

# EcoBuzz

EcoBuzz Edition 64

Term 4 2016

Nelson Central School showing they are Treemendous!



**IN THIS ISSUE:** meet Heather, Ngatimoti go Beyond GreenGold, Earth Guardians vist us soon, CAS go dinosaur hunting and we learn about a Singularity hub.

## Kia ora tatou

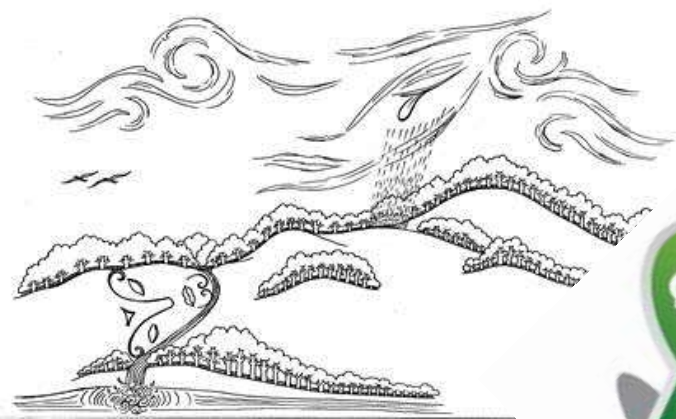
Last few days of school for 2016 – wow. How are you feeling – other than the predictable tired? Are you satisfied with the student learning you have supported this year? Are you excited at the awesome young people you have worked alongside this year? Are you feeling isolated and exhausted – lacking support and understanding you seek or is the management team hearing you and you feel glad to have this support? Or ....? We ask these questions as a part of our own reflection of the school year. We often ‘wrap things up’ with students, hold closing meetings for groups, have reflection meetings with enviro-groups and more, but what about you? How do you feel about your work year? We encourage you to take some quiet time to look back over the year and see how you feel about it. We often keep rushing on to the next task yet there is such value in creating space for our own reflection.

You may also have had quite a big shake up recently. The Atua were rearranging themselves, perhaps in response to how the world is being treated. A time to remember that, just as we learn through Enviroschools, everything is connected. In amongst the recovery we can support our tamariki to understand our natural environment from a scientific and cultural perspective and hopefully gift them an element of understanding and acceptance. It is a chance for us to take action and care for each other and be a good global citizen.

We have created this late in the year version of EcoBuzz to help inspire your planning for 2017. And some yummy heart warming holiday reading too of course ☺

Have a wonderful safe fun break and holiday season.

*Thanks Heather, Adie, Claire and Karen*



He aroha whakatō,  
he aroha puta mai.  
If kindness is sown  
then kindness you shall receive.

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## Nelson City Council update

It's been a busy time at Nelson City Council, and top of the list for us is the great news that we have a new Enviroschools Coordinator/Facilitator – Heather Graham. We'd like to say a big thank-you and farewell to Lindsey Fish and we're really looking forward to more great Enviroschools projects in the future.

A lot of hard work also paid off for all the people involved in Project Maitai, with the Maitai River being recognised as the second most improved river in the country – see the story below.

We'd also like to say a big thank you to all the Nelson schools who got involved in the planting programme this year – you all did great work.

Ngā mihi nui Karen

### Matai - second most improved river in the country!

*Auckland Point  
School students  
planting next to  
the Maitai River*



We are excited to report that the Maitai River was awarded the second most improved river in the country by the NZ River Awards at a ceremony in Wellington on 3 November.

These awards are based on long term data (10 years) so the improvement is likely to be a result of various small changes over a long period of time. It's great to know that river health is definitely heading in the right direction and Project Maitai/Mahitahi will help to continue that trend. Ka pai to everyone who has done anything little or big to help the river in the last few years because it all adds up to make a huge difference.

## Enviroschool is all about the back story. This is mine...

My enviro journey started in childhood really, being privileged to live in rural Rangitikei and spend my time helping with farming life. My recreation centred on being in and enjoying the natural environment. As I started my career teaching in the early childhood sector, I realised the impact these childhood experiences and heart connections were having on the choices I made as a teacher. Fast forward fifteen years or so and I embarked on a journey to find more information and support for how to integrate environmental education into my teaching.

