

Enviroteach

An Environmental Education Resource for Teachers



From the Editor

Education for sustainability (EfS) is about learning to think and act in ways that will safeguard the wellbeing of our planet and future generations. At first glance this appears to be a goal that everyone would agree on. However, sustainability issues can be quite complex and they are often contested. Students need support to develop knowledge and understanding of sustainability. Teachers can help by providing opportunities for students to experience aspects of their environment first-hand; find and analyse scientific and other sources of information; explore a range of social, cultural and historical views; and consider alternative ways of doing things.

This issue of *Enviroteach* highlights a range of tools for accessing information about and investigating Southland's environment. It also offers free resources and professional development opportunities for teachers. Environment Southland's education team is here to help! We offer EfS support to schools free of charge, so contact us on 0800 76 88 45 or education@es.govt.nz.

All the best for term four!

Pat Hoffmann
Environmental education officer



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Stream Studies

Students measuring water clarity during a Stream Connections field trip

Environment Southland offers expert assistance to schools wanting to learn more about freshwater. We have compiled a resource called Stream Connections which contains information for teachers about freshwater and water quality in Southland. It includes classroom activities, curriculum links and step-by-step instructions for field trips.

Our environmental education officers, Pat Hoffmann and Mark Oster, are teacher-trained and able to assist you with your water-focused learning programmes. We can help you with your planning, give a talk to your class, do some activities at your school, or accompany you on a field trip to a stream. We have all the equipment needed to do a fun, science-based stream study with your class. Refer to the October 2013 issue of *The Squawk* for photographs from some of our Stream Connections field trips (www.es.govt.nz/for-schools/educational-resources/squawk/).

We also run professional development workshops to deepen your knowledge about freshwater issues, to develop your understanding of the science of water quality and to encourage you to use the Stream Connections resource in your classroom and on field trips. See page 3 for more information.



Identifying freshwater invertebrates



Students measuring water temperature and pH

Download the Stream Connections resources from our website:
www.es.govt.nz/for-schools/educational-resources/stream-studies/

STREAM CONNECTIONS

workshop and field trip for teachers

TUESDAY 17 NOVEMBER 2015, 9.45AM – 3PM

Winton (Southern REAP Community Rooms – 224 Great North Rd) and the Oreti River

Join us for the day to learn more about freshwater and develop your confidence to run stream studies with your students. You'll receive your own FREE copy of the Stream Connections resource and participate in a practical stream study at the Oreti River. Environment Southland is offering a limited amount of funding for teacher release - so book your place promptly.

PLAN FOR THE DAY

- 9.45am** Cuppa
- 10am** Welcome
Overview of Stream Connections resource
Preparation and tips for field trips
- 12.30pm** Lunch
Drive to stream study site (Oreti River bridge on the Wreys Bush-Winton Highway)
Practical stream study
- 3pm** Depart

ENVIRONMENT SOUTHLAND WILL PROVIDE

- Morning tea and lunch
- A *Stream Connections* folder
- Funding for teacher release (\$250 + GST)

WHAT TO BRING

Clothing suitable for being outdoors (including warm, windproof, rainproof layers), gumboots (or gym shoes that you don't mind getting wet), waders if you have some, hat, sunblock and water bottle.

HOW TO REGISTER

Contact education@es.govt.nz or phone 0800 76 88 45 by Wednesday 11 November. Let us know if you have any special dietary requirements.





Rocky shore and estuary studies

Identifying and counting plants and animals within the square metre

Environment Southland can assist you with field trips to learn about rocky shores and estuaries. One of the methods we like to use on these field trips is Marine Metre Squared (www.mm2.net.nz).

Marine Metre Squared (Mm²) is a nationwide citizen science project that encourages people to get out and explore their local seashore. Mm² is ideal for school field trips to estuaries or rocky shores as it provides an easy method for students to survey plants and animals, and store their data. By repeating the survey at the same site, you can build a picture of seasonal changes and health trends at your site.

You can find out more and register at www.mm2.net.nz. Registration is free and members get full access to the online Mm² database where they can upload their survey data, compare their shore with the rest of New Zealand and monitor changes over time. Members can also join an online community to connect with other members of the Mm² network, get help with species identification, take part in new projects and challenges, and suggest projects of their own.

