



Indigenous forest once made up much of the land cover in the region.

Biodiversity on land

Biodiversity on land, or terrestrial biodiversity, includes the plants, animals and ecosystems that are based on land. The arrival of humans radically changed New Zealand's indigenous biodiversity. Introduced animals have preyed on or competed with native species, or degraded their habitat. Exotic plants also became widespread as settlement progressed. Natural ecosystems and indigenous species have also been affected by human activities such as land development and clearing of native vegetation.

A number of Council programmes are helping to protect forest remnants and control pests to encourage indigenous terrestrial biodiversity in the region. We work alongside private landowners, providing practical initiatives to protect and enhance biodiversity on private land. To ensure we are protecting significant habitats in the region adequately, we also monitor the condition of prioritised ecosystems and biodiversity sites across the region. Our pest control operations focus on controlling introduced animals and plants that threaten prioritised biodiversity sites. As a result, the condition of significant biodiversity sites across the region is generally good or very good.

Forty percent of Taranaki's land area is currently in indigenous forest and shrubland. Whilst the region's native forest has greatly reduced since the arrival of humans, Taranaki compares well to the rest of New Zealand, which has about 24% native forest cover.

It is estimated that since the arrival of humans, around 60% of Taranaki's indigenous forest and shrubland has been cleared, particularly on the intensively farmed ring plain and coastal terraces. In these areas today, terrestrial ecosystems are fragmented and exist in pockets that are largely separated from each other. Many ecosystems are greatly reduced in area and the habitats of many threatened and at-risk species are now found only on private land.

As part of our work, we monitor the amount of indigenous vegetation remaining in the region, and assess how much of that vegetation has formal protection. We also assess the condition of selected forest remnants.

'The arrival of humans radically changed New Zealand's indigenous biodiversity.'

Indigenous vegetation

Taranaki's indigenous vegetation ranges from alpine herb fields to temperate rainforests. It also includes coastal turf and dune vegetation. Like most of New Zealand, Taranaki would once have been covered in thick and diverse forest and shrubland, with smaller areas of wetland vegetation and turf communities.

Throughout New Zealand, much of the land cleared for development was in low-lying and coastal areas. Such is the case in Taranaki where approximately 60% of the pre-human native forest and shrubland has been cleared. The remnants of indigenous vegetation on the ring plain and marine terraces are but mere fragments of what they once were. Whilst small, these remnants are highly important for biodiversity.

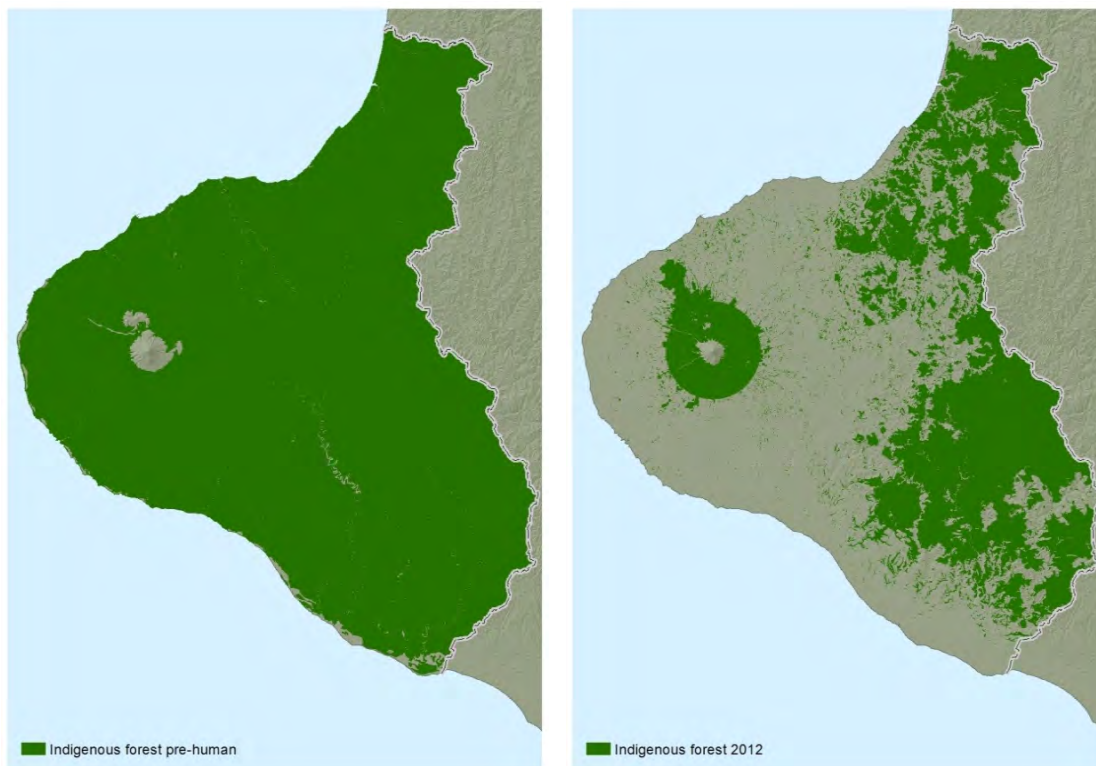
What's the story?

The largest concentrations of indigenous forest remaining in the region are confined to Egmont National Park, the steeper parts of north Taranaki and the eastern hill country.

