

**Final, 30 July 2009**

**TE ARA KAKARIKI: GREENWAY  
CANTERBURY**  
**Independent report to justify a funding application**



Yaldhurst Bush, initiated as a Beautiful NZ planting project in the 1980s; now managed by Christchurch City Council

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**July 2009**

# SUMMARY

Te Ara Kakariki: Greenway Canterbury is a charitable trust established to stimulate and foster the use of native plants to form an ecological connection across the Canterbury Plains linking the mountainous hinterland with the coast and Banks Peninsula. It has applied for funding to employ a coordinator, and has been asked for more information to clarify how the trust's kaupapa differs from those of other agencies and groups. This independent report finds that no other agency or group has the same explicit vision of a terrestrial Greenway across the plains, and that a coordinator is necessary for Te Ara Kakariki to get underway and make progress.

# CONTENTS

Introduction	2
The Ecological Context: Natural History of the Canterbury Plains	2
Te Ara Kakariki Vision & Policy Linkages	5
A model site: Prebbleton Nature Park	9
Priorities for Te Ara Kakariki	10
What Te Ara Kakariki has achieved so far	11
Relevant projects (other agencies)	11
The case for a Te Ara Kakariki Coordinator	14
Acknowledgements	15
References & Information Sources	15
<b>Appendix 1:</b> Photo Selection	17
<b>Appendix 2:</b> Map of Selwyn District & Christchurch City, showing Ecological Districts	24
<b>Appendix 3:</b> Map of Selwyn District, showing Present and Past Native Vegetation	25
<b>Appendix 4:</b> Map of Selwyn District, showing Potential & Verified Significant Natural Area (SNA) Site Centres	26
<b>Appendix 5:</b> Map of Canterbury Mudfish Distribution	27
<b>Appendix 6:</b> Te Ara Kakariki Application as Submitted to the Biodiversity Advice Fund, 2007	28

“We are seeing record rates of agricultural intensification and, as a consequence, rates of lowland biodiversity loss never encountered before.”

Dave Choquenot, Landcare Research, Lincoln, in The Press, 18 July 2009.

## **INTRODUCTION**

Te Ara Kakariki: Greenway Canterbury is a recently incorporated charitable trust established to foster the use of native plants to re-create vegetation and native fauna habitats across the Canterbury lowlands between the Waimakariri and Rakaia Rivers (see map, Appendix 2). This area coincides with the lowland portion of Selwyn District, with Christchurch City tucked into its north-eastern corner, and the concept is to create an ecological linkage between Banks Peninsula and the inland mountains.

In May 2007 the trustees of Te Ara Kakariki (TAK) lodged an application to the Biodiversity Advice Fund (BAF) to fund a coordinator for three years. In October 2007 TAK was awarded a partial grant to provide a report to the BAF to help clarify the biodiversity context and how TAK would action its vision. This report is the result. It is the product of gathering relevant information, some site visits and a series of interviews with representatives of the people, agencies and businesses most likely to be involved.

## **THE ECOLOGICAL CONTEXT: NATURAL HISTORY OF THE CANTERBURY PLAINS**

The Canterbury Plains were once clad in a cloak of forest, most likely dominated by totara and matai. The exceptions would have been in the flood plains of the rivers, where shrubs, small trees such as kowhai and kanuka, tussock grasses and specialised plants such as mat daisies would have grown, and in damp sites which would have had wetland vegetation that included kahikatea, cabbage trees, harakeke, toetoe and various sedges and rushes (Molloy 2004, Walls 2005, Meurk 2008). Inland, where the plains met the hill country, black and mountain beech would have been locally dominant. At the other end, where the plains met Banks Peninsula, the hills would have had mixed forest of podocarps and broadleaved trees, with specialised rock plants on the numerous volcanic outcrops. The beaches would have had a colourful fringe of sandbinders (pingao, spinifex, sand tussock and various wiry shrubs).

Putaringamotu (Riccarton Bush), with its towering kahikatea, gives the only remaining glimpse of the great forests that previously occupied the plains, and the best wetland example, largely because of extensive native plantings, is Travis Wetland. Both are within Christchurch City, and are managed by the city council with local community involvement.

Birds would have been everywhere: in the mountains, in the bush, in the wetlands and on the coast. The big ground birds (moa, adzebills, rails, kiwi, kakapo and geese) would have made well-beaten tracks and kept the margins of water bodies as turf. Native bats, lizards, freshwater fish and invertebrates (including giant insects and snails) would have been widespread and abundant. All that changed when people arrived.