Refer to the February 2015 issue of Enviroteach for an illustrated story about our Mm² field trip for teachers to Mokomoko Inlet near Bluff (www.es.govt.nz/for-schools/educational-resources/enviroteach/)

SOIL STUDIES

Our education officers can assist with soil studies too. One of the methods we have recently started to use is called Visual Soil Assessment (www.landcareresearch.co.nz/publications/books/visual-soil-assessment-field-guide).

Visual soil assessment involves digging up a 20 cm cube of soil, comparing the soil to sample photos and assigning a score (poor, moderate or good) for different indicators. The VSA Field Guide contains all the information necessary to carry out VSA and can be downloaded for free from the Landcare Research website. Alternatively, visit the Science Learning Hub to download instructions and handouts for a simplified VSA (<http://sciencelearn.org.nz/Contexts/Soil-Farming-and-Science/Teaching-and-Learning-Approaches/Visual-soil-assessment>).

BEACON

Environment Southland's GIS Mapping Service



Finding reliable information about your local environment can be challenging. Many people don't know the name of the stream that runs past their home, or the dominant soil type in their area, or whether their favourite bathing site is safe for swimming.

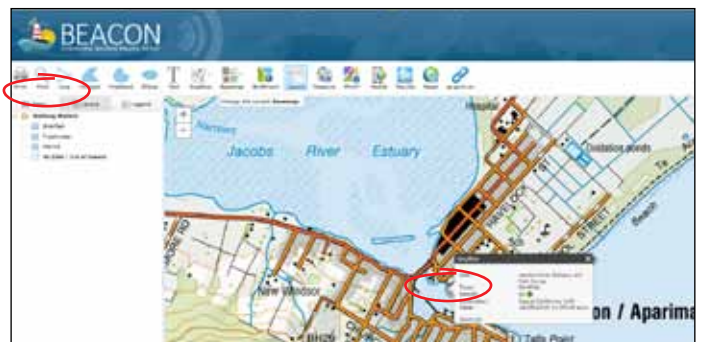
Environment Southland has designed a mapping service, called Beacon, to enable anyone to access the information we have on Southland's environment. The following series of screenshots explains how to use Beacon to access environmental information, using a few examples.



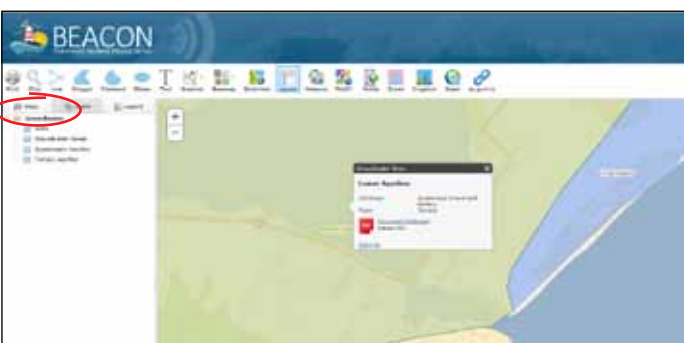
1 Go to Environment Southland's website www.es.govt.nz and click on the **BEACON** link.



2 Click on the **BASEMAP** icon and select **TOPO VIEW**. To enlarge the map zoom in using the **+** button in the top left corner of the map. Hold down the mouse button to move the map across the screen and find your school, e.g. Riverton School (you may need to zoom in again to view this detail).



3 To find out about bathing sites in your area, click on the **MAPS** icon and select **BATHING WATERS** from the list. Read the Information box and click **OK**. Then click on the bathing site (**GREEN DOT**) to access data from our monitoring programme.



4 To find out about groundwater in your area, click on the **MAPS** icon and select **GROUNDWATER**. Click on the map inside the coloured area to find out which groundwater zone you are in and to download a factsheet.



5 To find out which river catchment your school is in, go to the **MAPS** icon and select **CONSENTS**. Deselect **CURRENT RESOURCE CONSENTS** to clear the map, then check the box **CATCHMENT BOUNDARIES**. To find out what nitrate levels are like in your area, check the box **REGIONAL NITRATE LEVELS 2007-2012**. To find out what the dominant soil types are in your area, check the box **TOPOCLIMATE SOILS**.