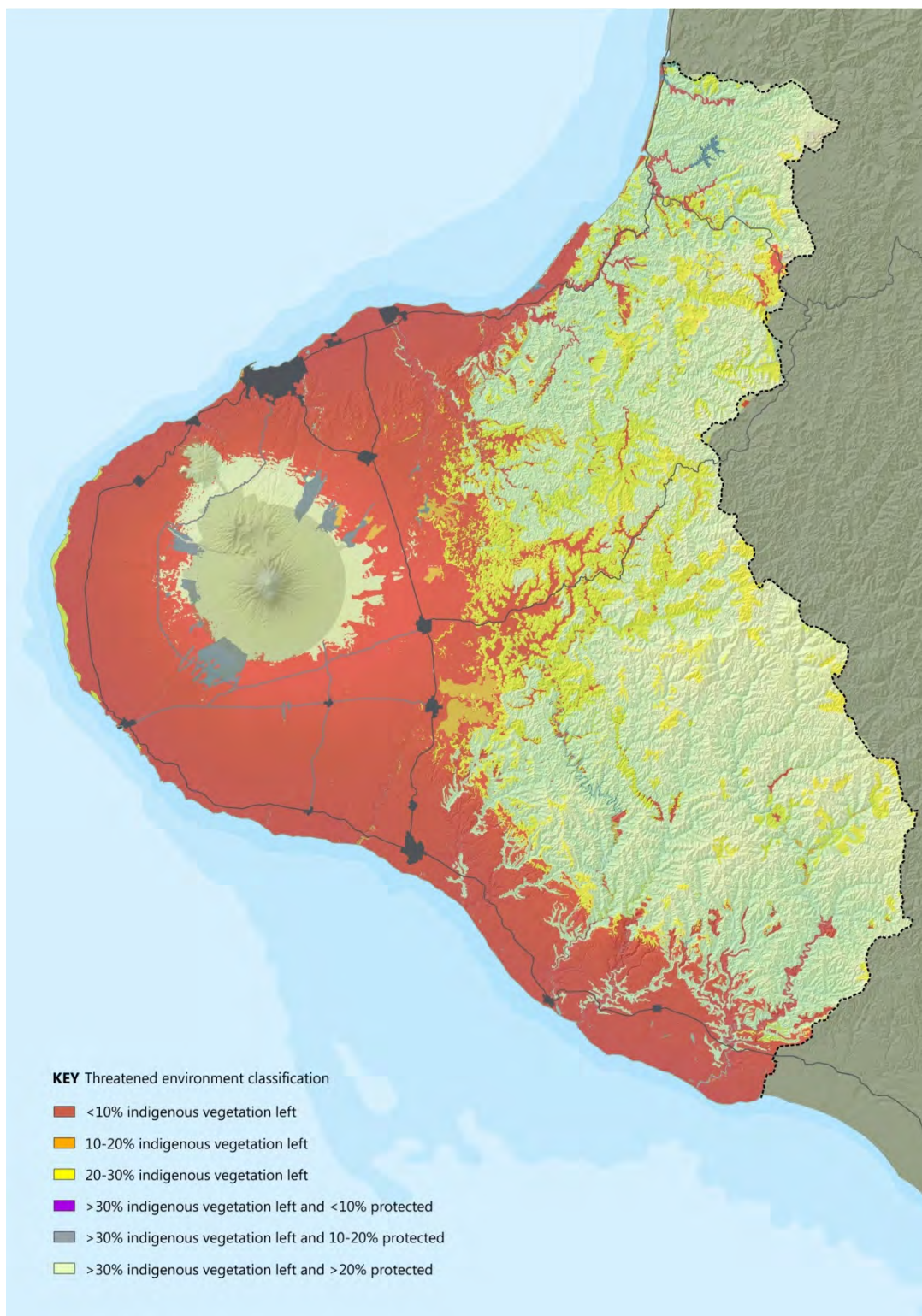
Between 2008 and 2012, Taranaki saw a net loss of around 3,700 hectares of indigenous forest and shrubland, despite around 430 hectares of new shrubland being regenerated. Most of the lost vegetation area was converted to grassland.

By comparison, between 2001 and 2008, a total of 2,370 hectares of indigenous vegetation was lost in the region.

Just over half of Taranaki's land area has less than 20% of its original native vegetation remaining. The native habitats that remain in these areas are important and are considered acutely or chronically threatened. As most are on private land, they are targeted as a high priority for protection under Council's biodiversity programme.



It is estimated that prior to human settlement most of Taranaki was covered in native forest, shrubland and wetland vegetation (left.) Today, about 40% of the region's land area is indigenous vegetation (right).



Approximately 52% of the region is classified as acutely or chronically threatened in that there is less than 20% of indigenous vegetation remaining in the area. The most threatened environments are located on the ring plain and coastal terraces, areas prioritised for protection in the Taranaki Biodiversity Forum Accord and the Council's Biodiversity Strategy.

Protecting habitats

Approximately 21% of Taranaki's total land area has some form of legal protection, including Department of Conservation (DOC) reserves, local purpose reserves and Queen Elizabeth the Second National Trust (QEII) covenants. This equates to approximately 50% of all native forests and shrublands being legally protected in Taranaki.

Loss of habitat and the effects of pest plants and animals are the greatest threats to the region's remaining indigenous biodiversity. Animals such as possums, feral goats and deer eat native vegetation and damage habitats that are important to other native species.

Many introduced plant species have become or have the potential to become weeds. They threaten indigenous biodiversity when they compete with native plants for space and resources. Climbing species such as old man's beard and climbing spindleberry can smother areas and prevent new native plants from growing. This can change native habitats and lead to further biodiversity losses.

Of the region's acutely and chronically threatened habitats about 17.5% is formally protected. In terms of Key Native Ecosystems across the region (the sites that the Council focuses much of its effort for protection and active management), 95% have some form of legal protection.

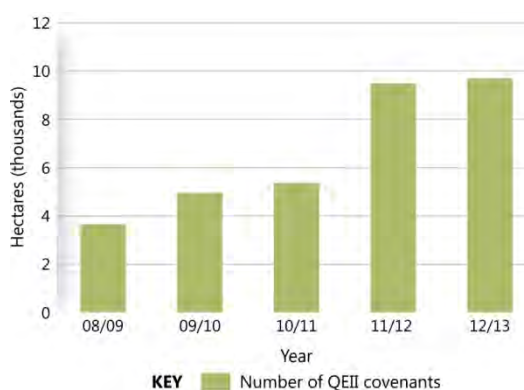
Private landowners can choose to legally protect native vegetation and habitats within their land in a number of ways. A covenant issued by DOC is one option. Another is to have the area recognised under the QEII Trust.

In addition to the protection afforded by regional and district plans, 151,054 hectares are formally protected in the DOC estate, or under a QEII or DOC covenant. This is an increase since 2008 when 145,900 hectares of Taranaki's land area was formally protected.

QEII covenants have become increasingly popular with private landowners in Taranaki. The number of covenants in the region has increased from 249 covenants covering 3,647 hectares in 2008, to 344 covenants covering 9,723 hectares in 2013. This amounts to 7.8% of the total QEII protected land area in New Zealand (a total of 125,138 hectares), which is a relatively high percentage given Taranaki makes up only 2.7% of New Zealand's total land area.

In the 2013/2014 year, there were 31 new covenants registered in the Taranaki region—the largest number registered in any region in that year.

'Loss of habitat and the effects of invasive plants and animals are the greatest threats to the region's remaining biodiversity.'



Land protected by covenants in the Taranaki region.

Forest condition

Although clearing vegetation directly affects biodiversity, the condition of indigenous vegetation is mostly impacted by grazing stock and feral animals such as possums, goats, deer and pigs. We target these threats as part of our biodiversity management programmes.

Initiatives such as the *Self-help Possum Control Programme* involving 4,374 properties covering 235,464 hectares keep possum numbers at low levels over at least 32% of the Taranaki region, including roughly 9,278 hectares of largely acutely threatened indigenous vegetation.

Over the past five years, the Council has also gathered baseline information about the ecological health of remnant forest ecosystems around the region by considering a number of factors. This includes the size and shape of the remnant, and its proximity to other remnants.

We also assess the state of the indigenous vegetation, noting the presence and abundance of indigenous fauna, any evidence of pest plants and animals, and the condition of any fencing. We also take into account any formal protection status.

