



The war against weeds

Phil Croty eats insects. It's the accidental downside of a job that's made him a familiar face at farms all over South Canterbury.

The Environment Canterbury biosecurity officer (above) leads a little known army in the war against weeds. He's responsible for the release of biocontrol bugs - natural born killers that chomp their way through some of the region's worst plant pests.

Collecting the insects sometimes involves sucking them up off their hosts with a special device called a pooper.

"I've swallowed a few," admits the man who has helped spread everything from nodding thistle receptacle weevils to broom twig miners.

Some 15 biocontrol agents have been released at around 190 sites in Canterbury.

The insects are bred by Landcare Research at Lincoln, near Christchurch, and have been distributed as far afield as Kaikoura, Amberley, the Port Hills, Akaroa, Ashburton, Waimate, Timaru, Twizel and Kurow.

"Being on the doorstep of a research institute certainly helps," says Lynley Hayes, Landcare biocontrol researcher. "Canterbury

is usually the first place that we release our new agents."

Extensive safety testing is a must.

"We've had several promising insects that we've had to ditch, because we couldn't guarantee they wouldn't eat other plants."

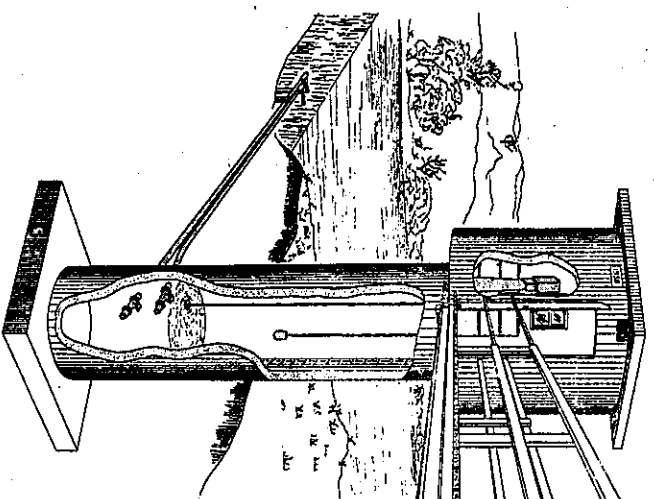
The agents are host specific, meaning they only attack one sort of plant. They all live naturally overseas, but got left behind when their hosts first came to New Zealand.

Nodding thistle, gorse and broom are some of the plants that have been successfully targeted. Californian thistle, old man's beard, St

John's wort and ragwort have also come under attack. It's hoped that in the future agents for nassella tussock, boneseed and banana passionfruit could be introduced. Phil Croty says where sufficient numbers have been released for a long enough time, the biocontrol agents are having a definite impact.

"They're a long term tool that has the most success if there is a long term commitment. There's still a lot of work to be done, but it's very encouraging to see that most of the released agents are quite well established."

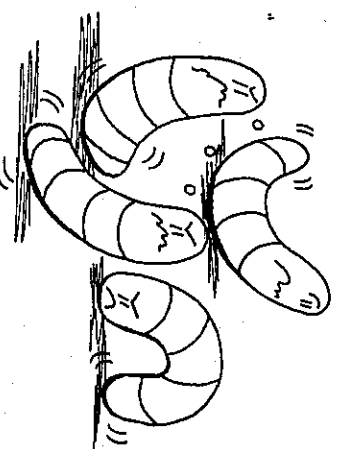
CANTERBURY UNCOVERED



You see weeds - they see dinner

Three biocontrol agents have been released to attack nodding thistle. The prickly purple plant has been decimated in many parts of Canterbury, thanks to the work of this tiny trio:

- 1 Receptacle weevil larvae feed in the receptacle and mainly attack the first primary flowers, preventing the production of healthy seeds.
- 2 Two generations of seed-eating gall fly larvae heavily attack the primary, secondary and tertiary flowers (especially at this time of year).
- 3 Crown weevil larvae feed in the plant's rosette - even if it survives, growth is stunted and flowering is reduced.



Biocontrol: how it works

Biological control uses one living organism to control another. Since 1987, 15 agents for seven weeds have been released in Canterbury. It's not the answer for all sites, but can be appropriate when alternative plant pest control methods are not physically, economically or environmentally possible. Biological control works best when:

- The weed does not need to be eradicated quickly.
- There is a long-term commitment (at least five years).
- The site has good access, is warm, sheltered and not prone to fires or floods.
- The weeds are healthy and the land is not intensively managed - spraying, ploughing and heavy stocking can damage insect populations.

Want to find out more? Contact a biosecurity officer at your nearest Environment Canterbury office.

Knock, knock

Who's there? A \$20,000 repair bill

For almost half a century, scientists have been walking the plank to a tall tower in the middle of the Rakaia River.

On top of the tower is a building housing the river level recorder that provides the data essential to flood prediction and water conservation efforts.

All that information, for all those years, simply at the turn of a door handle. Until last August - when the door got stuck.

It seems that August's floods did more than send the recorder into a frenzy - it also scoured the soil holding the "plank" to the bank. The plank lifted, the door got stuck and the structure, erected in 1957, became a major safety hazard.

Graeme Horrell, Environment Canterbury water resources scientist, says while the repair bill was more than expected, the information gathered from the Rakaia River tower is crucial to water management in the area.

"This is one site that everyone from farmers to fishermen is interested in." Check out how the recorder works (left), or visit www.ecan.govt.nz and go to the rivers and rainfall page to see the data provided by the Rakaia recorder. There's more information on Environment Canterbury's water monitoring work in the pamphlet, "From rain drops to river flows" (phone customer services, 03 365 3828, for your copy).

Taste tests

Almost 2000 people "took the taste test" in Christchurch last month, as Environment Canterbury launched a major consultation on the future management of the city's water (story, front page).

Participants were asked to sample two glasses of water - one from Christchurch, and one from a treated supply. Some 65 per cent judged correctly.

The test highlighted the quality of the city's water, which comes from natural, underground aquifers.

Predicted increases in demand for that water, and the potential impacts on the Avon-Otakaro and Heathcote rivers which are fed by the same aquifers, have prompted Environment Canterbury to consult with the public on options for future management of the resource.

Taste tests were held at six sites throughout Christchurch and Environment Canterbury is collecting detailed comment via a special city edition of Living Here and a discussion document, Our water in the balance.