WEBSITES



Environment Southland – www.es.govt.nz

Environment Southland has environmental monitoring sites all over the region.

You can access data from these sites, e.g. air quality, rainfall, river flow, river level, soil moisture and soil temperature, by visiting our website: www.es.govt.nz/rivers-and-rainfall/.



LAWA – www.lawa.org.nz

The purpose of the LAWA website is to connect people with New Zealand's environment through sharing scientific data.

The website brings together environmental monitoring data from all of New Zealand's regional councils and NIWA, as well as presenting information provided by the Ministry for the Environment.

Visit www.lawa.org.nz to:

- ◆ Find data on:
 - Water quantity: view live river flow, rainfall and groundwater levels in your region or find out how much water is being used and for what purpose.
 - River quality: find out about the health of rivers and lakes in your area or click on the National Tab for national-level information on the condition of New Zealand's rivers.
 - Beach water quality: view the results of water quality monitoring at popular beaches, so you know which beaches are safe for swimming, surfing and other recreational activities.
- ◆ Access factsheets on diverse topics such as: Help keep urban waterways clean; Water clarity; Nitrogen; National Environmental Standards; Can I trust this data?
- ◆ Access a comprehensive glossary of technical terms.
- ◆ Read stories, news and events from the community.





During 2016, Environment Southland intends to plant out native plants along part of the New River Estuary walkway and we're inviting interested school groups to help. *Would you like to participate in this exciting project?*

Planting events will be held in Terms 1, 3 and 4 (see dates below). Sessions will run from 9.30am to 12.30pm and will include exciting opportunities for learning and fun in the outdoors:

- ◆ A guided walk along the Roger Sutton Boardwalk to learn about life in the estuary
- ◆ A supervised planting activity
- ◆ A guided walk through Kew Bush to learn about native plants

Environment Southland will supply plants and spades, and our staff will give instructions and supervise the planting. We can take a maximum of 40 people per event.

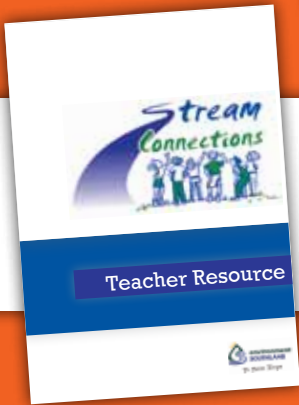
Book your place by contacting our environmental education officers: email education@es.govt.nz or phone 0800 76 88 45. Let us know your preferred date and how many students and adults you will be bringing.

Please choose one of the following dates:

DATE	BACK-UP DAY
24 February	2 March
23 March	30 March
24 August	31 August
14 September	21 September
19 October	26 October
23 November	30 November



RESOURCES FOR TEACHERS



Stream Connections resource

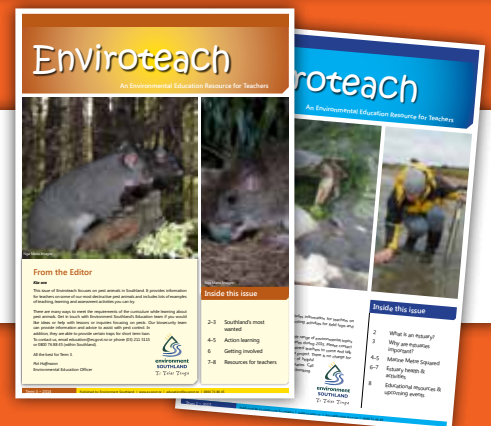
Enviroscape



Resource packs

Enviroteach

www.es.govt.nz/for-schools/educational-resources



FREE River Voices resource with DVD from Fish & Game New Zealand

This is a curriculum-based resource, suitable for inquiry learning in social sciences, science and education for sustainability for years 7-10. River Voices features thought-provoking videos of people describing their relationship with the Waimakariri River. To request a hardcopy of the resource and DVD, phone (04) 449 4767 or email NZCouncil@fishandgame.org.nz.