People have lived in the district for at least 700 years. The first settlers - of Eastern Polynesian origin - hunted and gathered, roaming widely and probably in distinct seasonal patterns. They began burning the vegetation, and as a result large areas of forest became replaced with mosaics of tussock grasslands, shrublands, treelands and bush pockets. Their dogs (kuri) and rats (kiore) proliferated at the expense of the native fauna. Over time these people – Maori – became less nomadic and took up large-scale gardening. Taumutu is the

southern-most place in eastern New Zealand where kumara could be reliably cultivated. Established foot tracks led inland and over mountain passes to the West Coast.

Pakeha arrival and influence saw even more major changes. In a very short time most of the remaining forest was felled for timber or cleared for farming. Enormous fires swept the land, burning tussocks, shrubs and trees in the quest for sheep grazing. Numerous exotic plants and animals were introduced, planted, sown or released. Straight lines were imposed on the land, and it was surveyed, divided up and settled in the European system of ownership. Waterways were channelled and straightened and wetlands were drained. The modern face of the district began to emerge, but the indigenous (native) character, flora and fauna took a tremendous beating. Sadly, few natural areas were set-aside for posterity in the lowlands.

Even now, the losses of native vegetation and native fauna habitat continue. It is estimated that less than 0.5% of the Canterbury Plains area is now in native vegetation, making it the most denuded part of New Zealand (see map, Appendix 3). What remains are minute fragments of forests, treelands, shrublands, grasslands and wetlands, isolated and vulnerable. They are mostly in corners of paddocks, untilled/unfertilised pasture, hedgerows, road and railway verges, riverbanks and wetland margins, and too few and far between for natural regeneration. Intensification of farming practice and conversions to dairying are seeing hedgerows removed, long established water races filled in, damp areas drained and trees felled. The recent loss of about six hectares of kanuka treeland in a dairying conversion is a shocking example. The loss of two of the last remnants of manuka shrubland on the shores of Te Waihora (Lake Ellesmere) is equally unfortunate.

Surprisingly, several threatened plant species are still present, although in tiny numbers (Head and Buunk 2005). They include *Myosurus minimus* and the recently described *Olearia adenocarpa* (both listed as **Threatened: Nationally Critical** in de Lange et al 2009) and *Raoulia monroi*, *Aciphylla subflabellata* and *Muehlenbeckia ephedroides* (listed as **At Risk: Declining**).

The native birds have almost completely gone, as their habitats have been removed. Of the native forest birds, only fantail, riroriro and silvereye remain as residents of the plains, associated with trees and shrubs (mainly exotic species). Other species such as bellbird, kereru and falcon might occasionally visit or pass through, whilst Australasian harrier, black-backed gull, welcome swallow, pipit and spur-winged plover can operate in farmland so long as there are refuges for nesting and roosting. Species such as kingfisher, black-fronted tern, banded dotterel, wrybill, grey duck and Australasian bittern are dependent on wetlands (including braided rivers).

Lizards are probably now limited to pockets of common skinks in “rough” places such as terrace risers, unimproved grassland and scrub (Marieka Lettink, pers. comm.). Native invertebrates are also low in numbers and diversity because of lack of habitats. Surveys have shown that populations remain where there is native vegetation and on streambanks, that native plant species often have invertebrates specific to them, and that some species will reappear once native plants are established (Rowan Emberson, pers. comm.). Freshwater fish are in a similar plight, especially Canterbury mudfish (**Threatened: Nationally Endangered**), due to habitat degradation (including loss of riparian vegetation), water abstraction for irrigation, predation by introduced trout and closure of water races (Anita Spencer, pers. comm.). Canterbury mudfish are endemic to the Canterbury Plains and foothills, with a concentration in the heart of the Selwyn District (see Appendix 5).

**In summary:**

- Any site with remaining native plants on the Canterbury Plains is ecologically valuable.
- The lack of seed sources for dispersal (by birds, water and wind) for natural regeneration means that to begin to restore native vegetation in this ecologically impoverished landscape, planting is required.
- Community awareness-raising of this situation and coordination of goodwill and energy for restoration are also needed.

# TE ARA KAKARIKI VISION & POLICY LINKAGES

## The Vision

Te Ara Kakariki: Greenway Canterbury refers to the vision for a native plant network across the Canterbury Plains, between the Waimakariri and Rakaia Rivers. 'Kakariki' is the Maori word for green and also the name of the native parakeet, whilst 'Te Ara' refers to a pathway. The trust is therefore promoting a 'Greenway', or a network of patches and corridors of native plants and plant communities spanning the Canterbury Plains from the mountains to the sea, re-created by the people who live there, and for the benefit of all and future generations.

