Enviroschools Facilitator, Roger Wilde, leads the Whakatu Enviroschools waiata





Auckland Point Kindergarten Bronze Celebration

Nelson Mayor Rachel Reese visited Auckland Point Kindergarten, Matangi Āwhio on the 9th of July, joining us to celebrate reaching Bronze status in our Enviroschool journey. To welcome her we sang our waiata 'Nau Mai, Haere Mai' and tamariki performed a haka.

The Mayor said she regards Matangi Āwhio as perhaps the most important place in Nelson, due to its history as a Māori pā site.

The Mayor talked to our tamariki about some of the wonderful and important work they have been doing: connecting with natural environments; vegetable gardening; reducing lunchbox waste; sorting recyclables; conserving water and creating a nature trail behind the school. She said that the learning at this early age would help them grow up to make a difference in the world.



At the request of kaiako, the Mayor brought the Mayoral chains, which the tamariki were very interested to see. Later, some of them could recall "It has a shield at the bottom, with two birds on it."

After the Mayor presented our Bronze certificate, we celebrated with kai that the tamariki had helped prepare: crackers with 'wild green pesto', date muesli bars and apple fritters.

Roger Wilde - Kaiako at Auckland Point Kgtn and Enviroschools Facilitator

Project Possum

This year Project Possum was offered to the Top of the South secondary school students, who wanted hands-on experiences of how and why we need to reduce possum numbers to protect our biodiversity whilst gaining NCEA standards. Marty Taylor of Papa Taiao, has run this programme successfully in Northland for the last three years and even brought two officers from the Northland Regional Council with him.

Twenty one Year 12-13 students from Murchison and Collingwood Area Schools, Golden Bay High School and Nayland College joined 6 Correspondence students in the two day workshop style classroom at Cable Bay Campground. The photos tell some of the story and the students worked well to achieve the written requirements. Marty was very impressed with the enthusiastic way the students engaged in all of the learning activities and practical trapping, skinning and defurring possums. Special thanks to hosts Barbara and Ian Stuart.



Schools Taking Action

Central Takaka School taking action on their action project



The CTS Envirogroup decided an unused area of their school grounds needed a make-over. Plans are now in the making for a major hut, jungle gym and more. The first practical stage was creating games to play in the area. Bumble bees and Ladybirds (instead of noughts and crosses), picture stones and draughts were all created as games to be played in the area.

Henley Primary School: the region's first Solar School

Henley School, Richmond, a large, urban primary school with over 600 pupils, is the region's first Solar Schools school, installing 60 pv panels on their roof. Wanting to educate their students about their new energy source, the teachers called in the Solar School education team to help them plan their whole-school Energy unit for one term. They chose to do this as their Science curriculum for term 2 2014.



The middle and junior students became energy detectives, walking around their school and neighbourhood looking for energy sources; making ice hands and using different materials to stop them from melting; and learning how tuatara use the sun's energy. The seniors played the oil game and went on to learn about all types of renewable energy. They held a debate at assembly between the oil magnates and the environmentalists.

NIS Envirogroup

Nelson Intermediate School has had an Envirogroup for a few years now. Two years ago the group had a vision that included planting trees that they could harvest for food, an outdoor learning area and a school garden. This vision came into effect last year when NIS students from each class planted fruit trees around the school. The garden area was started and Bunnings Warehouse helped by supplying and erecting raised garden beds, a large tool shed and boxed compost-bins. The area is designed to also be an area that we use for different curriculum activities such as writing and art, as well as a place where students can learn about their environment.

This year, Nelson Intermediate is aiming to become a Bronze Enviroschool. To help us achieve this, we have set up a new system this term where every class has chosen an environmental focus within the school. Each class has two representatives, which, along with the head boy and girl and two teachers, make up the school Envirogroup. The representatives are responsible for collecting ideas from their class and putting the plans into action. The group meets weekly to discuss the class projects and other possible projects for the whole group.