Each factor is each given a 'condition' score. The scores are then used to rate the overall state of the remnant, from 'Excellent' to 'Poor'.

'Of the 64 forest remnants assessed ... more than half were found to be in 'Good' or 'Very good' condition.'




Of the 64 forest remnants assessed between 2008 and 2014, more than half were found to be in 'Good' or 'Very good' condition. A very small percentage of forest remnants were considered to be in 'Poor' condition.



The Rowan Road forest remnant KNE (above) has a biodiversity plan.

Find out more

-  *Hitchmough, R.: Summary of changes to the conservation status of taxa in 2008–11 New Zealand Threat Classification System listing cycle. (DOC, 2013) tinyurl.com/TRC6r*
- QEII National Trust covenants tinyurl.com/TRC6b*



Neil and Jackie Whitehead in one of the bush blocks on their property.

Bush guardians find many rewards

Efforts by private landowners to protect and enhance native bush and wildlife are paying valuable dividends for biodiversity in Taranaki—but for Tikorangi dairy farmers Neil and Jackie Whitehead, there's even more to the story.

The Whiteheads, whose 128 hectare farm's bush blocks are recognised by the Taranaki Regional Council as a Key Native Ecosystem, plunged into an intensive programme of predator and weed control, monitoring, planting and track-building after two kiwi were sighted on their property in 2008.

And as well as a resurgence of native bush and birdlife on their property, they say the work has brought another, unexpected benefit.

"It's such a great release from farming's day-to-day stresses and pressures, to be able to go up to one of the bush blocks to do some different sort of work, or to just soak up the atmosphere," says Jackie. "That's a reward in itself. And you can see the native trees are now flowering and fruiting much more heavily, and the birds are fantastic."

The bush blocks contain kahikatea, rimu (including one giant with a trunk circumference of 7.8 metres and diameter of 2.8 metres), rata, king ferns, tōtara, nīkau palms and a host of

other native plants. Besides the kiwi, the property has tūi, kūkupa (kererū), grey warblers, fantails, silvereyes, morepork, New Zealand falcon and harrier hawk (kāhu).

Since late 2008, the Whiteheads and their helpers have:

- laid more than 100 traps and bait stations
- eliminated more than 1,150 predators, including possums, stoats, weasels, rats, feral cats and hedgehogs
- targeted woolly nightshade and Darwin's barberry, two pest plants in some of the bush areas
- undertaken riparian and bush-enhancement planting
- formed tracks through two of the three larger bush blocks, including bridges and hundreds of steps to share the bush with their supporters
- started installing discreet interpretative signage at significant points in the bush
- extended the area under QEII covenant (the first covenants were made in 2005)
- established a website (www.kererukeep.org.nz) to keep sponsors and supporters up-to-date with progress.

'You can see the native trees are now flowering and fruiting much more heavily, and the birds are fantastic.'

The Whiteheads bush blocks were added to the Council's *Inventory of Key Native Ecosystems* in 2009. Council staff have since prepared a Biodiversity Plan at no cost to the Whiteheads, and worked with the couple to implement it. Council staff have:

- provided traps and bait stations, and education and advice on their use
- organised the supply of 1,450 plants
- undertaken monitoring
- provided advice and assistance with track construction
- organised the signage for the bush.



Bush on the Whitehead property.

Indigenous species

New Zealand has an estimated 80,000 indigenous species. Roughly two thirds of these species have been identified and less than half have been formally described. As of 2012, the conservation status of approximately 15% of the country's indigenous species has been assessed. Of those, 3,540 were considered threatened or at-risk. A further 3,940 species were considered 'data deficient', meaning too little information was available to adequately assess the status of the species.

Many introduced plants and animals have a considerable impact on indigenous species and even threaten the survival of some native species. Animals such as stoats, rats and feral cats prey directly on indigenous animal species. As mentioned previously, animals such as possums and feral goats eat native vegetation and damage habitats that are important to native species. Invasive plants can overtake native species in forest remnants, wetlands, cliffs and riparian zones.

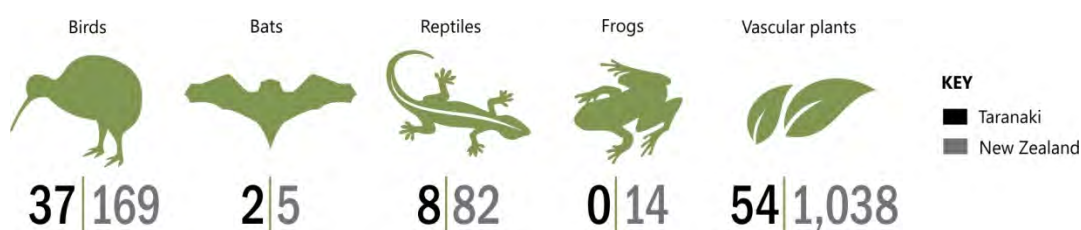
DOC is responsible for managing threatened species. Regional councils and territorial authorities contribute by protecting significant habitats of some of these species on private land.

What's the story?

While Taranaki makes up only 2.7% of New Zealand's land area, 17% of the 270 threatened or at-risk terrestrial fauna species, subspecies, or unique populations in New Zealand are known to be in the region. Data from 2014 shows that in Taranaki there are currently 37 of New Zealand's threatened or at-risk native bird species, two bat species, eight reptile species, and 54 plants.

The region also has six species of threatened or at-risk terrestrial invertebrates, including the Notoreas moth (*Notoreas perornata*), which is considered 'nationally vulnerable'. One endemic large land snail species (*Powelliphanta 'Egmont'*) is found only in Taranaki.

Some species are considered 'regionally distinctive', either because Taranaki is the national stronghold for the species; the species is particularly uncommon in the region; or the species does not exist either further north or further south of Taranaki. Regionally distinctive species are not necessarily nationally threatened.



A number of species and subspecies are listed as threatened or at-risk in New Zealand.

It is likely that both the North Island kōkako and the brown teal (pāteke) have become regionally extinct in the past 30 years. Although small numbers of these birds are present in other parts of the country, DOC advise that the last known kōkako in Taranaki was rescued in 1999 and since then there have been no confirmed sightings.

DOC also estimate Taranaki's surviving breeding populations of species such as the North Island kākā and yellow crowned parakeet (kākāriki) to be very small and unsustainable. Species such as the North Island robin (toutouwai) and both species of bat (pekapeka) are now less widespread in the region than they were in the 1970s. In western parts of the region, including Egmont National Park, these species are either rare or absent.

A major DOC project covering around 7,000 hectares of Egmont National Park has proven successful, with the reintroduction of whio (blue duck) to the region. Annual monitoring by DOC has shown this population to be steadily increasing.

There have also been other successes with bird species in the region.

