

Enviroteach

An Environmental Education Resource for Teachers



Nga Manu Images



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From the Editor

Kia ora

This issue of Enviroteach focuses on pest animals in Southland. It provides information for teachers on some of our most destructive pest animals and includes lots of examples of teaching, learning and assessment activities you can try.

There are many ways to meet the requirements of the curriculum while learning about pest animals. Get in touch with Environment Southland's Education team if you would like ideas or help with lessons or inquiries focusing on pests. Our biosecurity team can provide information and advice to assist with pest control. In addition, they are able to provide certain traps for short term loan. To contact us, email education@es.govt.nz or phone (03) 211 5115 or 0800 76 88 45 (within Southland).

All the best for Term 3.

Pat Hoffmann
Environmental Education Officer



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SOUTHLAND'S M

Over the years, many exotic animals have been brought to New Zealand and eventually become pests. Learn about some of the most serious pests in Southland, the damage they do and some of the methods currently used to control them.

POSSUMS



Australian Brushtail possums were originally introduced to New Zealand in the late 1800s to establish a fur trade. Unfortunately, they seriously harm native forests by browsing on plants and feeding on birds' eggs, chicks and snails. Possums also damage forestry plantings and horticultural crops, eat large amounts of pasture and stock feed, and are a vector for Bovine Tuberculosis in Southland.

How can you tell if possums have been feeding in your area?

Possums like to feed on young leaves and fruit, so you can sometimes see where they have pulled on branches to get to the freshest, juiciest tips of leaves or fruits. They often leave behind the leaf stalk, base and mid-rib and the tattered remains of leaves. Heavy and persistent feeding can eventually kill a tree.



Leaves (above) and crop (below) damaged by possums

Other evidence includes:

- A lot of dead trees in one area.
- Claw marks on trees, fence posts and gates.
- Possum fur caught on fences or wherever they have been fighting.
- Bite marks on trees.



A possum is lured to the Timms trap by a piece of apple or other fruit. The trap kills the possum quickly using a spring-loaded metal mouth which snaps down on the neck of the possum.

Possum control methods



A pest control contractor loads poison into a bait station.

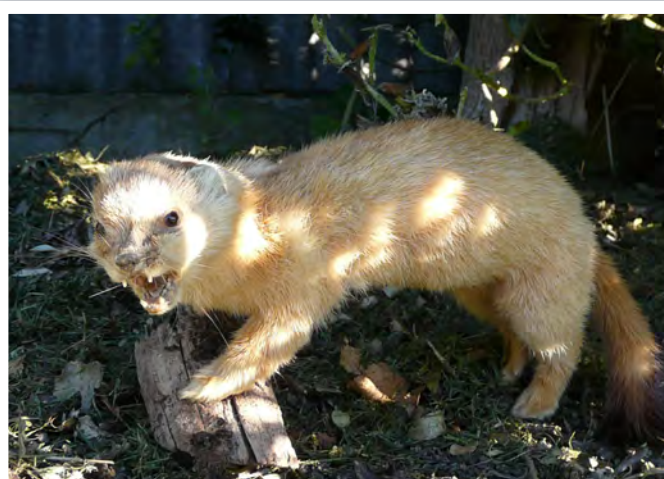


Leghold traps are steel-jawed traps that hold the captured animal by a limb until it can be killed by the trapper. These traps are often used by contractors for monitoring purposes before and after a control operation.

OST WANTED!

MUSTELIDS

(ferrets, stoats and weasels)



The introduction of mustelids such as this stoat (pictured) was one of the worst mistakes ever made by European colonists in New Zealand. They were purposely introduced in an attempt to reduce the rabbit population, but have since become a major predator of native species. Mustelid predation has contributed to the extinction of some native birds as well as the decline of kiwi, kakapo, takahe and others.



This is a DOC 200 trap ('200' refers to the grams of pressure required to activate the snap trap inside). Birds entering the trap won't be harmed but a stoat, rat or hedgehog will be killed instantly by the very heavy snap trap.

RODENTS



There are three species of rat (ship/common rat, Norway rat and Pacific rat/kiore) and one species of mouse in New Zealand. Rats impact on forest health by eating flowers, fruit, seeds and seedlings, as well as native insects, snails, frogs, lizards, bats, birds and eggs. Rodents are very productive breeders, enabling them to reach large populations when food is abundant. They can also damage crops, eat stored food products, cause extensive damage to buildings and pose potential risks to human health.