Examples of the class projects that have been proposed are: litter-free lunches, improving the condition of the York Stream, raising chickens, looking after and pruning the fruit trees, caring for the vegetable and herb gardens, building a pizza oven, beautifying an area at the back of the school and maintaining and promoting use of the school compost bins. Action plans have been completed and classes are beginning their projects. Some projects will take a longer time to be completed, but every class will be up and running by next term.

Involving the whole school in class projects has raised students' awareness of the environment. We are looking forward to seeing the effect of these school-wide projects over the course of the next two terms.



Harakeke Preschool forest

Through the gates of the playground at Harakeke, the teachers and children have developed a forest classroom with its own base camp amongst the ancient native trees. In the past, the children had no restrictions on where they could play in the neighbouring patch of native bush; they now have a clear path to keep to, which will allow a better chance for seedlings to prosper. To further protect these seedlings and the health of the bush, the adults and children have also been planting a protective line of quicker growing natives on the edge of the patch. Late summer, the children helped any wilting seedlings they found by bringing them water and now they have even more baby trees to help. Healthy lowland native forest is a rarity in our district so protecting this patch will be something the children can be proud of continuing to do for many seasons.

Model hut building at Takaka Primary



The Hawks class at Takaka Primary School have been building model huts as part of their Enviroschools Action Project. The children said “you make a miniature version first cos it is funner than just making a big one first” and “we make little ones first then medium sized. Soon we will make big ones we can fit in. We have a better ideas now.” Teacher Rachel Houston has been really impressed with how hard the children have worked and really taken ownership of the project.

It is hoped there will be some more funding available through the National Enviroschools Foundation next year for more action projects that involve real planning by students – just like this.

Richmond Montessori Preschool find Great White Butterfly in their garden!

“At the end of Term 1, we discovered caterpillars of the Great White butterfly. DoC was called in and they confirmed our observations! It was a great finale to our learning about nature during the term (children learn that not all living creatures are beneficial to our local environment). The children were also involved in removing the nasturtium, kale and broccoli plants.” They want everyone to be on the lookout for these caterpillars.



KEGS at Victory School: Planting garlic at Matariki



The Victory KEGS group learning how to plant garlic!



The KEGS students at Victory focused on planting their small garden with perennials: grape vine, cranberry, feijoa, parsley, coriander, silverbeet, lavender and more, to ensure there is always something to see and harvest. They also planted daffodils, and recorded these in their class garden diary. In the community garden they planted garlic at Matariki. They learned how to separate out the big fat cloves to plant and how they need to be spaced 30 cm apart. Garlic is fabulous for cooking – the kids love garlic in their pizzas and especially garlic bread! They also learnt that garlic is a powerful medicine as it is anti-bacterial. Good for colds and flu! It's also good as a plant spray to deter pest insects. "I really like growing food for other people" said one student. "I really like gardening because we get to do baking and eat it!" said another.

Nelson Intermediate School

KEGS students are setting up a new herb garden at Nelson Intermediate. They have designed the garden and have been propagating new herbs from cuttings. The herbs will be used for the cooking classes in the Food Tech classes, and if they have surplus, the students plan to sell herbs.

They have learnt how to:

- take cuttings from: lavender, purple and white sage, thyme, rosemary, curry plant, oreganum and strawberries
- trim off nearly all the leaves so that the plant can focus on making roots rather than leaves
- make their own organic rooting compound by soaking willow branch tips in warm water for 4 days; The willow plant is a natural source of the growth hormone, Auxin, which facilitates root growth. This willow water is then used to water the plants
- dip the ends of the cuttings in honey before planting, which also acts as a rooting compound
- cover their cuttings with plastic hats, making mini greenhouses to keep the moisture in



By Lisa Hunter and Jenna Stallard

Wakefield School visits Eves Valley Landfill



As part of Wakefield School being good kiatiaki of resources, classes visited the Richmond Resource Recovery Centre and the landfill.