Since the arrival of humans in New Zealand, the number of kiwi has substantially declined. Western North Island brown kiwi were once widespread in the central-west North Island, including Taranaki. Today, DOC research shows that these kiwi occupy less than 17% of their former range, largely because of habitat loss and predators. In 2007, DOC reported an estimated a 20% decline since the 1970s.

Together, community groups and DOC have been working to reverse this decline in the region. Intensive predator control over thousands of hectares and a 'Kōhanga kiwi' project that allows young kiwi to grow up in a safe environment until they are big enough to look after themselves, have both had inspiring results. Work by the East Taranaki Environment Trust (ETET) has resulted in an increase in kiwi call activity in northern Taranaki.

In South Taranaki, intensive management of 243 hectares around Lake Rotokare, led by the Rotokare Scenic Reserve Trust, includes fencing and pest eradication that has seen the return of the tīeke (saddleback) to Taranaki.

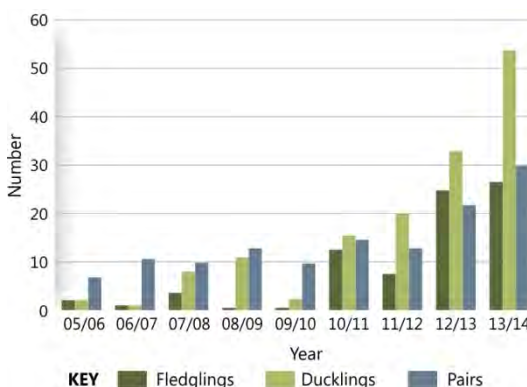
DOC data shows that 80% of skinks and geckos found in Taranaki are considered threatened or at-risk. However, the at-risk goldstripe gecko (*Woodworthia chrysoliretica*) is more widespread in Taranaki than in any other region.

There are no native frogs currently in Taranaki, although they are likely to have been present prior to the arrival of humans. Three introduced Australian frog species are common and widespread in the region.

Three plant species are likely to have become regionally extinct in the past 30 years. These are *Amphibromus fluitans*, *Alepis flavida* and *Schoenus carsi*. The nationally vulnerable *Dactyloctenium* (pua o te ringa) is still in Taranaki, although greatly reduced in abundance. Clearing indigenous vegetation has meant loss of habitat for this parasitic plant. Possums have also been destructive but possum control is helping to slow the decline of this plant species.

Several nationally and regionally rare plants are found in the region. For example, the endemic species *Crassula manaia* is confined to the South Taranaki coastline and not found elsewhere in New Zealand.

To find out more about New Zealand's threatened and at-risk flora and fauna, visit the DOC website.



Number of whoio pairs, ducklings and fledglings observed within the study area of the Egmont National Park Recovery site 2005 to 2014.



Actions by the ETET have resulted in an increase in kiwi calls in north Taranaki since 2011.

Find out more

📄 [Department of Conservation tinyurl.com/TRC6c](http://www.doc.govt.nz/Department_of_Conservation_tinyurl.com/TRC6c)



The nationally at-risk goldstripe gecko is more widespread in Taranaki than in any other region.



The rare tīeke (saddleback).

Iconic project wins region's support

One of Taranaki's iconic biodiversity projects marked a historic milestone in May 2014 with the release of a number of rare and regionally extinct tīeke (saddleback) at Lake Rotokare.

The release followed the successful establishment of a kiwi crèche, followed by kiwi breeding programme or 'kōhanga kiwi' in partnership with Taranaki Kiwi Trust at Lake Rotokare Scenic Reserve. The projects underscore the tremendous value the programme brings as a strategically located haven for endangered native species and a key educational resource for the region.

The Council has been one of the many organisations and people involved in the journey, which started 10 years ago with the formation of the community-owned and community-led Rotokare Scenic Reserve Trust.

The Trust was born of community concern about the reserve's declining state. Its first priority was eliminating the threat of predators, for which two key strategies were used. First was the installation of an 8.4 kilometre high-tech predator-proof fence that now completely surrounds the lake and its 230 hectare bush-clad catchment. Fundraising for and construction of this fence was a testament to the drive of the Trust and the support of the community. The Council became an early partner in this work, providing funding and expertise for the second phase—three aerial control operations targeting possums and rats. The Council continues to support the Trust with advice and practical assistance relating to biosecurity, plus an annual grant of \$30,000, and is also likely to become involved in monitoring population levels of native skins.

Lake Rotokare Scenic Reserve is part of the Council's inventory of key native ecosystems, having been identified as having regionally significant indigenous biodiversity values.

"The release of the tīeke highlights how the Trust and its volunteers are making an important contribution to community efforts to enhance indigenous biodiversity and amenity values in the region," says the Council's Environment Services Manager Steve Ellis. "The tīeke hasn't been seen in the region for 150 years.

"The Trust's vision and determination were apparent from the beginning. They received a Taranaki Regional Council Environmental Award in 2005 and again in 2014, which says a lot about how their work was regarded early on in the piece."

The Trust's Sanctuary Manager Simon Collins says support from across the region, from individuals and organisations like the Council, is a major reason for the Trust's successes so far.

"The region has got on board with the vision, and that's been vital," he says. "It's this sort of support that's helped us to eliminate a dozen predator species, ensure existing native flora and fauna flourish, establish a kiwi breeding population and bring the tīeke back to Taranaki.

"There's still a lot more to do, and it's good to know the regional support is there."

The reserve's status as a regional taonga is beyond question. Its mature tawa, rewarewa and mahoe-dominated forest is home to long-tailed bats, kiwi, rūrū (morepork), kārearea (New Zealand falcon), tūi, korimako (bellbird), kūkupa (kererū or wood pigeon), riroriro (grey warbler), miromiro (tomtit), tīeke (saddleback), popokate (whitehead)—which was also recently reintroduced—toutouwai (North Island robin), plus a variety of other bird species. The lake-edge habitat consists of raupo, flax, and pukatea/kahikatea swamp forest, which is home to notable fauna such as mātātā (fernbird) and pūweto (spotless crane) and two species of tuna/eels and banded kōkopu in the streams and lake.

Half of the tīeke released in May were sourced from Te Hauturu-o-Toi (Little Barrier Island) and the rest from Bushy Park in Whanganui. It is thought that tīeke would have once been found throughout New Zealand; however, after pressure from introduced mammalian predators, such as rats, and the reduction of their habitat, tīeke were soon found only on a single island (Hen Island) in the Hauraki Gulf.



Members of the Rotokare Scenic Reserve Trust releasing 59 rare and regionally extinct tīeke (saddleback) at Lake Rotokare.





A Council Technical Officer conducts ecological monitoring at Lake Kaikura.

