

Calling all Weedbusters!

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Remove your pest plants and be in to win native plants!

First 50 schools to register get a Weedbusters Resource Kit

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e vibe

ENVIRONMENTAL EDUCATION NEWSLETTER



Whakatapepe te kō, hira kōwhiri. 09 366 2000 www.arc.govt.nz

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From the editor

This is the last issue of E Vibe so I hope you have enjoyed reading it over the last few years and have found it useful. Thank you to everyone who has made contributions and to the many who have made positive comments about the newsletter.

The final issue focuses on biosecurity. This has almost become a household name in the Auckland region with the discovery of some nasty and unwanted pests like the painted apple moth, which could play havoc with our horticultural industry had it survived.

The ARC Biosecurity officers are busy managing these numerous animal and pest 'aliens' but it is not all doom and gloom on the biosecurity front. Read about the success stories of eradicating rats from Rakino Island and "the green fog" (Mistflower) from our forests. You can also participate in the Weedbusters education programme and if you haven't done so already, request a copy of ARC's Weedbusters Resource Kit.

Remember if you see anything alien out there phone ARC Biosecurity on (09) 366 2000 or MAF Pest hotline on 0800 80 99 66

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Managing aliens in our environment

Jack Crow The destructive effects of alien organisms can be found in our native forests, lakes, rivers, coasts, and beaches. Alien organisms affect our native animals and plants. They impact our farming, horticulture, fishing, forestry and other primary production industries. Aliens can also have nasty effects on human health and culture. Aliens are everywhere, even in your school and house.

How the aliens survive

Governments and councils in most countries have been concerned for many years about problems caused by alien organisms such as invasive plants - gorse and wild ginger, animals - rabbits, cane toads, brown tree snakes, marine life - zebra mussels, and infections such as the bovine tuberculosis bacterium and the corn mosaic virus. However, in recent years scientists and environmental managers have realised that thousands of life forms can cause massive problems if introduced into new environments and new countries.

We now know that nature is more complicated than previously imagined. Most species in their natural environment are subject to a greater range of predators, competitors, parasites and pathogens than we once thought possible. They exist in a vast interconnected web of life, drawing upon each other and in turn being controlled by this matrix of life forms. Even if there is an increase in one species, an increased attack by its predators and parasites reduces the increase and restores a balance. However, when species are taken from this environment, generally by humans, and placed into new environments, they usually arrive free of these competitors, parasites and predators. This gives them a competitive advantage over the native species and they end up dominating breeding space, food, and water.

The brush tail possum is a good example of how this works.



Why are possums in decline in Australia but subject to massive and aggressive control measures in New Zealand to prevent them from destroying our native bush and ruining horticulture?

In its native Australia, most trees and shrubs developed protection mechanisms to minimise possum browsing - high levels of toxic and indigestible tannins in the leaves, high levels of the animal poison monofluoroacetate (1080) in the leaves. Very few of our native trees developed similar toxins because of the absence of browsing mammals, so possums are able to devour almost all bush vegetation with ease. The New Zealand bush became a giant sweet shop to them.

What is the ARC doing about the aliens?

Biosecurity New Zealand (BNZ) is a Directorate of the Ministry of Agriculture & Forestry (MAF) and this organisation protects the country at the national border. BNZ also intervenes to control or eradicate some very nasty pests (eg painted apple moth, gypsy moth) that have gotten past the border but are at a low enough level to enable eradication to be successful.

However, most biosecurity management inside New Zealand is carried out by regional councils. The ARC Biosecurity Team has 17 members, covering all of the Auckland region, from north of Wellsford to south of Pukekohe, from Awhitu to Great Barrier Island. The ARC Biosecurity Team manages a wide range of threats, from possums, goats, stoats, wallabies and feral pigs, and a wide range of rare and nasty weeds, to turtles, rooks, common weeds, odd birds and a few insects.

Managing all of these pests requires good legislation, a lot of people and a lot of money.

ARC Biosecurity operates under the Biosecurity Act 1993, which is excellent legislation, providing a range of remedies to allow pests to be excluded, controlled, eradicated or researched. ARC Biosecurity are also governed by the Regional Pest Management Strategy (RPMS), a planning and legal document compiled every 5 years. The RPMS must reflect community attitudes to current issues, and is only adopted after extensive public and stakeholder consultation. This ensures that ARC Biosecurity programmes are strongly supported by the community, eg the \$1.2 million spent on possum control each year.

The overall Biosecurity budget is approximately \$4 million per annum, funded by a separate biosecurity rate on all regional ratepayers.



Fishing for pests at Lake Wainamu

What is Biosecurity?