This vision is distinct from that of any other agency or group. No-one else has as its core agenda the creation, through strategic planting of native plants, of an ecological corridor across the Canterbury Plains between the big rivers, to connect the mountain hinterland to Banks Peninsula and the coast. However, it links up with other biodiversity conservation policies and initiatives.

## Key Policy Linkages

Te Ara Kakariki's vision meshes with the visions of local authority, tangata whenua and national biodiversity strategies, policies and programmes. The following are the key linkages. TAK is working on establishing good dialogue with the agencies involved, so that larger and complementary outcomes can be achieved. Good progress has been made in that regard, with representation of the key agencies on the TAK management group, in the spirit of working in ways that are compatible rather than in competition.

### **1. Canterbury Biodiversity Strategy (Environment Canterbury)**

The vision statement of the Canterbury Biodiversity Strategy, launched by Environment Canterbury (ECan) in 2008, is:

“The Canterbury community values and cares for the region's biodiversity and accepts the shared responsibility to work together to ensure it is sustained and enhanced, both now and into the future.

As a result, there is a full range of healthy ecosystems stretching from the mountains to the sea, reflecting the unique and diverse natural character of the Canterbury region. Our indigenous biodiversity is an integral part of our everyday lives and landscapes, it complements the productivity of our sustainable economy and working lands, and where appropriate, it supports sustainable harvest.”

The TAK vision fits in with this perfectly. Two of the goals in the Strategy are particularly relevant:

“Restore the natural character of degraded indigenous habitats and ecosystems.”

“Encourage, celebrate and support action by landowners and communities to protect, maintain and restore biodiversity.”

Selwyn District Council (SDC) has formally adopted the Canterbury Biodiversity Strategy, as have Te Runanga o Ngai Tahu, Christchurch City Council, Department of Conservation, Banks Peninsula Conservation Trust, QEII National Trust, NZ Landcare Trust and Fonterra.

ECan has some land holdings within Selwyn District, mostly associated with the lower reaches of the big rivers and flood control. Through its Parks and Reserves department it is engaged in some localised planting of native plants in places on this land, mainly as part of its development of Waimakariri River Regional Park to the NW of Christchurch. This park is likely to become an important link in the Greenway. TAK is not intending to become involved in the plantings, but may be able to identify and plant sites that link the park to other ecological stepping stones.

## **2. Selwyn District Ecological Overview (Selwyn District Council)**

In 2005, an ecological overview for Selwyn District was compiled to identify priorities for the assessment of significant natural areas (SNAs) on private land, and potential management options (Walls 2005). It was done at the request of SDC to help guide its implementation of the responsibilities (under the Resource Management Act 1991) of local authorities to assist landowners to protect SNAs. The overview covers the precise land area of concern for TAK, and recognises the desperate need to stimulate protection and enhancement of remaining natural sites and features on the Canterbury Plains (see map, Appendix 4). Among its conclusions is:

“Other natural values exist outside the SNAs. In some parts of the district, especially the plains, they are just about all the indigenous biodiversity left. They are worthy of recognition, nurture and enhancement. Their conservation requires a different approach, involving community education, advice and practical support.”

TAK is not setting out to overlap with SDC in identifying and protecting SNAs unless requested to do so. Some of the SNAs might be valuable stepping stones in the Greenway, in which case TAK would aim to create ecological linkages to the next and/or previous stepping stones.

## **3. Ngai Tahu Goals (Te Runanga o Ngai Tahu)**

The following have been identified by Te Runanga o Ngai Tahu as future initiatives (TRoNT 2001; Pauling 2007) that are of direct relevance to the TAK vision:

- Increased abundance of, access to, and use of mahinga kai, as a major vehicle for the transfer of traditional knowledge about the natural environment;
- Riparian restoration as the key priority in control of ongoing land-use impacts, and protecting and enhancing native biodiversity;
- Carbon sinks as a possible way to integrate native plants and plant communities into the productive landscape;
- Sustainable, multiple use indigenous forestry as a way to generate long term economic, cultural and environmental benefits;
- The importance of increasing the knowledge and use of native plants across the board, including plants for shelter, fire resistance, gardens, turf, food, fibre, flowers, habitat, remediation and buffering.

TAK may be able to provide plants or give advice. Riparian restoration is more appropriately the domain of Waihora Ellesmere Trust (WET).

#### **4. National Priorities, ‘Protecting our Places’ (Ministry for the Environment and Department of Conservation)**

All four of the national priorities identified for protecting rare and threatened native biodiversity on private land (MfE and DOC 2007) are relevant to the TAK vision:

**National Priority 1:** To protect indigenous vegetation associated with land environments, (defined by Land Environments of New Zealand at Level IV), that have 20 percent or less remaining in indigenous cover.