My involvement with Enviroschools began as I led my Kindergarten's participation in a pilot project with Marlborough District Council (MDC) in 2012. One thing led to another as things do, and for the last few years I have, along with Kathryn Richards Facilitator and Kindergarten teacher, led the development of the Enviroschools Programme within the Marlborough Kindergarten Association.



On a personal note:

I am based in Marlborough and long ago when my children were young and I didn't work full time I loved camping and soaking up the summer sun or reading the winter away. However, life is pretty full now with my three children fast turning into adults. So when not working I spend a lot of time playing supporter and taxi as my children indulge their individual sporting endeavours.

When I have a chance I love to head up the hill for a walk, dabble in running or mountain biking and give my roller-skates a bit of a go. I also love hanging out with my partner whose passions in life are motorsport/speedway (sorry not very ECO!), mountain biking and surfing.

I am known for my laughter, energy and very real and relaxed nature.

Moving forward:

I am passionate about supporting teachers and school communities to deepen their understanding of the Enviroschools' kaupapa and find ways to ensure children feel connected to the world around them, to develop a sense of guardianship/kaitiaki and feel empowered to take action in positive ways.

I am now delighted to have the opportunity to take on Enviroschools as my key work focus and I really look forward to working with the experienced "Top Of The South - TOTS" regional coordination team of Adie Leng for Tasman and Annie McDonald, Marlborough, and their facilitators.

So whether you are ready for small beginnings or keen to reach out into your community, I am delighted to be a part of your Enviroschool journey.

"In the end we will conserve only what we love;  
we will love only what we understand and  
we will understand only what we are taught" -Babe Dioum

HEATHER GRAHAM

Enviroschools Regional Coordinator and facilitator

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Facebook - Nelson Enviroschools Leadteachers (closed group)





We have a shared Enviroschools Facebook page - please join us 😊

Enviroschool Nelson Tasman <https://www.facebook.com/groups/893607044069121/>

## Ngatimoti School leading the way

Ngatimoti School is renowned as the first Enviroschool in the top of the South. It started in 2002, with Principal Ali Turner. Ngatimoti reached the Green Gold level in 2010 and the recent review of that status on 25th November 2016 showed just how much they have deepened their commitment to having students leading the way in sustainability thinking and actions.



Over the last two terms the school reviewed their rich RIVER and AWARE values in their programmes and practices, which align easily with the Guiding Principles of the Enviroschools Programme. The students, who were well set up by their lead teacher Debbie Godsiff, planned all the presentations for the reflection process. Along with the students, Debs and Adie Leng, the reflection team comprised Councillor Peter Canton, Heather Graham, the new Regional Coordinator for Nelson Enviroschools, Sandie Burn, the lead teacher for the first Tasman ECE Green Gold Enviroschool as well as past students and adults who support many of the projects with Ngatimoti School. We met each other over morning tea for which the Enviro-leaders even baked muffins.

The students presented their knowledge, actions and plans for their butterfly project and new wetland project. Everyone played the specially created game about their bee project and we did some stream study in their ongoing school stream project. We were outside in the light rain but the invitation did say bring a raincoat and gumboots! We were all wowed by the huge range of learning and action that integrate sustainability within the School. The Enviro-leaders represented their School in a way that all of their parents and teachers would have been proud. Everyone in the school had enjoyed an Enviro-week of activity and knowing they are still a wonderful GreenGold Enviroschool capped off the week. The many next steps suggested offer an exciting opportunity for the School going forward. Congratulations Ngatimoti School.



## SingularityU New Zealand Summit - Understand, Adapt & Thrive

By Jo Calt at MOTEC

(Motueka Technology based at Parklands School)

Christchurch hosted the first ever, Singularity U(niversity) Australasian Summit over November 14-16 and I was lucky enough to be funded to attend.

This Summit was three days of listening to some of the most amazing minds talk about the future of: Healthcare, Education, Transport, Work, Energy and Crime. The presenters really challenged our thinking about what we know about these important aspects of our everyday lives. Artificial Intelligence, Digital Biology, Space, Economics and Baby X were also on the programme. The rate of the advances in these areas is unbelievable, fostered by the belief that “*The best way to predict the future is to create/invent it*” Dennis Gabor.