Our responses

Regional Policy Statement

The *Regional Policy Statement for Taranaki* sets out a policy framework for managing biodiversity in the region. This framework recognises the importance of protecting indigenous vegetation on land. It also has policies for pest animals and plant management, particularly in areas with regionally significant indigenous biodiversity. The *Regional Policy Statement* recognises the need for remnant habitats to be connected more closely.

Biodiversity Strategy

Biodiversity management is woven into many of the Council's day to day functions and operations. The Council's *Biodiversity Strategy*, was created in 2008 and focuses on implementing actions to manage biodiversity. In the past five years the Council has established a dedicated biodiversity team, including an ecologist, and in the past two years we have developed the Environmental Services Department which combines pest plant and animal management and further streamlines our operations.

There are four priorities for biodiversity management identified in the current strategy:

- ▷ Develop and implement an integrated and coordinated biodiversity and protection and enhancement programme with private landowners on prioritised Key Native Ecosystems.
- ▷ Acknowledge the biodiversity component of existing Council programmes, particularly the provision of education and advice, and bring an increased biodiversity focus to these programmes, especially as they relate to national priorities.
- ▷ Where appropriate, facilitate improved coordination of biodiversity work undertaken by different agencies, trusts and community groups across Taranaki in order to build capacity in the community for the efficient and effective maintenance and enhancement of indigenous biodiversity. This will include the development of community-based partnerships to achieve success with a small number of 'iconic' biodiversity projects.
- ▷ Contribute to the management and development of biodiversity information systems relevant to Taranaki to ensure management decisions are based on sound scientific information and to enable the monitoring of outcomes for biodiversity in the region and the revision of priorities as necessary.

Future directions

Over the next five years we will build on existing biodiversity initiatives to further incorporate biodiversity into strategy and plan reviews. The biodiversity strategy will focus on the Key Native Ecosystem programme, with the aim of adding more key native ecosystems on private land in the region, and working with landowners to develop biodiversity plans for those areas. We also intend to implement a comprehensive monitoring programme, focusing on the condition of biodiversity in the region.



The Bushy Park Key Native Ecosystem.

Department of Conservation

DOC is the principal central government agency involved in the conservation of biodiversity. Its role is broad and multifaceted operating under a number of different statutes, including the *Conservation Act 1987*, the *National Parks Act 1980*, the *Wildlife Act 1953* and the *Reserves Act 1977*. DOC is responsible for managing the public conservation estate, which

includes national parks, marine reserves and other conservation areas. DOC is also responsible for protecting native plants and animals. All native animals are Crown property and the department has considerable experience and expertise in wildlife management, including threatened species recovery. DOC has a strong advocacy role, promoting conservation and administering funding grants.

In Taranaki, DOC is responsible for 146,973 hectares of Crown land (or 21% of the region). It has a range of projects focused on protecting and enhancing biodiversity and conservation values across the region, including invasive plant and animal control on the public conservation estate. This includes possum control, at a level designed to preserve the forest canopy within Egmont National Park, as part of a regular 1080 treatment rotation. It also includes feral deer and goat control involving both the public conservation estate and private land.

DOC also undertakes threatened species recovery programmes in Taranaki, including recovery of the Western North Island brown kiwi and the whio (blue duck) in Egmont National Park and adjacent farmland. Part of the DOC species recovery programme is to support the re-establishment of kōkako in Taranaki.

'DOC is responsible for managing the public conservation estate ...'

Major weed control programmes include controlling giant gunnera on the South Taranaki coast, spartina in the Pātea estuary, climbing asparagus at Lucy's Gully, and climbing spindleberry at various sites between Oākura and Tongaporutu.

District council policy and plans

In addition to the *Regional Policy Statement* and other regional plans and strategies, each district council in Taranaki has a district plan. Amongst other things, these plans address Significant Natural Areas (SNAs) and/or have general vegetation clearance rules. The district councils also have a range of voluntary programmes and initiatives.

In the New Plymouth District, SNAs are eligible for grants for fencing and other enhancements. NPDC also provides landowners who decide to place native bush under a QEII covenant with rates relief for that land. Landowners can also be allowed an additional subdivided lot as part of consent for subdividing any land that

includes a QEII covenanted area. NPDC's Landowner Engagement Project takes a strong collaborative approach between landowners, the Regional Council, DOC, and the Royal Forest and Bird Protection Society of New Zealand to help retain significant areas of native biodiversity.

The Stratford District Council also provides rates relief for landowners with land in a QEII covenant.

In the South Taranaki district, areas of indigenous vegetation and habitats of indigenous fauna are eligible for funding from the Council's Significant Natural Areas Fund. The funding is most commonly used as a contribution towards the cost of fencing the areas for stock exclusion and usually forms part of a larger project involving funding from other organisations. A condition of the funding grant is that the area must receive on-going formal, legal protection, which is usually through a QEII covenant. The SNA Fund is also available for areas that are not listed as SNAs in the South Taranaki District Plan.

The South Taranaki District Plan has general vegetation clearance rules which help retain areas of biodiversity that are not formally, legally protected. Landowners in South Taranaki receive rates relief for any formally, legally protected areas of land.

Key native ecosystems

In 2006, the Council began identifying natural areas with regionally significant indigenous biodiversity values including remnant wetlands, native forests, dunelands and other indigenous habitats.

Collectively known as Key Native Ecosystems (KNEs), a KNE is considered significant because it is home to threatened or regionally distinctive flora and fauna, it is covered in indigenous vegetation, or it connects or buffers other sites of value. The KNE programme focuses on maintaining and improving the biodiversity values of a specified site.

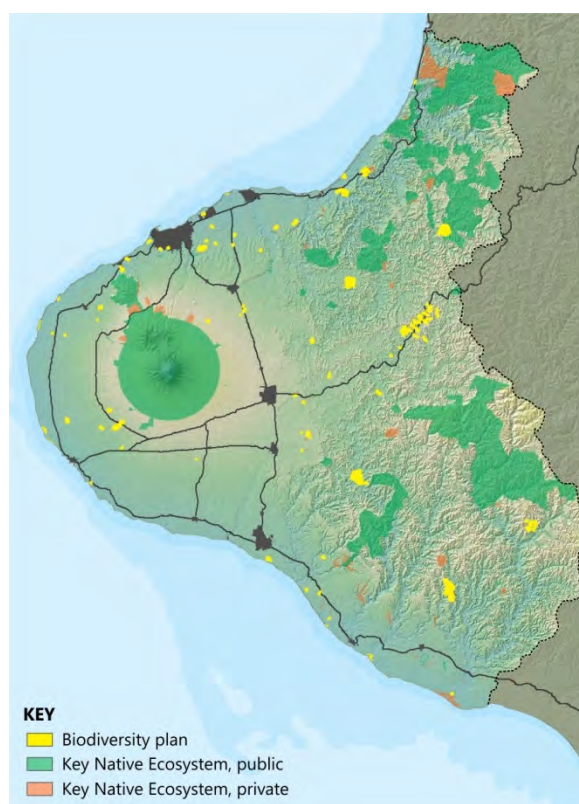
Since 2009, there has been a substantial increase in the number of KNEs identified in the region, with KNEs being identified on an ongoing basis.