The Canterbury Plains are almost off the bottom of the scale, with less than 0.5% remaining, so fall straight into the lowest category of <10% indigenous cover (see Figure 1).

**National Priority 2:** To protect indigenous vegetation associated with sand dunes and wetlands; ecosystem types that have become uncommon due to human activity.

TAK has a potential role in restoration planting, particularly around the shores of Te Waihora (Lake Ellesmere), although Waihora Ellesmere Trust (WET) is better placed for wetland and riparian restoration. Otherwise there are very few remaining opportunities on private land. Water races probably qualify as wetlands.

**National Priority 3:** To protect indigenous vegetation associated with ‘originally rare’ terrestrial ecosystem types not already covered by priorities 1 and 2.

Braided riverbeds, such as those of the Waimakariri, Selwyn and Rakaia Rivers, are listed as ‘originally rare’ ecosystems.

**National Priority 4:** To protect habitats of acutely and chronically threatened indigenous species.

Several plants on the plains (see above) fit the threat definitions and are listed accordingly. Canterbury mudfish and birds such as kereru, black-fronted tern, black-billed gull, wrybill, grey duck, Australasian bittern and falcon, are also listed (Hitchmough et al 2007).

#### **5. Other Important Partners**

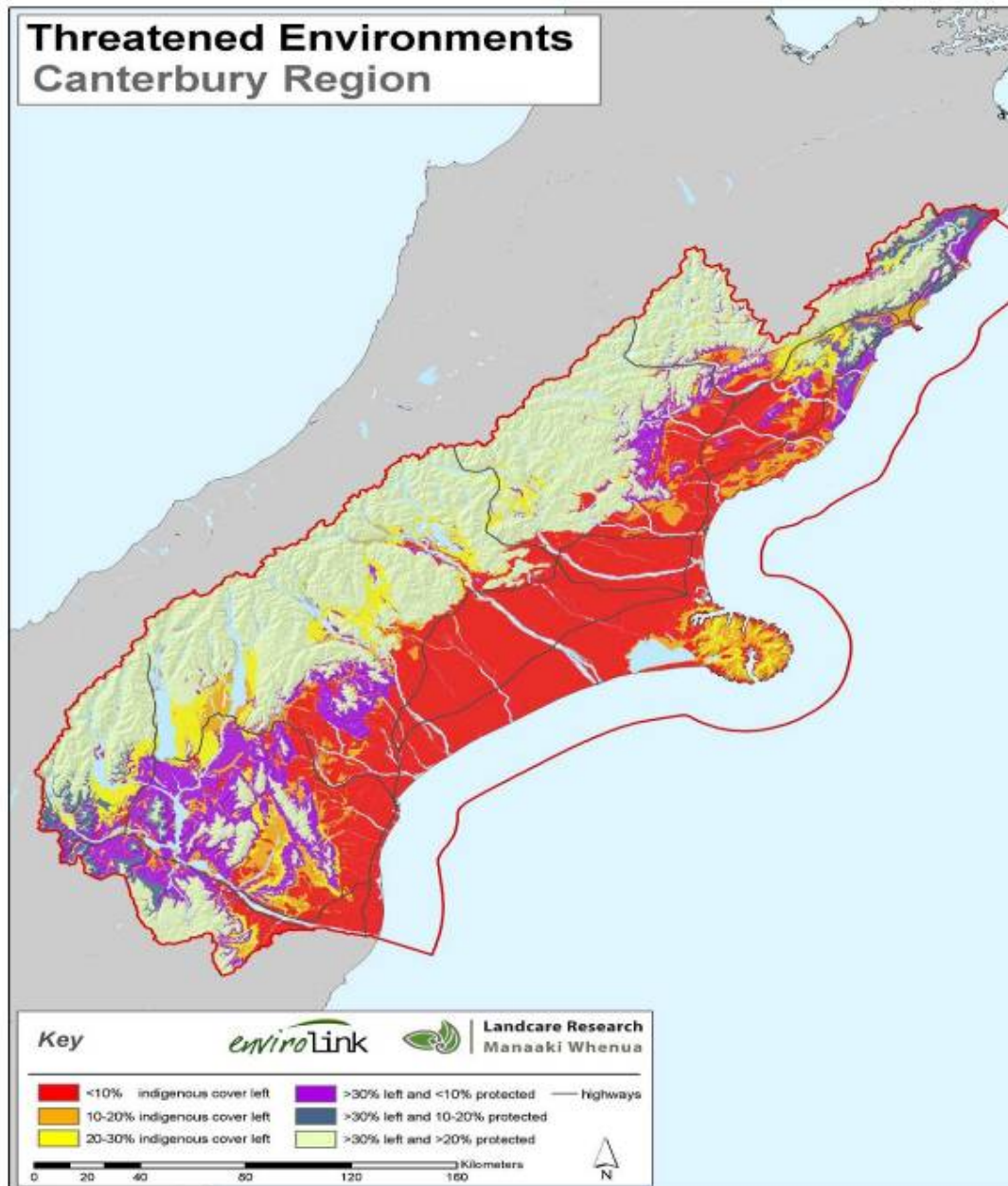
Other agencies that have indicated their support for TAK are:

- Christchurch City Council (Parks and Reserves)
- Department of Conservation
- NZ Landcare Trust
- Federated Farmers
- Waihora Ellesmere Trust (WET)
- QEII National Trust
- Banks Peninsula Conservation Trust
- Forest and Bird
- The Isaac Wildlife Trust and The Isaac Centre for Nature Conservation (Lincoln University)

- Southern Woods Tree Nursery
- Copthorne Hotels, Christchurch
- NZ Ecological Restoration Network

**Figure 1: Threatened Environments, Canterbury (LENZ).**

The entire plains system is in the most desperate category (red) of <10% indigenous cover left. The actual situation is far worse than that, the plains indigenous cover reduced to <0.5%, and losses still continuing. TAK's operational area is the central red zone between the two big rivers (white) that reach the coast either side of Banks Peninsula.



## **A MODEL SITE: PREBBLETON NATURE PARK**

Restoration of a defunct gravel pit at Prebbleton using native plants was the inspiration of Michele Frey, a student at Lincoln University, who lived next door. As part of her Masters degree she proposed some research on how to engage communities in the re-vegetation of gravel pits. This was supervised by Professor Ian Spellerberg, a TAK Trustee. Michele presented a concept plan to Selwyn District Council (the owners) in 2003. SDC ran with the proposal, appointing a landscape designer to design and manage the project. Thousands of native plants have since been put in the ground, which varies from flat areas to vertical faces and from dry ground to a substantial pond. Already it is an oasis in the desert of the Canterbury Plains, an attractive haven to visit featuring a rich range of plants that are natural to the Canterbury lowlands. Wetland birds now use the pond, and birds such as bellbird, kereru and kingfisher are occasional visitors. The park is now maintained as a partnership between SDC and the Prebbleton Community Association. Another of the TAK Trustees, Colin Meurk of Landcare Research, has been an advisor to this restoration project.

Prebbleton Nature Park is an excellent model for what can be achieved in such sites. There are about 300 other gravel extraction sites in Selwyn District, administered by SDC, some of which might be suitable for restoration planting. It is very much dependent on the presence of a keenly interested adjacent community.



## **PRIORITIES FOR TE ARA KAKARIKI**

Key tasks to implement the project in its first three years were identified and described in the 2007 funding application (Appendix 6). They were:

1. Develop a 'register' of individual landowners and other interested individuals and groups who wish to be part of the Greenway.
2. Pull together, promote, distribute and provide key resources and information to landowners.
3. Identify and support key restoration sites within the district from the register by providing one on one support and advice to landowners that will begin to form part of a coordinated Greenway.
4. Develop and distribute a document that describes and displays past, present and future scenarios for native biodiversity within the district to educate about, and promote, the Greenway.
5. Identify and coordinate further research that supports the aims of the project.
6. Run workshops, produce newsletters, and other regular events for registered landowners, members and the wider community.
7. Coordinate planting days, volunteers, and assist landowners and groups to seek and secure other funding for restoration of key sites identified.
8. Develop and implement a communication strategy to promote the Greenway concept and to enhance the transfer of information undertaken within the project generally.

They represent the priorities for TAK, assuming a coordinator is employed. However, they don't make clear what defines TAK's focus as different from the work of other agencies. In the meantime, the top priorities, as I see them, are:

1. Employing a TAK coordinator.
2. Promoting the TAK vision - and how it differs from that of other agencies and groups - particularly within the rural community. Professor Spellerberg is actively doing this when possible.
3. Establishment of a series of "green dots" on the Canterbury Plains. A tourism company has made a donation to TAK for the expressed purpose of planting native plants to offset their carbon emissions. The plan is to find 10 sites, approximately 5km apart, right across the plains (birds typically spread seeds of native plants up to 2.5km), and to plant in each. At least five such sites have been found so far.
4. Identifying other suitable sites for planting, and getting the propagation of appropriate eco-sourced native plants underway.
5. Show-casing model ecological restoration sites (e.g. Prebbleton Nature Park) and engaging with other local communities interested in such projects in their locality.
6. Fund-raising.