'Biosecurity' is a relatively new word, a contraction of the phrase 'biological security'. This term reflects the concern by a lot of countries over the negative effects caused by alien organisms such as foreign animals, plants, insects, bacteria, viruses and other life forms. The threats are biological in origin and directed towards biological processes, so 'biological security' or 'biosecurity' neatly describes the phenomenon of alien organisms struggling to dominate native organisms.

Biosecurity is probably more important to New Zealand than any other developed country because of our relative isolation. We have a unique ecosystem that evolved without many of the animal and plant groups found elsewhere, such as mustelids, browsing ruminants, cats, dogs, creeping tropical grasses, large submerged freshwater plants and leguminous shrubs. However, when they eventually arrived there were no native predators and so they were able to thrive.



Rainbow Lorikeet



What you can do!

Sarah Gibbs You don't have to wear a funny hat and work in the airport to help protect New Zealand's biosecurity. Simple things you do can make a big difference.

Keep an eye out for new bugs, plants and animals

Ring the MAF Exotic Disease and Pest hotline on 0800 80 99 66 if you are concerned about something you have found

Don't dump unwanted pets

Cats, dogs, turtles, rabbits and other pets that are dumped do not have a happy life in the wilderness. They get cold and hungry and either die of starvation or have to kill native flora and fauna in order to survive. In some areas they may be poisoned or trapped. Don't give pets as Christmas presents unless you are prepared to take responsibility for them after the novelty has worn off. Take unwanted pets back to the pet store or to the SPCA.

Don't dump unwanted weeds

Illegal dumping of garden waste is the main way weeds are spread into park and bush areas. If you don't want it in your garden, you don't want it in your parks! Take it as green waste to your local transfer station, get a green waste collector to remove it for you or put it in black polythene bags or soak it in water until it dies. Then compost it at home. Report illegal dumping or garden waste to your local or regional council.

Be a biosecurity aware gardener

80% of weeds, including such treasures as gorse and Kahili ginger, were originally bought to New Zealand as ornamental garden plants. New weeds are still naturalising at the rate of about 10 a year. Have you got one of this years crop in your garden? Watch how plants are acting. If they're getting rampant replace them with a non-invasive alternative before they take over. Treat yourself to a more maintenance free lifestyle.



Display New Zealand's botanical heritage with pride

There are now more introduced species growing wild in New Zealand than native plants. This puts our native plants, and especially the 80% that are found only in New Zealand, at risk. Some are already endangered or threatened. You can help reverse this trend. Many of our natives have beautiful foliage, colourful flowers and unique forms that defy the myth that native plants consist only of boring pittosporums! A quick visit to the Auckland Botanic Gardens will attest to the versatility and beauty native plants can bring to a garden. Show your true kiwi colours and display our botanical heritage with pride by replacing problem plants with one of almost 2,000 native plants.

Don't bring hitchhikers home

New Zealand is free from many diseases and pests that are a problem overseas. If you are travelling back to New Zealand from overseas, clean your camping gear, boots, socks and pack before getting on the plane. If in doubt, let a Biosecurity Officer know that your gear may be contaminated so it can be treated before you leave the customs area. Don't bring seeds of plants back into New Zealand. We already have around 2,000 native and 27,000 exotic plant species present in the country, so there is plenty of choice (and weeds) already here!

Alien invasion of alien species

Greg Hoskins Invasive species can include plants, animals, insects, birds, fish and diseases. **Some recent examples include:**

- Scrambling lily (*Geitonoplesium cymosum*)
- Devils tail (*Polygonum perfoliatum*)
- Devil's fig (*Solanum torvum*),
- Painted apple moth (*Teia anartoides*)
- Banjo frog (*Limnodynastes dumerilii*)
- Fire ant (*Solenopsis invicta*)
- Argentine ant (*Linepithema humile*)
- Lesser banded hornet (*Vespa affinis*)
- Southern saltmarsh mosquito (*Aedes camptorhynchus*)
- Gum leaf skeletoniser (*Uraba lugens*).

Scrambling lily was first found in the Auckland region in October 2000 growing in an area of native bush on the North Shore. It is native to many countries of the Pacific rim, is a fast growing climber with wiry stems that wind around and can strangle the trees it climbs.

In May 2001 a second site was found on Waiheke Island, at Rocky Bay. Declared an unwanted organism in May 2001, initial sites were removed late May and areas around these sites were surveyed. Two small infestations were found and treated near the initial site. Each year the sites are surveyed by ARC Biosecurity staff and any seedlings or plants found are treated.

Devil's tail (Tearthumb) was first discovered in March 2000 in Market Road, Epsom. A serious weed in a number of places overseas it has the potential to be a major agricultural and environmental weed in New Zealand.



