ENVIRONMENTAL MONITORING & ACTION PROJECT 9

A combined delivery of GLOBE and the National Waterways Project June 2008

At EMAP, our aim is to encourage school groups to connect with their environment through monitoring. By monitoring, students learn that even the most humble stream can support a rich diversity of life. They will understand that some of our land-use activities do not support maintaining these healthy environments. With this knowledge will come empowerment, which inspires students and motivates them to take action. Here we profile the success of our EMAP annual event 'March Monitoring Month and Koura Kraze' 2008, which encouraged school groups to go out and monitor their waterways and report on the presence or absence of koura (freshwater crayfish), which can act as an indicator of waterway health. We also answer the call from teachers who ask what school groups can do to make a difference in their local environment and what resources you can call upon to assist you in environmental action-taking in your school.

Why monitoring an environment matters!

Today, especially in urban areas, people are separated from their environment. Nature is seen as somewhere 'out there' and not an everyday part of people's lives. As a result many people fail to connect 'how they live' with the effect it is having on their local environment.

How do we solve this problem? We need to 'reconnect' people to their environment so they care about it and will implement solutions to try to improve it. The revised curriculum has signalled that developing this 'ethic of care' should be encouraged, modelled and explored as part of creating a society that values ecological sustainability. At EMAP we see getting young people involved in monitoring as a key first step. Spending time in an environment has been shown to help students develop feelings of ownership over a resource, which is needed to inspire them to take action to improve it. At EMAP we offer as a 'first step' the National Waterways Project, a hydrology monitoring programme. The 'next step' is GLOBE (Global Learning Observations to Benefit the Environment) where, in addition to hydrology, students can explore areas such as soils, atmosphere and land cover.

> *We want to restart people caring for the environment as it must be cared for, and we want to do this through adventure, through participation, through education and through enjoyment.*
>
> —SIR PETER BLAKE

By now we hope you are all convinced of the value of monitoring and are enthusiastic about getting started. Many of you will probably need advice on setting up a monitoring project in your schools. Below is a strategy you can use to start you off on your learning journey and become part of the EMAP project.

Visit our website www.emap.rsnz.org to familiarise yourself with our project and see what we offer.

Contact one of our regional coordinators or the EMAP national coordinator via www.emap.rsnz.org.contact.html to discuss your needs. These facilitators can work with you on your project in your region or point you to a local partner organisation who can help.

Pitch your environmental monitoring idea to your HOD or principal. You will find it valuable to have them on board. Use this link http://emap.rsnz.org/studyareas.html to summarise what EMAP is and why it will be beneficial for your school.

Makuri School in Manawatu sampling their local environment as part of March Monitoring Month.

To help plan your waterways trip we have all the RAM's forms, safety advice and other resource material you may need. Visit http://emap.rsnz.org/resources.php and look under EMAP general resources.

If you wish to become a GLOBE school we will organise a workshop in your area. A model training PowerPoint can be found on http://www.emap.rsnz.org/pdf/GLOBE%20Workshop.pdf.

For additional support contact the EMAP National Coordinator Rebecca Goffin (04) 470 5772 or rebecca.goffin@rsnz.org.

March Monitoring Month madness!

In March many enthusiastic students became pollution detectives with the support of equally dedicated teachers. They used water monitoring equipment to study the health of their waterways, search for koura (freshwater crayfish) and complete water based projects. We were staggered by the high quality of entries received. These included numerous PowerPoint presentations, cartoon strips, posters, photos, blogs and stories about their water monitoring activities. A panel of judges had the difficult job of distributing prizes. We had over $5000 of prizes to give away thanks to fantastic sponsorship from BOC 'Where there's water' Environmental Grants Scheme and SciTech NZ.

Plans are underway for a bigger, brighter and even more successful March Monitoring Month in 2009 with BOC generously agreeing to again be our major sponsor.