Kaila Colbin (NZ Ambassador, Singularity University) says of her experiences of the Singularity University, “there was a total paradigm shift about the nature of technological progress, and an appreciation for precisely how dramatic the impacts will be on every aspect of our lives.” After attending I thoroughly agreed.

Singularity University’s mission is to educate, inspire and empower leaders to apply exponential technologies to address humanity’s grand challenges. These include: learning/akoranga – Water/Wai – Space/Tuarangi – Health/Hauora – Environment/Taiao – Food/Kai – Energy/Pūngao.

Check out the SingularityU New Zealand Summit Facebook page for more information.



Some of the presenters at the SingularityU NZ Summit are on-line delivering very similar talks. Do check out the links below.

Sue Suckling: The Future of Education

<https://www.youtube.com/watch?v=l4074r6VuE>  
(Sue starts 3.38)

Mark Sagar: Baby X <https://www.youtube.com/watch?v=k7eeV9VEtsA> (baby starts at 9.59)

Raymond McCauley: Digital Biology – Biocurious <https://www.youtube.com/watch?v=N2vXsnlHXcA>  
(Biocurious starts at 6.41)

Brad Templeton: The Future of Transport – Robocars <https://www.youtube.com/watch?v=sqjavqCLpRU>

Ramez Naam: The Future of Energy <https://www.youtube.com/watch?v=tYT1b7cvvmY>

## Dinosaur Footprint Hunting - Collingwood Area School

On the 12th of September 2016 a group of students from Collingwood Area School headed out to the West Coast of Golden Bay to try and make new discoveries, of dinosaur footprints. After travelling for what seemed like hours to the secret spot, we ventured out with shovel and spades in hand to begin exploring the land. We were taken to a place where sediment was sandwiched together and mud was layered thickly underfoot. In order to reveal the footprints, we scooped mud away from the bedrock, which followed the bands of sediment where previous footprints were found. We followed these bands and were able to figure out which direction the dinos were moving 70 million years ago, because when they were walking, the heel would hit the ground first making the depression of sediment. We followed along the path where the dinosaurs would have also been walking and, using buckets of water, brooms and shovels, we swept away the mud.



Within the first 20 minutes we found one. A small footprint approximately 7cm in diameter heading in a western direction. Although it was small it gave us the hope to keep moving mud to try to find another. A few hours passed and there were no more discoveries but the buzz of finding something was still very much there. In the process of sweeping, we learnt more about the land. The age of the land showed that the more inland you head, the older the rocks get. We were also told that when the dinosaurs roamed, although it was the same place, the environment would have been different to what it is like now with there being more and diverse grasses, as well as changed landforms. There were footprints grazed into the side of built up rocks made from the stacked sediments that were compressed to make one whole rock. They were mainly made up of two different types of sediment, one more golden and the other darker grey. Each layer was a period of time, the golden was when it was more of a beach area, with small grains of golden sand, and the grey was the period we are currently in, with the plains covered in silt and mud. The footprints in the land form were revealed by the erosion and/or the displacement of rocks.

What I gained most out of this great opportunity is seeing how the four scientists worked. They worked with enthusiasm and passion for what they were doing and for the environment they were in. Something as a student I found very inspirational, as they care so much about making these discoveries. Their passion was also reflected by their enthusiastic explanations of how all the elements of streams, fault lines and sediment worked together to preserve the footprints. Not only was seeing how much they care about their jobs that fascinated me, but also it was incredible having the opportunity to interact with the scientists in the field and classroom. I was lucky enough to talk with them about geology and how they got to the positions they are in. Because I've always had such a passion for geology, their guidance and tips were so beneficial and I was even offered to be taken around GNS and areas around Wellington.

I would like to thank the GNS scientists for inspiring all of the students and showing us that there is so much more out there if you know what you are doing just to move a little mud, with care.

Meghan Zeller Year 13



## Salisbury School Centenary

Salisbury School in Richmond has been a Green/Gold School since 2010. The School recently celebrated its centenary on the 1st and 2nd of October.

The highly successful weekend included a Powhiri to welcome guests, unveiling of a panel depicting Salisbury's history from 1916 to the present and speeches from the local Mayor Richard Kempthorne and local MP Damien O'Connor.

Photographs were taken, including students and staff covering the years from 1944 to 2016 and the present Board of Trustees.

Several trees of significance were planted in the native bush area by dignitaries and students.