“I saw big piles of trash and I said to my friends, “Hopefully there’s no trash-a-lanche.” Compared to that pile of trash I felt so small. When I heard that the hill I was walking on was rubbish I went crazy, I didn’t even know it was possible.

The man said, “You don’t want to smoke by those pipes because there’s methane gas coming out of them.” Lily said, “Why?” I said, “Because it will explode and then we really will have a trash-a-lanche and then we would be living in trash city. BOOM!” The man said, “Spot on!”

Leroy, Totara Tahī Team, Wakefield School



Motupipi School visited the Abel Tasman National Park as part of Project Janszoon and DOC’s pilot 'Adopt a Section' programme

Much fun and learning was had by all! Each syndicate explored a different area and completed different tasks between the Wainui Bay sand spit and Taupo Point. The day was mostly about having fun and seeing the Park through new eyes. This was a fantastic way to begin to develop a genuine sense of caring for 'their place'.

“It was a great first visit!” said Project Janszoon Education Advisor, Wendy Reeve. “Students were really interested in the things they were seeing and hearing all around them, from plants and birds to the geography and history of the area.” She added that the teachers had prepared a list of native birds for the students to tick off throughout the day. “It was wonderful to see students’ excitement grow as they were able to recognise more and more of our local birds. This is such a wonderful, student-driven programme and I’m looking forward to seeing where they take things in the coming years.” The support of many parents and a number of local experts really added value to the day, too.





Waste not, want not – the story of food

One of the more interesting (and occasionally messy) things Nelson City Council and Tasman District Council do, as part of their joint waste plan, is to look at what is actually going into our landfills. The latest analysis points to a high level of food waste.

In New Zealand, there is very little information on food waste, which has prompted the councils to fund a study to find out which foods people are throwing out, how much, and the reasons why. Once the results are finalised, a programme will be developed to help households reduce food waste and, at the same time, food bills. This campaign will be based upon ideas like the internationally acclaimed UK campaign: Love Food Hate Waste, which has reduced food waste in London by an impressive 21%.

Conducting the study on behalf of the councils is the Nelson Environment Centre (NEC), which is collecting information on food waste in our region and focusing on the reasons why food ends up in the rubbish bag, by asking people to submit detailed diaries. NEC targeted households with young children as international research shows that this group wastes more food than any other sector. Working with these families to demonstrate how food waste can be cut down will provide useful examples for many other households too.

In Nelson and Tasman, the diaries reveal the main items wasted are bread, chicken, school lunchbox leftovers (especially sandwiches) and breakfast cereals, followed by fruit and veggies. The main reasons edible food is wasted seem to be that food is left to go off before it can be eaten and portion sizes may be too big, especially for young children. School lunchboxes produce a lot of waste. Interestingly, one mum noticed that, after the school implemented a zero-waste lunch policy, the children are now supervised until they have eaten their lunch before being allowed to play, with the result that the lunchbox waste is halved.

“The really great news that the diaries show is that nearly every family we surveyed cooks loads of fresh fruit and veggies. Also, 44% of food waste in our region is thrown in the compost and 23% is fed to animals, so only 24% is going to landfill,” says Sarah Langi, NEC’s waste education facilitator. “This may be painting too bright a picture, as the families all volunteered to take part in the survey. It may also reflect the variety of fresh food available in our region, and all the compost workshops the councils have funded in recent years.” A local campaign to reduce food waste will now be designed, with a strong focus on practical tips including cooking, storing and shopping for food.



Kids Edible Gardens in Schools

Currently Nelson has four schools participating in the Kids Edible Gardens in Schools programme. These are Auckland Point School, Victory School, Nelson Intermediate and Hampden Street School. Nelson Environment Centre has secured funding to continue the Coordinator's role until Dec 2014 and is committed to paying half the facilitator hours. All 4 schools have agreed to pay the remaining half of the facilitator hours so this valuable programme can continue until the end of 2014.