BOC

SCITECH NZ LTD

prize winners prize winners prize winners prize winners prize winners

Major prize winners

9MKE Katikati College – Bay of Plenty
Room 19 Levin East School – Manawatu/Wanganui
Room 4 Opoutere School – Coromandel

Additional prize winners

Baverstock Oak School Wai Care group – Auckland
Cheltenham School – Manawatu
Kokathi-Kowhitirangi School – West Coast
Karapiro School – Manawatu/Wanganui
Salisbury School – Nelson
Dargaville Intermediate School – Northland
Logan Park High School – Dunedin
Makuri School – Manawatu

Katikati College

With the enthusiasm of their teacher Hilary Johnson, 9MKE undertook a comprehensive study of their local waterway, the Uretara River. Each student produced a detailed report summarising the results of their water monitoring activity. Impressively they also completed PowerPoints, created stream models and invented a game called 'fishing for bugs'.

Levin East School

Room 19 and their teacher Gina Wan turned March Monitoring Month and Koura Kraze into a school camp activity. They entered details about the river and where they found koura on the website. They also produced koura conservation posters, took photos and each member of the class produced outstanding PowerPoint presentations.

Opoutere School

Room 4 at Opoutere School in Coromandel, with fantastic support from their teacher Jenthro Dyer, really got into the spirit of March Monitoring Month and Koura Kraze. They produced class displays, carried out a comprehensive stream investigation and organised a PowerPoint assembly presentation showcasing their activities.

Koura Kraze 2008

This year we had over thirty schools from all around the country enter data on the EMAP website. It was great to see that schools also reported if koura were not present in their local stream.

The competition for best koura photo was fiercely contested with some great budding photographers out there capturing amazing photos of koura!

Koura sightings were reported from all around the country in 2008!

Isn't this an impressive photo of koura? Tell me what you think at rebecca.goffin@rsnz.org

Koura Kraze major prize winners

Best photo: Baverstock Oak School
Runners-up: Opoutere School, South East Primary School
Highly Commended: Ngamatapouri School, Cheltenham School, Levin East School

case study

Looking to the future – community-based caring for environmental resources

The East Cape region of the North Island stretches for over 250 km and includes diverse coastal environment, rivers and wetland systems. As the National Waterways Project and WhiteBait Connection have become established, we've seen some practical development around the learning experiences and understanding of river ecosystem dynamics and catchment characteristics in our region. For instance, each school is encouraged to adopt a river, stream or wetland, explore its nature, and record this in a form that can be entered on a regional database.

Schools are then encouraged to link with other schools or community groups to visit different waterways, so a kind of 'buddy system' is developed. This is particularly important for urban students whose only stream may be highly degraded and short on life, but also for rural students to gain an understanding of the effects of uncontrolled urban and industrial expansion. Another key component in our waterways study is the mapping and evaluation of land use and catchment processes influencing water quality and resource abundance in our rivers, and the relationships between these processes and the coastal environment.

Under the guidance of Jason Love and the teachers at Whangara School, students have monitored the various areas within the Waiomoko River, mapped land-use patterns and geology in the catchment, and established a significant riparian planting programme. This has been done with the support of local landowners, the Department of Conservation, and the local Tairawhiti Polytechnic. This catchment-based study is continuing; students have recently been exploring the mouth of the river and the extensive natural dunelands to either side, and investigating the biology of coastal species such as koura and paua.

On land, autumn is the time of 'mists and mellow fruitfulness'. It's also the time when many of our native fish head for estuaries and river mouths on the journey to fulfill their life cycles. Inanga assemble to spawn amongst the waterside vegetation, and longfin and shortfin eels gather awaiting the conditions that signal their epic journey to the equatorial Pacific. Mullet and flounder, kahawai and parore, can also be found here, full with roe and spelt.

These rivermouth settings were also the venue for communities coming together to gather and preserve food for the winter months ahead. This still happens in many coastal areas, but now is supplemented by school groups and research teams looking at the behaviour of key diadromous species. With such a collaborative approach, basing much of our work around key river 'events', it is hoped that an understanding of these events and their ecological contexts can be better understood at a hapu and regional level.

Thanks to Murray Palmer, East Coast EMAP Coordinator, for this article.