As of June 2014, there are 178 remnant native habitats in the KNE programme, amounting to 119,103 hectares. Of these, 132 are either totally or partly on private land and cover 9,277 hectares.

Under certain conditions, when a KNE falls wholly or partly on private land, landowners can receive free advice and assistance for protecting and enhancing indigenous biodiversity in the site. This can include a Council-developed biodiversity plan.

Recommendations in biodiversity plans usually cover actions such as fencing and planting, and controlling pest plants and animals. Plans can also recommend areas for additional formal protection. To date, 64 biodiversity plans have been prepared, covering 2,528 hectares of private land. This equates to 48.5% of the 132 privately-owned KNEs.

Since 2010, the Council has also contributed over 20,000 native plants for enhancing KNEs in the region. In 2013/2014 the Council invested \$639,000 in the KNE programme.



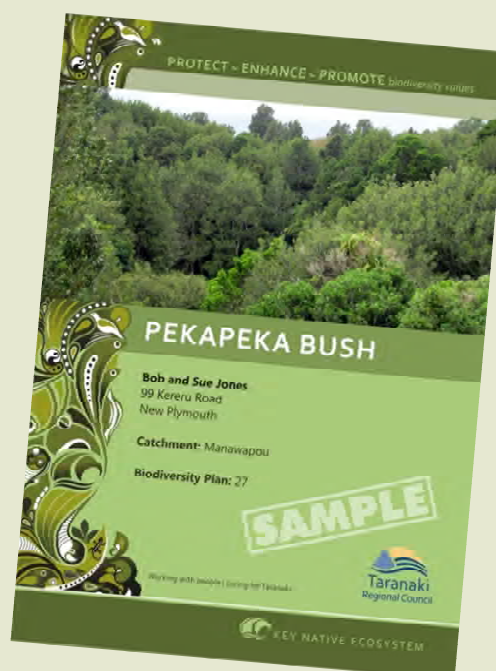
Key Native Ecosystems managed by Council-developed biodiversity plans (in yellow).

Biodiversity plans

Planning the management of Key Native Ecosystems is important to ensure that all aspects of management are considered—it's no good killing the predators if meanwhile old man's beard is smothering the canopy. The Council's biodiversity plans are prepared at no cost to interested landowners (when an area meets the criteria for a plan).

A biodiversity plan is developed in consultation with the landowner, providing them with a clear idea of what is required to sustainably manage the site for biodiversity purposes. It also details tasks a landowner can perform, and areas where council staff or other groups can assist.

Many biodiversity plans are used to access funds from the various funding pools available—QEII, the Council's Environmental Enhancement Grant, district council heritage funds, the Taranaki Tree Trust and the Biodiversity Condition Fund.



Pest management strategies

The Council's pest management strategies for plants and animals identify programmes to eradicate, control and monitor a range of pest plant and animal species. These strategies also include rules for landowners relating to pest control.

Pest animals

The Council's *Pest Management Strategy for Taranaki: Animals* identifies 23 pest animal species. These include possums, feral goats and cats, rabbits, hares, magpies, rooks, argentine ants, three species of mustelids (ferrets, stoats and weasels), four species of freshwater pest fish, and seven species of feral deer. All of these pests have the potential to severely damage indigenous biodiversity.

Possums are a major threat to both the agricultural industry and to native flora and fauna. Much of the Council's pest control operation is focused on possum control.

The Council's award-winning *Self-help Possum Control Programme* is the largest programme of its type in the country. Effectively a joint programme between the Council and landowners to maintain possums at low levels, this dual approach achieves a greater level of control than would otherwise be achieved by a single party.

In the programme, the Council completes an initial possum control operation within a target area, reducing possum numbers to below a 5% residual trap catch rate (RTC). Landowners are then required to keep the possum numbers below 10% RTC.

The number of landowners involved in the self-help programme has increased, from 3,753 properties in 2008 to 4,374 in 2014. This has resulted in an increase of the land area covered by the programme, from 227,000 in 2008 to 235,464 in 2014—approximately 32% of the region. The RTC percentage rate has steadily decreased since 2008 and is generally below 5% RTC.

Highlights of possum control include:

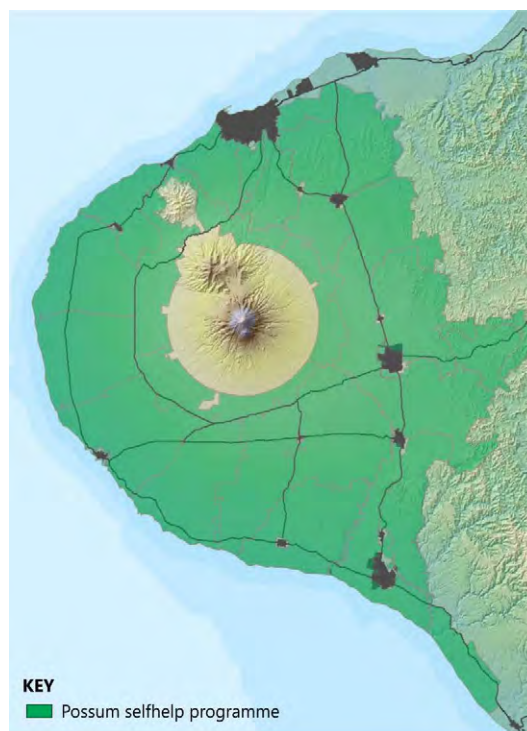
- ▷ In 2008, approximately 9,017 hectares of largely acutely threatened indigenous vegetation was covered by the *Self-help Possum Control Programme*. In 2014, it had increased to 9,278 hectares.

- ▷ The programme now covers almost all private land on the ring plain (except for that in urban areas), as well as significant parts of the coastal terraces and frontal hill country.
- ▷ In 2014, the Council also began possum control within urban New Plymouth to protect indigenous biodiversity within the urban setting.
- ▷ The Council, landowners and DOC undertake possum and other predator control on a regular basis in large areas of the region outside of the self-help area including Egmont National Park and large parts of the eastern hill country.

Unlike other parts of New Zealand, Taranaki has low rabbit numbers and there have only been two rook sightings since 2009. However, Argentine ants, first recorded in Taranaki in 2006 are now established in the region. These ants and other recent arrivals, such as plague skinks, are often accidentally transported by people and are becoming established in urban areas.

The numbers of other pests vary across the region, depending on the habitat and the level of control in the area. Specific predators are controlled at different sites around the region to protect key species and habitats. This is often in conjunction with other agencies or groups.

Economic consultants BERL Ltd estimate hillcountry farmers invested \$2.9 million in pest and weed control between 2009 and 2013. Some of this investment will benefit biodiversity.