A workshop for the facilitators and lead teachers was held on May 14 at Auckland Point School. This was the first time both facilitators and lead teachers had attended the same workshop and it proved invaluable as it enabled both to sit down and discuss ideas, issues, and solutions to getting the garden learning into the curriculum and the classroom. This was attended by 17 teachers and facilitators from 7 schools. The feedback was very positive. The Enviroschools coordinator also attended and gave an overview of how KEGS and Enviroschools works together, as well as conducting a fun activity on nitrogen fixing.



Solar Schools

Solar power is an ideal option for schools because they use power during the day. By producing their own power from the sun, schools can lower both their long-term energy costs and their carbon footprint.

Solar Schools is a crowd funding initiative launched in March 2014 by [Nelson Environment Centre](#) and [SolarCity](#) to help schools switch to solar power. Lindsey Fish is now the Solar Schools educator. The goal is to reduce the upfront cost to schools of installing solar power by providing a safe and easy crowd funding mechanism to raise money, if required. Families and businesses can invest in a clean energy future for their school, while receiving a return on their investment.

To register for Solar Schools, visit <http://www.solarschools.org.nz/>. Through the website and curriculum tools students have access to empowering information. We offer curriculum support to help embed solar and energy topics into the classroom.

What is photovoltaics?

Photovoltaics (pv) is a method of converting sunlight into electricity. "Photo" means "light" and a "volt" is a unit of electrical energy. Photovoltaic cells are connected together to form a solar panel. There are two types of solar panels: solar thermal panels convert sunlight into heat energy and are typically used to heat water; pv panels convert sunlight directly into electricity, which can then be used to run electric appliances as well as heat water.

Photovoltaics is a renewable energy source, free from emissions; therefore, converting from fossil fuels to solar energy helps to mitigate global warming. For a more detailed description of how pv works, download the Schoolgen pv fact sheet from <http://www.schoolgen.co.nz/>



Photovoltaic SUDI shade is a mobile station in France that provides energy for electric vehicles using solar energy. [Tatmouss 19 Nov 2010 (Wikimedia Commons)]



Nelson
Environment
Centre

Battle for our Birds

The Battle for our Birds campaign is an effort to save native species at risk from a massive predator plague.

An exceptionally heavy beech seeding and seedfall, known as a mast, in many forests this year, is providing plentiful food to fuel rapid rises in rodent numbers. This in turn leads to rising stoat numbers due to the abundance of rodents to feed on. Monitoring has shown rat numbers are at levels at which they could reach plague proportions by late spring if not stopped.

Vulnerable native birds struggle to survive when nesting under normal predator pressures but with the high predator numbers expected this year it could be a disastrous breeding season. Control is needed to protect whio, rock wren, kea, kaka, great spotted kiwi, bellbirds, kakariki, Powelliphanta snails, long-tailed bats and other vulnerable native species.

DOC is planning for pest control, to be ready to act quickly to protect native species this spring. Final decisions on where pest control will take place nationally will be based on rodent tracking and beech seed monitoring in coming weeks.

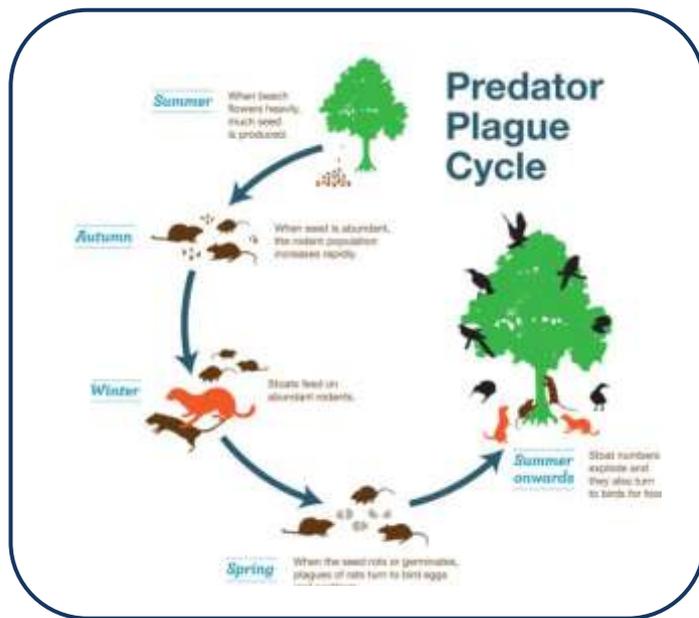
Aerial pest control will help protect native birds from predator attacks during their critical breeding season. This will enable greater nesting success with more chicks and nesting females surviving to build populations.