Rodents love to explore tunnels. Here a rat was caught in a victor snap trap inside a tunnel.

FERAL CATS

Feral cats live in the wild and include domestic cats that have been abandoned or strayed from their owners. They predate on a wide range of native bird species, reptiles and insects. It has been estimated that domestic and feral cats kill up to 100 million birds in New Zealand annually! Live capture traps are often used for feral cats. The cat is attracted to a lure (meat) inside a cage and once the cage door shuts, it can't get out. One of the challenges of feral cat control is the difficulty knowing whether the cat is a pet or not.

Action Learning

Action learning is a teaching practice that employs inquiry learning strategies with an emphasis on students taking action and reflecting on the resulting changes. You can use the questions in the action learning cycle to help you plan any topic, issue or project. Here are some examples of teaching, learning and assessment activities focusing on pest animals.

Where to from here?

- Write to the newspaper, politicians or local authorities; write a guidebook for future students.

How will we celebrate our achievements?

- Hold an open day / guided field trip / exhibition of photos.

How can we monitor and record the changes?

- Design and set up a monitoring programme.

Reflect on our learning and action

- Use various reflective techniques to analyse what changes and benefits have come about because of our actions? What went well? What didn't go so well? What would we have done differently?

What actions will bring about the changes that we want?

- Develop action statements to clarify exactly what we will do.

Identify which designs will work best.

Identify what we need to do to take action.

- Complete an action planner.

Who else do we need to involve?

- Form a committee; let people know about our plans e.g. newsletters.

Who will do what and when?

- Complete a task programmer identifying steps, timeframes and responsible people.

How will we know when we have been successful?

- Develop indicators of success.



START HERE

Identify
the current
situation

Explore
alternatives

Reflect on
change

Take action

Where have we come from and what do we now know?

- Brainstorm what we already know; create a pool / kete of knowledge.

What can we observe?

- Identify and describe native plants and animals in our school grounds and community; find out whether we have pest animals in our area, e.g. take photographs of leaf and /or tree damage to show the effect of possums.

What can we learn?

- Read a fact sheet; watch a video; listen to a radio programme; play an experiential game; do a research project; invite a speaker from Forest and Bird, Environment Southland or DOC; learn a New Zealand / Māori song about native trees and/or birds.

How did it get to be this way?

- Choose a pest animal to research; develop a poster that describes the ecological niche of the pest and reasons why it has become so potent; make a timeline showing changes over time.

What do others think and feel?

- Analyse and present the viewpoints of the community using a range of strategies, e.g. questionnaires and interviews; hold a debate.

What can we measure?

- Make and use tracking tunnels to monitor presence / absence of pest animals in our area; do a transect through a forest and record damage to trees from possums, e.g. leaf damage, bark damage; estimate damage from pest animals.

How else could it be?

- Do a field trip to a protected area to compare with our own area.

What would we change if we could?

- Develop a vision for biodiversity / pest management in our school / community environment.

Find out what others done:

- Draw on websites, newspaper articles and talks by experts; debate the pros and cons and issues surrounding the use of 1080 in pest control.

Ideas for action

- Plant native trees; create bird-friendly habitats; protect native species; participate in a pest control programme with support from local experts; write a letter; create an artwork or drama representing the impact of pest animals on native biodiversity; design a board game focusing on pest animals.

Identify our priorities for change

- Collect ideas, score and rank them in order of priority.

How will we decide?

- Debate the options; vote on the top ideas.

(Adapted from the Enviroschools Kit with permission from The Enviroschools Foundation)

GETTING INVOLVED

Lots of schools choose to learn about pest animals, and some even get involved in pest control activities to help restore natural habitat and save our native plants and animals. Here are some recent examples from around Southland.



WAIKAIA SCHOOL

Waikaia School invited Environment Southland's Biosecurity Officer, Alfredo Paz, to talk to students about pest animals, as well as health and safety aspects of pest control.



DIPTON SCHOOL

Students from Dipton School helped Environment Southland to clear possum traps at Castlerock.



KIDS RESTORE THE KEPLER

Students from Mararoa School learned how to set a stoat trap as part of the Kids Restore the Kepler project (www.kidsrestorethekepler.co.nz). The project aims to reduce the number of pests in the area so that native wildlife recovers and birdsong once again echoes throughout the mountains and in Te Anau. The education programme involves students, teachers and parents from Fiordland College, Te Anau Primary, Mararoa School, Fiordland Kindergarten and Southern Stars Early Learning Centre.