## WHAT TE ARA KAKARIKI HAS ACHIEVED SO FAR

The following is a list of TAK achievements to date.

**Flock Hill Workshop:** A workshop was held in April 2007 on the role of native plants and native plant communities on the Canterbury Plains, and their contribution to sustainable development. Hosted by Lincoln University and the Isaac Centre for Nature Conservation, it brought together experts from a number of agencies. It endorsed the TAK vision and helped in guiding TAK forwards. The workshop proceedings were published (Spellerberg et al 2007).

**Established a Schools Project:** Visits to schools in Selwyn District for children to learn about native plants and gardening. Funding from Selwyn District Council and supported by Southern Woods Tree Nursery. TAK in an advisory role.

**Facilitated native plantings:** TAK acted as a broker for plantings funded by Copthorne Hotels, Christchurch, to offset their ecological footprint.

**Promoted the issue of the status of native plants on the Canterbury Plains:** To this purpose, TAK has produced a pamphlet, stimulated articles in newspapers and magazines, created a web site, established communication with other agencies and groups, and attended many strategising meetings.

**Floated the idea of a National Native Plant Centre:** TAK has held discussions with all local native plant nurseries about promoting increased use of native plants and the Greenway Canterbury concept.

**Found sponsorship:** TAK has attracted small-scale but very useful sponsorship from Copthorne Hotels, Christchurch.

**Green Dots Project:** Planting native trees in a series of sites across the plains to create seed sources for bird dispersal so that the dots might eventually become connected. Funded by a tourism company for offsetting its carbon footprint.

## RELEVANT PROJECTS (OTHER AGENCIES)

The following is a list of projects run by other agencies that are relevant to TAK. Several offer potential opportunities for TAK involvement if they contribute to the Greenway concept.

**Lincoln University Dairy Farm Native Plantings:** A model for the dairy farming industry, integrating production with biodiversity restoration. 6,000 native plants planted in 2008 by Brailsfords Ltd. Advice from Landcare Research. Prompted by the Flock Hill Workshop.

**Motukarara Nursery (Department of Conservation):** Working to safeguard the rare and threatened plants of lowland Canterbury, both in situ and by planting in secure sites. Promoting the use of locally sourced plants natural to planting sites.

**Department of Conservation Biodiversity Programmes:** DOC has on-going programmes to conserve rare and threatened native species (flora and fauna) and their habitats. TAK is guided by those programmes where those species occur or can be restored through planting.

**Izone Landscaping:** Selwyn District Council's new 180 hectare industrial site near Rolleston, professionally landscaped and in the process of being planted with 50,000 native plants. Professor Spellerberg interviewed, applauding the initiative.

**Selwyn District Council's Significant Natural Areas Programme:** A programme for identifying ecologically significant sites on private land in Selwyn District, and for supporting protection and enhancement if the landowners are interested. Offers opportunities for collaboration with TAK at sites important for the Greenway, and sets benchmarks for guiding the species composition of restoration planting projects. SDC has a contestable Natural Environment Fund, for which the first priority is protection of significant sites.

**Selwyn District Council Review of Water Races and Gravel Reserves:** SDC is reviewing its needs for these features. In places, the water races have native plants, established naturally, lining their banks. Some are critical for the survival of mudfish, yet are being destroyed in dairy farm developments. The gravel reserves are pockets of land in SDC ownership, many of which could be ideal for restoration in native vegetation by TAK and local communities. SDC is involved in restoration planting on other bits of Council-owned land, such as Coe's Ford and the Southbridge cemetery pit.

**Christchurch City Council Parks and Reserves:** CCC looks after some superb natural areas on the lower Canterbury Plains, such as Putaringamotu (Riccarton Bush) and Travis Wetland. It has some important restoration planting sites, including Halswell Quarry Park and Styx Mill Conservation Park, and is responsible for riparian native plantings throughout the city. The Botanic Gardens in Hagley Park have extensive mature native plantings. Native bush birds, including bellbirds and kereru have recently established themselves in the bush sites from populations in the bush areas on the Port Hills (mostly CCC reserves). The wetlands are havens for water birds. These parks and reserves are models of restoration management based on native plants, and demonstrate the ecological linkages missing from the rest of the plains.

**Canterbury Restoration Field Days (September 2009):** Environment Canterbury (ECan) will be hosting public field days for anyone interested in the restoration of native biodiversity. This is a publicity opportunity for TAK, and could stimulate practical projects.