By June 2014, the Self-help Possum Control Programme covered approximately 32% of the region.

Pest plants

The Council's *Pest Management Strategy: Plants* identifies 27 pest plant species. At least 19 of these are a threat to biodiversity and landowners have obligations to control them. The Council, DOC, landowners and other agencies control many other pest plants on a site-by-site basis, depending on the particular threat to each site.

Old man's beard is considered the most damaging invasive climbing weed in New Zealand. Landowners are required to control this species where it occurs on their property, with the exception of three areas (Kaūpokonui Stream, Pātea River and Waingongoro River), where it is considered too widespread for effective landowner control. The Council has recently begun a control operation targeting old man's beard in the Kaūpokonui River catchment area (see case study on *page 161*).

The Council directly controls five terrestrial pest plant species identified by the *Pest Management Strategy*. These are: climbing spindleberry, Darwin's barberry, giant reed, mignonette vine and Senegal tea.



A significant amount of work is still required by urban land occupiers to adequately control wild ginger, such as in the example above where plants grow along an urban verge.

Working together

In Taranaki, many agencies, community groups and individuals have an interest in biodiversity and the Council works to coordinate biodiversity management with others.

Along with other agencies, the Council provides funding to private landowners or to trusts for biodiversity projects on private land. Between 2008 and 2013, the Council allocated a total of \$1,857,295 through the Environmental Enhancement Grant. The New Plymouth District Council also allocated \$138,083 through its Natural Heritage Fund and DOC allocated \$882,646 through the Community Conservation Partnerships Fund (formerly the Biodiversity Condition Fund).

Since 2008, the Council has supported several 'iconic' biodiversity projects, including providing ongoing technical and logistical support for community ecological restoration projects. These include the Tiaki te Mauri O Parininihi Trust, which we have supported in intensive possum and rat control in order to benefit kiwi and improve the potential return of kōkako to the region.

We have also provided technical and financial support to the Rotokare Scenic Reserve Trust in South Taranaki, whose work (as mentioned previously) has included eradicating introduced mammals and constructing a predator-proof fence around 230 hectares of remnant forest and wetland around Lake Rotokare. This has led to an improvement in many indigenous plant and animal populations. The tieke (saddleback) and whitehead, previously lost from the area, have both been reintroduced.

We also work with the East Taranaki Environment Trust (ETET), which targets possums, goats, and stoats on more than 13,000 hectares in north-eastern Taranaki in efforts to improve conditions for the Western North Island brown kiwi. A core area of more than 1,000 hectares is extra-intensively controlled for ship rats and possums. This is to prepare a habitat suitable for the return of kōkako to the region.

The Council's programmes support the work of DOC which has more than 1,100 stoat trap boxes within Egmont National Park aimed at protecting kiwi and whio (blue ducks). DOC also manages feral goats within Egmont National Park through a programme that was started in 1925. This is one of the longest running and sustained programmes to control vertebrate pests in the world.

The Council, private landowners and DOC also control feral goats in areas where they are having a significant impact on biodiversity values, mostly in northern Taranaki and in the eastern hill country.



Opening ceremony of the kiwi kōhanga at Rotokare 2012.



Council Environment Officer working with Conrad O'Carroll from Tiaki te Mauri O Parininihi Trust.

Find out more



Tiaki Te Mauri O Parininihi Trust
tinyurl.com/TRC6e

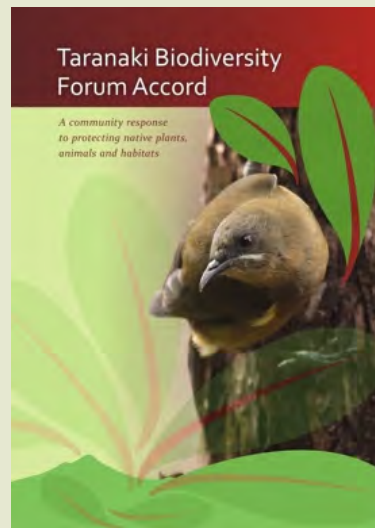
Taranaki Kiwi Trust tinyurl.com/TRC6f

Taranaki Biodiversity Forum Accord

In 2008, the Council led the first Taranaki Biodiversity Forum to provide a vehicle for interested parties to meet, share information, discuss common issues and advance biodiversity in the region. Since 2008, the annual forum has been attended by a large number of trusts and care groups, non-government organisations such as the Taranaki Fish and Game Council, the Queen Elizabeth II National Trust and the New Zealand Royal Forest and Bird Protection Society (north and south branches). It is also attended by local iwi, individuals actively involved in regional biodiversity projects, DOC and the three territorial authorities in Taranaki. In 2012, the Taranaki Biodiversity Forum Accord was born. The signatories of the Accord have recently formed the Taranaki Biodiversity Trust, and have agreed to work together to set a strategic vision, desired outcomes, and biodiversity priorities and actions that will:

- raise the profile of biodiversity generally and increase awareness and understanding of the issues
- provide a vehicle for dialogue, including information sharing, between like-minded but diverse interests
- identify common ground and establish a publicly agreed policy position and partnerships
- make a commitment to positive action
- establish a collaborative framework to better work together and identify opportunities for obtaining the best results from finite resources.

The Accord is a non-statutory document. As such it does not override regulatory functions, roles and responsibilities, including statutory strategies and plans. However, it allows signatories (Accord partners) to look beyond their own sectoral interests and identify opportunities to do what is best for Taranaki. While the vision, outcomes and plan of action focus on maintaining and enhancing biodiversity generally, Accord partners also agree that there is a need for an immediate focus on Taranaki's most valuable, yet vulnerable, biodiversity assets.



The Accord was signed on 27 August 2012, in the presence of the Minister of Conservation, the Hon Kate Wilkinson. It is a living document and current signatories welcome the involvement of further groups.

Current Accord signatories have agreed on key priorities for 2015.



Signatories for the Taranaki Biodiversity Forum Accord.

Information, education and advice

The Taranaki Regional Council website has a series of factsheets and media releases highlighting the region's rare and distinctive flora and fauna, and information about Council-led biodiversity initiatives. We also facilitate a number of open days and workshops informing the public about biodiversity and biosecurity issues, and giving practical advice on topics such as predator control.


The Rainforest School at Pukeiti was developed by the Taranaki Regional Council in 2013 with 15 activity options including walks and studies focusing on identifying indigenous plants, birdlife and fish. Led by the Council Education Officer and regional gardeners, the programme is available for teachers and classes visiting Pukeiti and encourages students to explore concepts such as sustainability and conservation.

In addition, the annual Taranaki Regional Council Environmental Awards recognise and celebrate the efforts of individuals, groups and organisations to protect and enhance the environment, including contributions to biodiversity.



The Council's Education Officer leads students on a journey of conservation discovery as part of the Rainforest School at Pukeiti.