LIMEHILLS SCHOOL

Students from Limehills School helped Environment Southland staff to set stoat and possum traps at Swales Reserve.



TRACKING TUNNEL

You can easily make your own tracking tunnels to find out what animals are living in and around your school. Find out how by visiting www.kcc.org.nz or www.doc.govt.nz

Resources for teachers

Possums, Stoats, Weasels and Ferrets

Environment Southland's NEW resource kit for primary school teachers

Environment Southland's education team has recently developed a resource kit for Primary School teachers in Southland focusing on possums, stoats, weasels and ferrets. In this kit you'll find a variety of information sheets, activities, websites and resources that can help you to develop an inquiry around possums and mustelids.

- Instructions for "Possum Picnic" educational game.
- List of websites.
- Warning sign for baits and poisons.
- Copy of teacher support material on mustelids from *Junior Journal 43*.
- Instructions for making a tracking tunnel.
- Science, social science and sustainability unit on pest animals from *Starters and Strategies*.
- Pest animal factsheet from Environment Southland.
- *The How and Why of Possum Control* from the National Pest Control Agencies.
- *Backyard Beasties* factsheet from Environment Southland.
- *Possum Control Area* factsheet from Environment Southland.
- Report from an early learning centre on their learning and activities around pest animals.
- Photographs of possum habitat.

Contact education@es.govt.nz to request a FREE copy of the kit.

Too Many Possums

Teacher support material

Teacher support material for a report by Kate Boyle that explains why possums, although seemingly cute and cuddly, have become such a problem in New Zealand. This identifies key text characteristics for the reading standard after three years at school and provides a possible curriculum context for Science (levels 1 and 2, Life Processes).

www.literacyonline.tki.org.nz (search for "Too many possums").

Possum information

Factsheet

Find out more about possums from the Landcare Research website. You'll find information to download covering all aspects of possums in New Zealand. It is a valuable resource for any study of native flora and fauna and the role of possums. It is also suitable for NCEA levels 1-3.

www.landcareresearch.co.nz/publications/infosheets/possums/

Biological Control of Possums

The New Zealand Biotechnology Learning Hub offers factsheets, notes for teachers, unit plans, "interactives" and video clips suitable for primary and secondary school level.

www.biotechlearn.org.nz/focus_stories/biological_control_of_possums

Resources for teachers

Pests and Predators

Interactive activity for students

Check out this lively interactive, which shows the devastation an introduced animal can cause to New Zealand's indigenous environment and wildlife. Click on a pest, drag it into the forest scene, and release it, to see what impact the pest has on plant and animal life. Includes a fact file on each animal and its impact on the environment.

www.brownteal.com/site/pestsinteractive.php

Pests costs New Zealand economy billions each year

Radio Programme

Report from the Royal Society which calculates that pests are costing the New Zealand economy billions of dollars each year.

www.radionz.co.nz/national/programmes/ninetoon/audio/2590596/pest-control-costs-nz-economy-billions-each-year

The Sinbad Sanctuary & Fiordland's hidden lizards

Video

A video by James Reardon about the threatened species and ecosystem processes of the Sinbad Gully, which stretches off to the west from the popular tourist site at Milford Sound. The Sinbad Gully is characterised by extremely steep glacially-carved walls and near-vertical granite cliffs. These walls slowed pest invasion into the gully, resulting in a number of unique native species remaining in the Sinbad. One of these species is the Sinbad skink. Find out about the challenges of pest control and the complexities involved with conservation management within the Gully.

www.vimeo.com/70393535

Incredible Science

Website

The activities on this website were created by the Faculty of Science at the University of Auckland. Follow this link to see images of animal footprints including rodents, mustelids, possums and reptiles. Helpful when interpreting the tracks in a tracking tunnel.

www.incrediblescience.co.nz/online/eco-memory/animal-footprints/

The '1080 debate'

Resources to support critical thinking around the 1080 debate

- *Poisoning Paradise – Ecocide New Zealand*. A DVD criticising the use of 1080. www.thegrafsboys.org
- *Evaluating the use of 1080 - Predators, poisons and silent forests*. A report by the Parliamentary Commissioner for the Environment supporting the use of 1080. www.pce.parliament.nz/assets/Uploads/PCE-1080.pdf. A short explanation of the report is available on youtube – www.youtube.com/watch?v=dVtE9Akana4