**Waihora Ellesmere Trust (WET) Riparian Restoration Planting Projects:** Focus on wetlands and riparian zones. A model restoration project has been completed at the end of Mitchells Road, on the Hororata River, involving road reserve and adjacent private land, to restore the riparian zone in native vegetation, primarily for the benefit of Canterbury mudfish. Offers scope for collaboration between WET and TAK if dryland areas nearby are available for planting.

**QEII National Trust Open Space Covenant programme:** There are a number of covenants formally protecting fragments of native vegetation on the Canterbury Plains. They are mostly dryland remnants and are proving to be challenging to manage, but they contain threatened plants and are high priority for conservation. Some sites could be appropriate for planting.

**Motukarara Dryland Site Restoration:** Selwyn District Council owns a rough roadside block of about 4 hectares that has recently been logged of its exotic trees. The Council has offered the site for restoration planting in natives in collaboration with TAK. It would make an excellent demonstration site, involving the local community. Funding is being sought for the plants and site preparation.

**Dunsandel Water Race Restoration Planting:** The water race at Dunsandel offers the opportunity for restoration planting along its margins. It would be another good demonstration and community project.

**Honda Tree Fund:** Since 2004, Honda New Zealand has funded 10 native trees for planting for every car sold, with the individual Honda agents funding a further three trees. That's an average of more than 75,000 trees funded and planted each year. TAK might be able to collaborate with Honda for restoration planting in Selwyn District.

**NZ Farm Forestry Association:** The Association encourages the planting of native trees for timber on farms. Totara and black beech probably hold the most promise on the Canterbury Plains and foothills. Some local authorities do not allow the felling of native trees over 3m tall, whether planted or naturally occurring. In such cases, consent to harvest is required. TAK could work with the Association and SDC to promote the planting of native trees on farms within Selwyn District for forestry, shelter and native fauna.

**Roadside Management:** Fenced roadsides are often the only parts of the landscape not cultivated or grazed, thereby providing refuges for native plants. The Canterbury Plains are a prime example, the road verges in places containing remnant cabbage trees, tussock grasses, flaxes (harakeke), shrubs and bracken. Indiscriminate use of herbicides and mowing are a major threat to these remnants. TAK could take up this issue with the agencies involved and seek to identify road verges suitable for planting native plants.

**Railways:** Similarly, railways may contain the last vestiges of native vegetation and offer sites for planting native plants. Professor Spellerberg prompted Trans Rail to establish pilot plantings but the idea was shelved because of lack of support by Christchurch City Council.

**Other Public Land:** Places such as public reserves (of various types), schools, prisons and armed forces land (e.g. Burnham Military Camp) may have sites suitable for native plantings.

**Other Private Land Sites:** In addition to significant natural sites and farm forestry blocks, landowners might be interested in planting corners of paddocks, road frontages and other "waste spaces" in native plants.

## **THE CASE FOR A TE ARA KAKARIKI COORDINATOR**

The case for a dedicated TAK coordinator was fully expressed in the 2007 funding application (Appendix 6), but lacked clarity in terms of TAK roles as distinct from those of the local authorities and other agencies. Based on the information and perspectives gathered for this report, the following conclusions are made.

1. The Canterbury Plains are the part of lowland New Zealand most devoid of native vegetation. Seed sources for natural regeneration are virtually non-existent. Therefore, the Te Ara Kakariki Greenway Canterbury vision is appropriate and necessary if native vegetation and fauna are to be protected, restored and reconnected, eventually forming an ecological linkage from the mountains to the sea.
2. This vision is distinct from that of any other agency or group. No-one else has as its core agenda the creation, through strategic planting of native plants, of an ecological corridor across the Canterbury Plains between the big rivers, to connect the mountain hinterland to Banks Peninsula and the coast. It is different from but compatible with the visions of the local authorities and has the advantage of independence in working with private landowners, businesses and communities.
3. The task of protecting, nurturing and restoring native plants in Selwyn District is large and complex. Selwyn District Council rightly has a focus on identification and protection of remaining sites containing native biodiversity values. It is not operating with the purpose of creating a Canterbury Plains Greenway, although some remnants could be important as stepping stones. TAK is intent on filling in the big gaps between sites.
4. Environment Canterbury has an advocacy role in protecting and enhancing native biodiversity, but its own native planting programmes are confined to its own reserved land. The Department of Conservation's resources are spread too thin to deal with much more than high priority species rescues. Waihora Ellesmere Trust is focussed on riparian restoration. Therefore TAK fills a gap with its Greenway vision of restoration. There appears to be plenty of room for all on the scene, and for collaborative working partnerships where appropriate.
5. The Te Ara Kakariki Trustees are all experienced experts in conservation, but all have very busy professional and private lives. They meet regularly but can mostly only give attention to TAK matters in their limited own time. The range of tasks identified as priorities (above) are way beyond the scope of the Trustees or the management group. To move the TAK programme ahead and convert dreams into reality requires at the very least a dedicated coordinator.