The evening dinner was attended by over one hundred guests and Sunday's bus trip down "Memory Lane," to a variety of local areas of interest, created a lot of nostalgia.

The whole weekend was made possible by the support of the local community, who rallied behind the School providing volunteers for parking, serving food and pre-weekend garden tidy up. *By Carolyn Shirtliff*





## Pinegrove Kindergarten learn about life cycles in a very real way!

By Karen Walsh

Our natural environment is full of surprises and what a privilege to have first hand experience of this.

Spring has sprung as our frogs have woken up from their long winter sleep and have started eating the Mealworms (commonly known as Mealie worms) that we put in the dish for their dinner. We so enjoy watching them.

We are really good now at breeding Mealie worms to feed the frogs and marking each of the worms' milestones, like when our newest editions to the Mealie worm family arrive. Two of our pupae have hatched into Darkling Beetles and enjoying having a swim in their water container. Then we know our Darkling Beetle Life cycle is complete and ready to start the cycle again.



*The light brown beetles above are our newest edition to the family.*



We have been offered some more tadpoles so we can begin exploring the life cycle of tadpole/ frog (metamorphosis) once again and of course they will eat Mealie worms, which have their own lifecycle!

*This is the life cycle of the Mealworms.*

Contact us if you want to find out how we have maintained both the frog and Mealworm life cycles over many seasons. We are in Brightwater, phone 542 3447

## Nelson Central School wins Treemendous garden makeover!

Nelson Central School staff and students were delighted to find out they had won a Treemendous garden makeover worth \$10,000. Treemendous School Makeovers, a joint initiative between the Mazda Foundation and Project Crimson, promotes children learning about the importance of caring for the environment through the development of outdoor classrooms [www.treemendous.org.nz/](http://www.treemendous.org.nz/).

The Award recognises the enormous efforts made this year by the school's Envirogroup and by teacher Lynley Walters. Together, Lynley and the group have been working hard to create natural habitats within the school grounds, aiming to bring more wildlife into the area. They will use the Award to create a sensory garden within the school grounds.

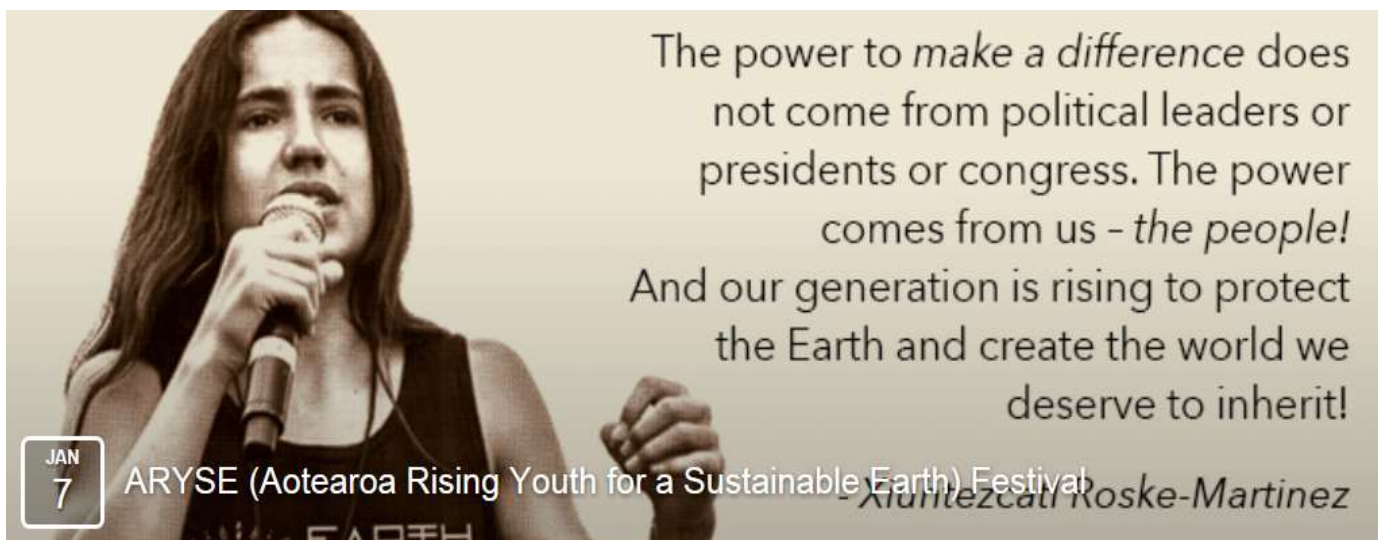
The Envirogroup has also been involved in many other sustainability projects around the school throughout the year. As a newly formed Envirogroup, they wanted to reduce waste. The first step was to conduct a whole-school waste audit, for which they had the help of the facilitators from Envirogroups and Nelson Environment Centre's Waste Education Services (WES), both programmes funded by Nelson City Council.