The pest control will entail aerial application of cereal baits containing 1080, a poison that is biodegradable, dilutes quickly in water and does not build up in the food chain. It is the most effective method over large areas and difficult terrain. It rapidly and substantially reduces rat and possum numbers, and also stoat numbers through their eating of poisoned carcasses.



Research has shown beech mast predator surges can overwhelm trap networks. Ground control on its own cannot protect threatened native bird, bat and snail populations from beech mast predator plagues.

This is a good time for the class to look at the beech predator cycle and to find out where in their community they can get involved to protect native birds.



There is also a new 'Battle for our Birds' app available for tablet only:

Download the 'Battle for our Birds' app from the iTunes store. It's currently available on iPad, and in the review phase for iPhone. The game is based on the popular "angry birds" game, and displays native birds (e.g. whio, kiwi) firing kiwi icons (pavlova, rugby ball) at predators, killing them to save our native birds.

Go to <http://www.doc.govt.nz/conservation/restoration-projects/battle-for-our-birds-beech-mast-2014/> for lots more information

Sustainable Coastlines visits Tasman schools and holds community plantings



Sam talking to room 3 students at Takaka Primary



Community planting in full swing at Rototai Reserve

Sam Judd (Winner of the 2013 Young New Zealander of the Year: <http://www.nzawards.org.nz/new-zealander-of-the-year/young-new-zealander-of-the-year/2013/>) and his team were busy visiting schools in Tasman recently. Sustainable Coastlines, a multi-award winning charity run by a small team that has delivered educational programmes to nearly 100,000 people, motivated tens of thousands of volunteers to remove over a million litres of rubbish from the coast, and planted thousands of trees alongside our waterways. From May to August this winter they are travelling around New Zealand to run free training workshops, educational talks in schools and tree planting events as part of their [Love Your Water](#) tour.

Sam and team are keen to return to Tasman next year at a similar time to work with even more students. Feedback from teachers was that they are well worth having in school. So watch out for them next year.



Announcing the second Nelson annual science festival 'Celebrate science with Cawthron'.

This is a week of talks, workshops, school activity days. It kicks-off with a free family fun festival on Sunday 12th October 10am – 5pm at Victory Community Centre.

During the week there will be evening lectures, student events and workshops.

Further details are available on our Facebook page; www.facebook.com/celebratesciencewithcawthron

Free sheets clean card

— too good to recycle. PICSS Peanut Butter has free sheets of clean brown cardboard approx one square metre. They have available about 30–50 sheets per day. You can pick them up from their factory in Wakatu Estate, next to Pomeroy's.

Salisbury School has a **trailer load of tiles** in pale blue, fawn and black that are great for mosaics. There is more than they can use. If any school would like some could they contact Carolyn at carolyn@salisbury.school.nz. They are recycled and are free.