This photo shows some of the characteristics of the migratory longfin eel. Will Kahukura of Whakaki says, "I try and encourage my cousins not to take these large longfins when they catch them in their nets. They're the breeding females and are becoming increasingly rare. They need to be protected and allowed to make the journey to their ocean spawning grounds."

droplets

- Inspired to implement a weed control programme with your students in your school? Wondering how to set up and run it? A good start is to get a copy of 'Weedbusters', an integrated teaching resource for schools. Visit www.weedbusters.org.nz for more information.

- Oracle Education has a range of science based DVDs available for schools to purchase. Topics include the life of deep sea crayfish, Jim Hickey and the weather and the science of plastics. Contact info@oracle.ac.nz or order online at www.hippo.co.nz.

- We all know the effects human activities can have on New Zealand's water systems. What is less well known is the impact of these activities on human health. Harvesting shellfish or 'wild kai' from the sea (kai moana), rivers (kai awa) and lakes (kai roto) is central to Maori lifestyle, but what effect is maintaining this traditional relationship having on Maori health? This is the question asked in pioneering research carried out by NIWA and local iwi. For more information contact Dr Ngaire Philips nr.philips@niwa.co.nz.

Dig in to making a difference in your environment!

So you have successfully monitored your catchment, found out that the health of your waterway is poor and that many of the species you would expect to find there are missing. What do you do then? How do you move from monitoring to taking action? What is often missing is simple, practical advice on what steps students can take to improve their environment. This month we have drawn together spokespeople from different agencies which can give you the practical advice you need to move forward and make a real difference.

Vision without action is merely a dream.

Action without vision just passes the time.

Vision with action can change the world.

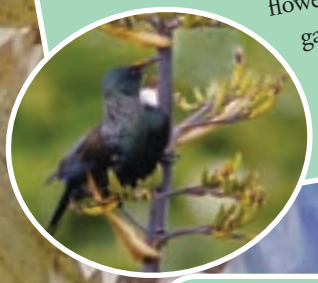
—JOEL BARKER

Attracting native birds

Plantings can also be designed to provide food sources for native birds such as tui. First work out what plants are current food sources. A good plant identification guide is 'Which native tree?' by Andrew Crowe.

Tui mainly eat nectar producing species but also rely on fruit. Thus you need to find out when these species fruit and flower. Providing a year-long food supply should be your goal. The Department of Conservation (DOC) link www.doc.govt.nz/templates/MultiPageDocumentTOC.aspx?id=44118 is useful.

Next create a calendar of what species flower and when, to show where food gaps exist. Look for plants that fruit or flower in these gaps, and plant accordingly.



Removing weeds

Invasive weeds are a major threat to New Zealand's natural areas. Many of them started out as ornamental garden plants, but have 'jumped the fence' and invaded our iconic landscapes. Invasive weeds are also a major issue along many waterways, crowding out native species, changing the habitats for fish, invertebrates and birds, and restricting access for humans.

Weedbusters is an interagency awareness programme that aims to get communities and schools involved in dealing with weed issues in their own areas. Their website at www.weedbusters.org.nz contains a search function for over 100 weeds, including photos, information and control methods for each species. Regional Weedbuster coordinators can also assist school groups. For more information, email the national coordinator at info@weedbusters.org.nz.

Thanks to Carolyn Lewis, Weedbusters National Coordinator.

Stream restoration planting

Stream health can be improved with a well designed planting programme. The Wai Care coordinated 'Wild Connections' project, in Manukau City, is a good example. Their vision was to create a network of local schools and volunteers in a collaborative project.

With a grant from the Nestle Community Environment Programme, greenhouses were constructed at four Wai Care schools. Students propagated and then planted native trees, learning about their ecology and medicinal values. More careful planting and less vandalism resulted.

A successful planting programme relies on a well prepared and maintained site and careful species selection. Vigorous colonisers that can subdue competitive weeds include manuka, kanuka, cabbage tree, mahoe, and kohuhu with some lancewood, lacebark, five finger, kowhai, flax and toetoe. Contact Andrew Jenks (09) 262 5104 or visit www.emap.rsnz.org for more funding opportunities.

Thanks to Andrew Jenks, Wai Care Facilitator, Manukau City.

Background photo: Lucy Newlands, Melanie Knottenbelt and Hayley Sherriff, Katikati College.

We look forward to helping you and your students achieve your goals. For further information regarding EMAP, contact
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