Find out more

-  [Community investments in environmental improvements in Taranaki 2008–2014 tinyurl.com/TRC6ab](https://www.tinyurl.com/TRC6ab)
- [Pest Management Strategy for Taranaki: Animals tinyurl.com/TRC6s](https://www.tinyurl.com/TRC6s)
- [Pest Management Strategy for Taranaki: Plants tinyurl.com/TRC6t](https://www.tinyurl.com/TRC6t)
- [Proposed National Policy Statement on Indigenous Biodiversity \(MfE, 2011\) tinyurl.com/TRC6j](https://www.tinyurl.com/TRC6j)
- [Protecting our Places: introducing natural priorities for protecting rare and threatened native biodiversity on private land \(MfE/DOC, 2007\) tinyurl.com/TRC6k](https://www.tinyurl.com/TRC6k)
- [Regional Policy Statement for Taranaki tinyurl.com/TRC6g](https://www.tinyurl.com/TRC6g)
- [Taranaki Biodiversity Accord tinyurl.com/TRC6h](https://www.tinyurl.com/TRC6h)
- [Taranaki Biodiversity Strategy tinyurl.com/TRC6i](https://www.tinyurl.com/TRC6i)



Old man's beard.

One woman's war on old man's beard

Hanna Padrutt has seen first-hand why old man's beard is classified as a pest plant in Taranaki.

"I saw it smothering mamaku and realised all the ferns would die if nothing was done," she says.

"So I started thinking about what I could do."

That was in 2003. And for the past dozen years she has been waging war on the unwelcome invader at the family's 80-hectare dairy farm, even though the property is in the Kaūpokonui catchment—one of three where control requirements have been waived for landowners because of the severity of the problem. The Taranaki Regional Council has been using biological control in some of these areas.

Hanna destroys dozens of the plants every year, hand-pulling the seedlings and lightly spraying the tops of the bigger plants with glyphosate or metsulfuron. "It's best to get them before they start seeding, but there are always some you miss," she says.

She's also learned from experience that it's important to recheck any infestation a few weeks after spraying.

Old man's beard is a woody, perennial climber that can grow up to 25 metres high if left unchecked, competing with and smothering native plants. "The good thing is that even if an infestation looks big, it's probably made up of only a few plants, and you can deal with them," says Hanna.

A major bugbear of the plant is that it seeds prolifically, and the seeds are easily carried down catchment waterways. The Council's approach under its current *Pest Strategy for Taranaki: Plants* has been to require landowners to destroy it wherever it is found, except if it is within 50 metres of the Kaūpokonui, Waingongoro and Pātea Rivers.

However, in 2014 a trial scheme was introduced in the Kaūpokonui catchment and in the first stage, the Council engaged contractors to cut and treat all old man's beard vines

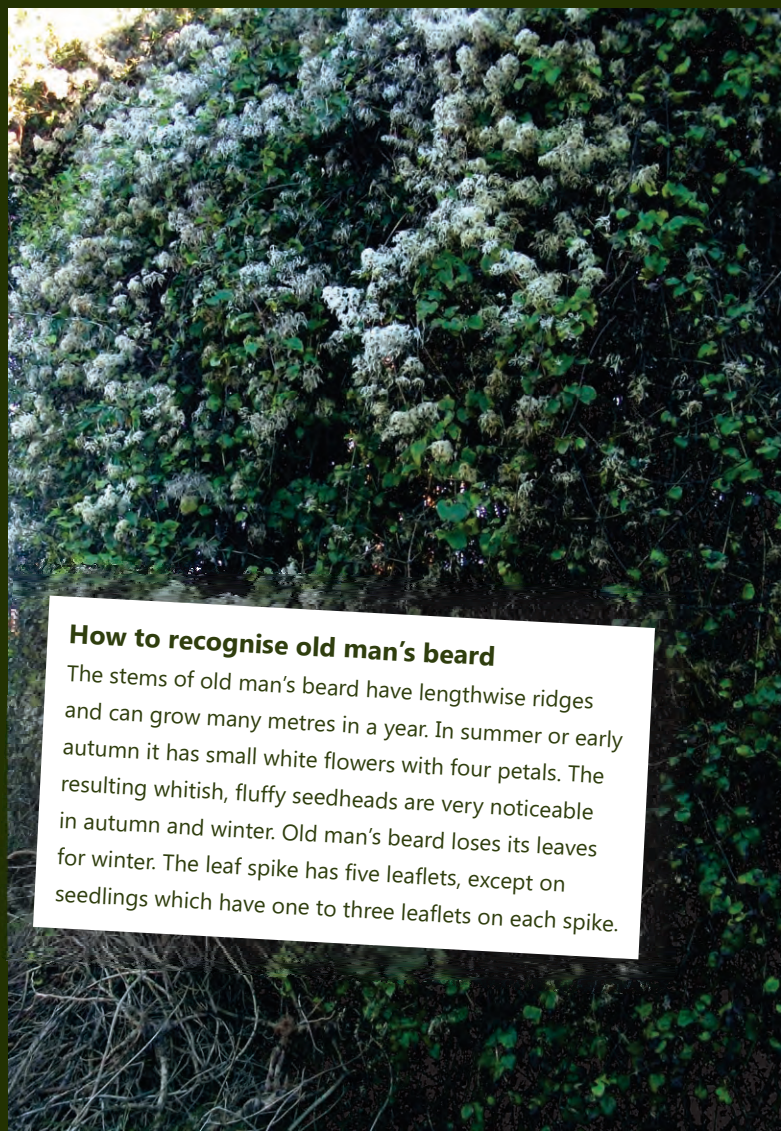
from Opunake Road to Skeet Road, then from Skeet Road to the coast, with the aim of reducing infestation by more than 95%. The Council will fund re-treatment in these areas for up to three years, to catch any regrowth. Following this, landowners will be required to continue to control old man's beard in the area.

Hanna believes old man's beard is such a problem that it should be destroyed wherever it is found. "We need to prevent old man's beard threatening the good work done with riparian planting," she says.

She also believes education is vital. "Let the young people see native bush that hasn't got pest plants, and then let them see what pest plants can do. And teach them how to recognise native plants and pest plants—that is important."

The Council's Environment Services Manager, Steve Ellis, says Hanna's efforts demonstrate that commitment and a consistent, methodical approach can defeat persistent pest plants such as old man's beard.

"Her achievements are impressive and she is a good example for other landowners to follow, and an inspiration to the Council officers who work with her."



How to recognise old man's beard

The stems of old man's beard have lengthwise ridges and can grow many metres in a year. In summer or early autumn it has small white flowers with four petals. The resulting whitish, fluffy seedheads are very noticeable in autumn and winter. Old man's beard loses its leaves for winter. The leaf spike has five leaflets, except on seedlings which have one to three leaflets on each spike.