Check out Nelson Environment Centre's

new website www.nec.org.nz We'd love your feedback! Free clean renewable energy and much more! Check out Solar Roadways <http://www.solarroadways.com/intro.shtml>

Students making a difference

<http://www.iflscience.com/environment/19-year-old-develops-machine-clean-oceans-plastic>



Sustainable Coastlines

<http://sustainablecoastlines.org/about/overview/>

And

http://5gyres.org/what_is_the_issue/the_problem/

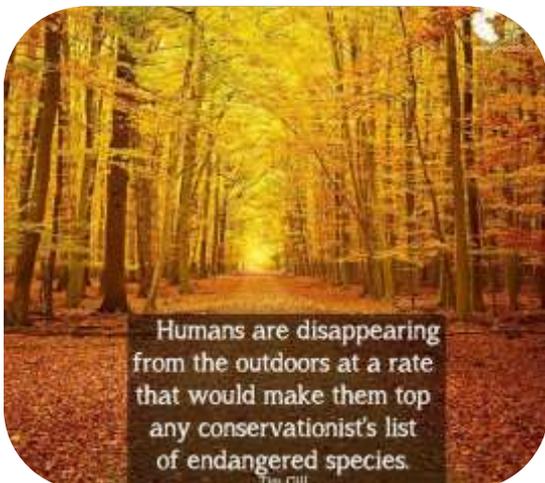
A quote with teeth – “Plastics: made to last forever, designed to be thrown away”

Where is a lot of it going? Fish are eating it and toxic components are coming up the food chain to us.

Enviroschools Early Years (ESEY) invite September 3rd

At Harakeke on Moutere Highway starting at 3:30pm

A colorful poster for 'Keep New Zealand Beautiful Week' from September 14-20. The text 'KEEP NEW ZEALAND BEAUTIFUL WEEK!' is written in large, bold, blue letters. Below it, it says 'LAST YEAR OVER 10,000 EVERYDAY KIWI'S GOT AMONGST IT AND HELPED MAKE NEW ZEALAND A LITTLE BIT MORE BEAUTIFUL!'. There is a form with fields for 'JOIN YOUR LOCAL COMMUNITY CLEAN UP', 'WHERE:', 'DATE:', 'TIME:', 'MEETING POINT:', and 'CONTACT:'. At the bottom, it says 'OR HEAD TO www.knzbcleanupweek.co.nz AND REGISTER ONLINE TO JOIN THIS LOCAL EVENT.' and lists sponsors like McDonald's and others.



Activity one:

Will a warming climate have more positive or negative effects?

A warming climate will have both positive and negative impacts. Local impacts are the most difficult to predict, making it a challenge to know exactly who or what will be harmed or benefit.

Generally, the risk of negative impacts from climate change increases the faster it warms. More rapid climate change makes adapting to change more difficult and costly. This is especially true for vulnerable groups (such as the poor, the very young and older adults) and fragile ecosystems which may struggle to adapt to even small changes. The IPCC (International Panel for Climate Change) suggests that temperature increases above the range of 3.5 to 5.5°F over the next 100 years, would dramatically increase the negative impacts of climate change. So a major aim of climate action is to reduce the risk and likelihood of large, rapid warming.

<http://www.geosinstitute.org/climate-science/faq-about-climate-change/538-will-a-warming-climate-have-more-positive-or-negative-effects.html>

Here is an alternative website questioning the validity of climate change models – it makes for interesting reading if you have the time: <http://www.drroyspencer.com/global-warming-natural-or-manmade/>. Students having an understanding of climate change is important as are the options of how their lifestyles can reduce pollution, including CO² emissions.

Greenhouse effect in a jar

Introduction

You can make a miniature version of the greenhouse effect in a jar! This is not actually the greenhouse effect

Materials

- 1 x large glass jar (with a lid)
- 2 x small thermometers (smaller than the jar height)
- 2 x pieces of cardboard slightly larger than the thermometers
- 2 x rubber bands

Assembly

1. Place one thermometer on a piece of cardboard (like a sausage on bread) and secure it with a rubber band. Repeat this exercise with the second thermometer. It is important the thermometer is fully covered by the cardboard so it can be protected from the sun. Place the thermometer, wrapped in cardboard, inside the jar and put the lid on.
2. Place the other thermometer outside the jar but facing down so it is also protected from direct sunlight.
3. Place jar and thermometer on sunny window-sill making sure that the thermometers are shielded from direct sunlight by the cardboard they are attached to.
4. Record the temperatures of both thermometers every 10 minutes for an hour or daily for a week. Present data on graph, table or chart.