After the waste audit, the students got busy making an action plan. They decided to convert the lunchtime food scraps they generate daily into rich compost, but first they needed to design and build large compost bins and of course a veggie garden! They called in the WES facilitator to show them how to build healthy compost, and got going.

A lovely parent Joe Hay built three large wooden compost bins from materials donated by Placemakers Nelson; using funding from Nelson City Council the school bought food scrap bins, sack barrows, garden tools, and a four-layer worm farm which they will get up and running early next year.

The students are currently planning the movies they will make to educate the rest of the school about the new composting and paper recycling systems. Hopefully these movies will be completed by week 8 so the School can get a couple of weeks composting underway before the end of the year.





## EARTH GUARDIANS AOTEAROA and EARTH GUARDIANS GOLDEN BAY presents: THE ARYSE TOUR – JANUARY 3-16, 2017

Youth leader of Earth Guardians, climate change activist, eco-hip hop artist and change agent, Xiuhtezcatl Tonatiuh Martinez is coming to New Zealand from January 3-16, 2017. He and members of his family will be speaking, facilitating youth leadership workshops and performing original eco-conscious hip hop music in Wellington, the Nelson region and in Golden Bay for the ARYSE Tour (Aotearoa Rising Youth for a Sustainable Earth).

Xiuhtezcatl (pronounced, *shoe-tez-caht*), who is 16 years old, has spoken at the UN high level climate change event in 2015 and at the UN Leaders' Summit this year. He is recipient of many youth leadership awards and is a keynote speaker in demand across his native US and abroad. He recently was awarded the Children's Climate Prize. He is especially renowned for his motivational impact on youth, inspiring them to use their passions to build a more sustainable future.

While in Wellington, Xiuhtezcatl, his older sister Isa and his mum Tamara will participate in an event at Te Papa Marae highlighting his unique, eco-conscious music with its lyrical messages of challenge for change. He will be joined by other New Zealand musicians, and local panellists to discuss pertinent environmental issues.

In the Nelson region, Xiuhtezcatl will collaborate with youth councils and organisations dedicated to creating a more sustainable future and in addition he will be on stage with Fly My Pretties on the 13th of January. While in Golden Bay, he is the keynote speaker and major contributor to the ARYSE Festival taking place between 7 – 10 January with creative workshops and performances focusing on inspiring youth to use their gifts to build a better world. Xiuhtezcatl says he is 'stoked' to finally get to New Zealand and generate impact in Aotearoa. He's especially excited to meet and get to know members of the Earth Guardians crews and to help inspire youth to be the change the world needs today.

For more information, pictures, video links and contacts: <http://www.earthguardians.org/>

"There are very few young people who have put so much time and effort into educating themselves and taking action on behalf of the youth of the world. Xiuhtezcatl's voice is one of a generation in peril, his environmental knowledge and commitment to halting Climate Change are unparalleled." *Mark Ruffalo*

There is a 'givealittle page' to help crowd-fund this not-for-profit visit. Please help <https://givealittle.co.nz/cause/xiuhtezcatlnewzealand>

**Venture out,  
explore,  
collect...**



**DOC's 'in the environment'  
education resources**



A series of investigation tools for primary and intermediate schools throughout New Zealand. The resources encourage students to go outdoors, explore local green spaces, and collect robust scientific data that leads to action for local conservation. The first three resources in the series are available online. Find all our Conservation Education resources at [www.doc.govt.nz/education](http://www.doc.govt.nz/education) plus information about our programmes. The series, underpinned by DOC's action-orientated inquiry learning process, encourages students to participate in citizen science projects and includes Science, English, Maths and Social Sciences learning objectives. [www.doc.govt.nz/education](http://www.doc.govt.nz/education)

## Someday Stories call

Young voices speaking out about the future. Someday Stories is a series of six sustainability-focused short films by young New Zealanders. It is the next phase of The Outlook for Someday sustainability film project.