Banjo Frog

Devil's tail is a fast growing annual vine with numerous curved, sharp prickles on the leaves. The plant was declared an unwanted organism on 27 June 2001; the initial site has been cleared with surrounding properties surveyed with no further plants found to date.

Devil's fig was found growing in a Taupaki nursery in August 2000 during a general surveillance inspection by Biosecurity Officers. This was the second record of this plant found growing in New Zealand. Plants found were destroyed as Devil's fig is a serious weed in some parts of Melanesia and Australia. Devil's fig is a shrub growing 1 - 3 metres high with prickles present on stems and leaves. The plant originates from the West Indies.



Scrambling lily

Animal pests of the Auckland region

Animals declared as pests in the Regional Pest Management Strategy cannot be bred, sold, given away or exhibited.

Dave Galloway The Auckland region has a number of non-native animal, bird and insect species that are now considered pests.



They affect humans and the environment by:

- Browsing or grazing on native plants or pasture
- Competing with our native bird species for territory, food, roost sites etc.
- Feeding on our native birds, bats and insects.
- Spreading diseases, such as bovine Tb
- Creating a nuisance in recreational areas

Many of these animal pests have been in New Zealand for a long time and their impacts are now well known. It is ironic that most were introduced for beneficial reasons.

Twelve species or groups of species are declared pests in the Regional Pest Management Strategy. They are:

- Brush tailed possum
- Feral cats, pigs and deer.
- Hedgehog
- Rabbit

- Magpie and Myna
- Mustelids: Ferret, Stoat and Weasel
- Wasps: Common wasp, Asian paper wasp, Australian paper wasp and German wasp
- Wallabies: Darna, Swamp, Brush tailed Rock & Parma
- Rats: Norway, Ship and Kiore.

For some other animals, for example Eastern Rosella, Sulphur crested Cockatoo, Spur-winged Plover, Feral pigs and Rainbow skinks, we don't know what their impact is, or the most effective means of control. The ARC is carrying out research on these animals.

The ARC mainly does animal control work in areas of high environmental or conservation value. At present most control work is done to prevent damage caused by possums and goats.

The ARC also provides assistance, advice and information to Community and Care groups who wish to undertake pest control work.



Managing plant pests

Graeme Wrightson The Auckland Regional Council manages a number of pest plants that threaten the region's environment and economy, through the Auckland Regional Pest Management Strategy.

Each plant is unique and has its own set of requirements and need for control. Each plant differs in its effects on the environment or economy, extent of infestations, availability of effective means of control, ease of spread or benefits of control. Because of this we treat plants in different ways.

Total Control Pest Plants

These are plants of limited spread within the Auckland region, not commonly seen and may be unknown to most people. **Cathedral bells, Needle grass, Giant Arrowhead, Devil's Tail and Old Man's Beard** are all examples of Total Control Plants. They are the highest priority, as it is possible to eradicate them at these low levels. The Auckland Regional Council controls these plants at no cost to the land owner as it is a benefit to the region as a whole.

The work does not stop once the site is cleared. The site must then be monitored for a number of years to ensure that no further growth is likely and that the seed present at the site is no longer viable.

Containment Pest Plants

These pest plants are generally more common in the region. Control is aimed more at promoting community awareness and requiring occupiers to manage their own control programmes. The main aim is to prevent their spread to uninfested areas of the region. Some of these plants may only be controlled in certain parts of the region or only on the boundaries of clean properties. **Examples of containment pest plants are Woolly Nightshade, Wild Ginger and Mignonette Vine.**

Surveillance Pest Plants

Most of these plants are generally common, found throughout the region and well established. Most have been extensively planted into gardens but have now become garden escapes creating havoc in our native bush or countryside. However, some are so far unknown in the Auckland region, although found in other parts of New Zealand. Constant vigilance is needed to prevent these plants getting a foothold here. These plants are prohibited from being sold or distributed, but people are not required to remove them from their properties. The ARC works in with the plant growers and sellers to prevent distribution and nurseries and retailers are also checked regularly to make sure they are not being sold. **Examples are climbing asparagus, privet and monkey apple.**

Raising peoples awareness is often the most effective way of getting control of these plants. The public are encouraged to control plants on their own property and within the local community and to report any unusual plants which show signs of being weedy.

Biosecurity officers are always on the lookout for new and unknown plants and will eagerly respond to new reported sightings from the public. There may be a lot of false alarms but that is worth it when a new pest plant incursion is found and halted.

They ARC works with community groups to help control weeds on public and private land through the Community Initiatives programme and Weedbusters. There are also a number of plants that appear to be weedy, but we do not have enough information on them so the Biosecurity Team carries out research on these plants.



Moth plant