Results

Discuss the higher temperature and reason for it, daily variations resulting from different light conditions, and how the glass jar has a similar effect to the greenhouse gases in the Earth's atmosphere.

Greenhouse gases in the atmosphere act like the glass in a greenhouse. They allow sunlight to pass through to the Earth's surface. When sunlight hits the Earth it heats the surface. As heat rises, some of it is trapped by the greenhouse gases. Without the greenhouse gases creating what is called the natural greenhouse effect, the atmosphere and climate on Earth would be too cold to sustain life.

<http://efs.tki.org.nz/Curriculum-resources-and-tools/Environmental-Education-Guidelines/An-Action-oriented-Approach>

Activity two:

An easy activity to measuring any climate change affect on plants

A way of checking any changes in climate on our seasons is to measure the affect on plants, and it is easy. Earlier or later flowering of trees can often affect the food source and therefore life cycle of particular insects and birds. There are lots of implications that can be investigated around this topic.

The activity: Twice a year hold a 'phenology' or senescence audit on deciduous trees and shrubs, or evergreens over a longer period. This audit is also called 'green down' or 'bud burst,' where students observe and record the dates when your chosen plants first create the buds for a flower or a leaf and open in spring, then again when the leaves fall in autumn. In New Zealand, we can now record these events, and check others, on the New Zealand Plant Conservation Network http://www.nzpcn.org.nz/page.aspx?flora_phenology_instructions.

There is international interest for research on local, national and global seasonal changes in plants.

Instructions can be downloaded from GLOBE <http://www.globe.gov/web/earth-systems/protocols> or Project Budburst <http://budburst.org/>



Lizard conservation at School

Skinks and geckos are the only 2 native families of lizard found in New Zealand. Based on New Zealand's threat classification system, almost half of our skinks and geckos are threatened or endangered. Staff members of the Department of Conservation (DOC) have a number of conservation projects focusing on species that are particularly at risk. They frequently collaborate on these projects with zoos, universities and Crown research institutes. These projects include breeding and keeping lizards in captivity, translocation, mammal control and habitat restoration. One way for students to get involved with lizard conservation is through the creation of lizard-friendly habitats. By making your garden or an area of your school grounds lizard-friendly, you can help protect remaining populations from predators and the impacts of habitat loss. For more information about the threats to our native lizards, see the web based article [Threats to native reptiles and amphibians](#).



Tips for attracting lizards

The Department of Conservation produces 3 helpful factsheets about [attracting lizards to your garden](#). These include the following tips:

- Plant a variety of native plant species including ones that provide protection from predators and species that will attract insects – an important food source for lizards.
- Mulch the garden to retain moisture and help create a humid environment for lizards and insects.
- Provide predator-proof crevices (about 5–10mm wide) for lizards to hide in. For example, you could use rocks, logs or old corrugated iron.
- Once you have created your area, leave it as undisturbed as possible.

<http://www.doc.govt.nz/getting-involved/conservation-activities/attract-lizards-to-your-garden/>

Activity three:

Directions for playing Planet Bingo

- 1 Have 1 Bingo card per player.
- 2 Agree on when and where you can all try to fill in your card e.g. on the way home, for home work, in the bus on a school trip from inside the school grounds?
- 3 Whenever you spot something that is on your card, mark that square.
- 4 Set the challenge for everyone playing – Bingo might be one complete line or column filled in, or it might be the whole card! You get to yell “Bingo!” when you complete the challenge.



Can you work out why these things are all on here? For example a real coffee cup is much better for the environment than a throw away one. What about the others?

You could create your own bingo card of actions taken at school – like a worm farm, paper recycling? Then get others in the class to try and complete them – who can find everything first and complete the Bingo card?