Each film will be 8-12 minutes and made in the first half of 2017 by an emerging film-maker / production team aged 18-29.

The completed films will be screened by The Wireless, Māori Television On Demand and Thecoconet.tv (Screen Partners). They will also be entered into international film festivals. Funding of \$10,000 is available for each commissioned film, which will be selected by the Screen Partners and The Outlook for Someday from proposals received by 16 December 2016.

Each film-maker/team will also be assigned a production mentor from the New Zealand film industry.

A Request for Proposals (RFP) is available at [www.theoutlookforsomeday.net/someday-stories](http://www.theoutlookforsomeday.net/someday-stories)

The RFP calls for films that are diverse, innovative, imaginative and eclectic.

“The films might be edgy, enchanting, funny, inspiring, reflective... Together they will spark ideas, stimulate debate and convey important information.”

The initiative is supported by NZ On Air, the New Zealand Film Commission and The Body Shop.



## The core principles of Ecoliteracy:

**Nature is our teacher.**

**Sustainable living is a community practice.**

**The real world is the optimal learning environment.**

**Ecological literacy is rooted in a deep knowledge of place.**

[www.ecoliteracy.org](http://www.ecoliteracy.org)

## Youth Enviroleaders Forum (YELF) 2017

The Sir Peter Blake Trust is bringing together keen young environmentalists for the 2017 Youth Enviroleaders Forum. 2017's theme is OCEANS.

The YELF programme is a fully funded, week long leadership development adventure which is open to all year 11-13 students in New Zealand. Young people with leadership potential and a passion for the environment come together to take part in outdoor adventures, learn about topical environmental issues facing our country and develop strategies to address them.

The YELF forum can open doors to Young Blake Expeditions – offering incredible opportunities for expeditions to remote and environmentally significant areas such as the Kermadecs and Sub-Antarctic Islands where students can learn from world class scientists and environmental leaders.

Check out the [Sir Peter Black Trust website](http://www.sirpeterblaketrust.org), to download the 2017 prospectus for more information.

Applications open: December 2016 – February 2017



*Planter box ideas – let your students get creative! Look at these beautiful birds.*

## Helping our students become engaged citizens can start young – learning about voting.

Students at Peabody School in America participated in a variety of voting activities. Here is a link to view Peabody's Voting Day video. [www.youtube.com/watch?v=dZO\\_F2AOvGw](http://www.youtube.com/watch?v=dZO_F2AOvGw).

How could you adapt it to your class and New Zealand?

## Carisbrook School in Dunedin are seeking signatures for a Petition to the House of Representatives to ban the single-use plastic shopping bag in NZ

This petition has been written by the students of Carisbrook School. They would like to deliver this to the steps of Parliament in March 2017 with as many signatures as possible showing strong support from the citizens of New Zealand. Please contact Anna at [anna.hughes@dcc.govt.nz](mailto:anna.hughes@dcc.govt.nz) if you are able to help gather signatures in your community.

Here is a link to the news item on Dunedin TV <http://www.channel39.co.nz/news/protest-against-use-plastic-bags-gains-momentum>

## Tasman Nelson Environmental Activity 2017

Activity	Date	Purpose
Nelson Tasman Big Beach Clean	Register by 21 Dec 2016 for Mar 4 event below	The day for the community to clean up the whole of Tasman Bay coast from Delaware Bay to Marahau <a href="http://www.doc.govt.nz">www.doc.govt.nz</a> regional events – Big Beach Clean <a href="mailto:BigBeachCleanNelsonTasman@doc.govt.nz">BigBeachCleanNelsonTasman@doc.govt.nz</a>
Nelson Primary coffee & Kit term meeting	4.00pm 9 Feb	Venue and agenda to be confirmed
ECE network meeting	Monday 13 Feb	Tasman ECE Venue
Secondary: Environmental Youth Leadership Hui with DOC & Councils	Saturday 18 Feb (tbc)	To support environmental leaders in secondary schools to set sustainability goals and to plan for exciting actions to reach them
Seaweed	25 Feb to 5 Mar	Look out for local activities
Big Beach Clean – all Tasman Bay coast	Saturday 4 Mar	Coastal sites allocated in January
Moturoa Mission	Wednesday 22 Mar	Secondary students planning for &/or taking activities. Years 5–8 Envirogroup teams sustainability challenges with the range of environmental agencies and groups from Nelson and Tasman
Cross-sector EnviroSchools network meeting	27 Mar or 3 Apr tbc	How does the Action Learning Cycle work for a project?
New resources: Theme workshops Tasman	4.00pm 8 May Motueka	Exploring the EnviroSchools new theme resources
Nelson Primary coffee and kit term meeting	4.00pm 17 May	Venue and agenda to be confirmed
ECE network meeting	Tuesday 13 June	Nelson ECE Venue
Cross-sector: Matariki –Māori Perspectives	Thursday 22 June tbc	It's more than the language – incorporating Māori perspectives in teaching and learning
Cross sector EnviroSchools Teachers Hui – Lake Rotoiti	Fri evening, Sat 4 – 5 Aug	Marlborough, Nelson and Tasman teachers from secondary, primary and ECE sectors PD
Nelson Primary coffee and kit term meeting	4.00pm 15 Aug	Venue and agenda to be confirmed
ECE network meeting	Thursday 14 Sept	Tasman ECE venue tbc
EnviroSchools theme workshop	4.00pm Thursday 19 Oct Motueka	Cross-sector
ECE Sharing of Practice	Monday 30 Oct	Pecha Kucha sharing Nelson venue
Nelson Primary coffee and kit term meeting	4.00 pm 2 Nov	Venue and agenda to be confirmed

## Activity: a taster from the DOC education resources: Invertebrates in Te Ao Māori

Invertebrates are an important part of the natural world in Te Ao Māori. The insect world is known as Te aitanga pepeke. Tāne (Atua/ God of the forest) and Punga (another Atua, son of Tangaroa) created the trees, birds and insects of the forest. There are many legends, songs, whakatauki (sayings) and traditions about the importance of insects and our connections and reliance on them.

Which insects can you enjoy observing on the plants in your grounds? Every plant provides a habitat or food for its own range of insects and this aspect of ecology help keeps the plants in balance.

### Explore the importance of insects in Te Ao Māori using these songs/ poems

Explore the vocabulary and concepts in the two songs below. Students can then create their own songs and/ or poems about an invertebrate they can observe, using ideas from the songs they have heard. Songs can include the sounds insects make, how they move and look, sayings or stories and the Māori names, just like this one about the Pūriri moth, the friend of the Pūriri tree, mostly found in the North Island.

The Pūriri moth's other name is the 'ghost moth' as it flies at night, is green and is very large.

### Pepetuna (pūriri moth) song/ poem [teara.govt.nz/en/music/12619/pepe-tuna-puriri-moth](http://teara.govt.nz/en/music/12619/pepe-tuna-puriri-moth)

*Pepe-tuna nunui*

*Kēhua kākārīki*

*Wairua rere o te pō*

*Pepe-tuna nunui*

*Kēhua kākārīki*

*rere runga pūriri e.*

*Large pepe-tuna (pūriri moth)*

*A green ghost/ apparition*

*Flying spirit of the night*

*Large Pepe-tuna*

*A green ghost/ apparition*

*Flying on to a pūriri tree.*



Credit - Bradford Haami, Te Ara—the Encyclopaedia of New Zealand

### Pūrerehua (butterfly) song by Dr Hirini Melbourne

Words and translation: <http://hope706.tripod.com/sitebuildercontent/sitebuilderfiles/purerehua.pdf>

Animated version with translation: <https://www.youtube.com/watch?v=gLcLWC538rs>

### Other resources relating to Māori perspectives of invertebrates

Te Ara: stories and sayings from Te Ao Māori relating to insects: [teara.govt.nz](http://teara.govt.nz)

A video of Dr Peter Buchanan describing a carving at a Landcare Research building which tells the story of the creation of insects: (2m 57s)

[www.sciencelearn.org.nz/exploring](http://www.sciencelearn.org.nz/exploring) Māori perspectives

### Brand new resource

Find more in the Department of Conservation Invertebrate downloadable resource:

<http://www.doc.govt.nz/education-experiencinginvertebrates>