## **ACKNOWLEDGEMENTS**

I am grateful to the Te Ara Kakariki trustees Jason Arnold, Craig Pauling, Frances Schmechel and Ian Spellerberg, also secretary Tara Schoenwetter, for a wealth of information and for clarifying issues and perspectives for the report. Others who helped immensely were Colin Meurk and Sue Scheele (Landcare Research), Andrew Mactier (Selwyn District Council), Wayne McCallum and Philip Grove (Environment Canterbury), Malcolm Anderson (Waihora Ellesmere Trust), Anita Spencer and Robin Smith (Department of Conservation), Miles Giller (QEII National Trust), Roger May (Tomorrow's Forests Ltd), Stephen Brailsford (Brailsford Forest Management), Marieke Lettink (Fauna Finders Limited) and Rowan Emberson (freelance entomologist, Christchurch).

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**Web sites:**

- NZ Plant Conservation Network: <http://www.nzpcn.org.nz/>
- Nga Tipu Whakaoranga: Maori Plant Use Database (Landcare Research): <http://maoriplantuse.landcareresearch.co.nz/>
- Te Runanga o Ngai Tahu: <http://www.ngaitahu.iwi.nz/>
- Department of Conservation: <http://www.doc.govt.nz/>
- Selwyn District Council: <http://www.selwyn.govt.nz/>
- Christchurch City Council: <http://www.ccc.govt.nz/>
- Environment Canterbury: <http://www.ecan.govt.nz/>
- NZ Ecological Restoration Network: <http://www.bush.org.nz/>
- Waihora Ellesmere Trust: <http://www.wet.org.nz/>
- Te Ara Kakariki: <http://www.kakariki.org.nz/>
- Southern Woods Tree Nursery: <http://www.southernwoods.co.nz/>
- Honda Tree Fund: [http://www.honda.co.nz/site/environ/index\\_environ\\_treefund.html](http://www.honda.co.nz/site/environ/index_environ_treefund.html)
- QEII National Trust: <http://www.openspace.org.nz/>
- NZ Farm Forestry Association: <http://www.nzffa.org.nz/>

## Appendix 1: Photo Selection

*Photos by Geoff Walls*



**Above:** At Yaldhurst Bush, on the outskirts of Christchurch, the restoration plantings feature cabbage trees, harakeke (lowland flax) and manatu (lowland ribbonwood). **Below:** More recently at the same site, shrubs and tussocks have been added. These are all authentic ingredients of the former vegetation of the Canterbury Plains.





**Above and below:** Some of the old water races, created well over a century ago to distribute water in a benign way for farming on the plains, have native vegetation along their banks, almost the only places such vegetation now exists. Those races that are surrogates for the former small streams are also key remaining habitats for the endangered Canterbury mudfish. Sadly, many water races are casualties of conversions to dairy farming. Others are “managed” using herbicides that destroy the flanking vegetation.





**Above and below:** Unimproved pastures like in this paddock retain surprising fragments of native vegetation. The paddock has a few native shrubs of matagouri (*Discaria toumatou*), prostrate kowhai (*Sophora prostrata*), porcupine shrub (*Melicytus alpinus*) and common broom (*Carmichaelia australis*). Another shrub species, *Olearia adenocarpa*, is endemic to the plains and has the highest threat ranking (**Threatened: Nationally Critical**).





Other native plants in the untilled and unfertilised pasture include mosses, lichens and the pygmy heath *Leucopogon fraseri* (in flower, above). Also present is *Raoulia monroi*, a tiny rare mat daisy (in flower, below), ranked as **At Risk: Declining**.





**Above:** Before human arrival, totara would have been dominant in the forests right across the plains. This lone tree, most likely planted about a century ago, is almost the only reminder. Totara is probably the best native tree for commercial timber production in lowland Canterbury. **Below:** Several big old trees of kowhai (*Sophora microphylla*) remain standing on the Templeton Golf Course, reminders of the former abundance of this species on the plains, especially in the flood-prone places (riverbanks, flood plains and some wetland margins) and other disturbed sites. They would have been highly important for tui when flowering, and may be important again in attracting tui across the plains via the Greenway.





**Above:** Flowers of prostrate kowhai (*Sophora prostrata*), one of the native shrubs remaining (only just) on the plains. **Below:** Tumble lichen (*Chondropsis semiviridis*), a free-living native lichen characteristic of dryland biodiversity, seen here in the litter beneath exotic pine trees.



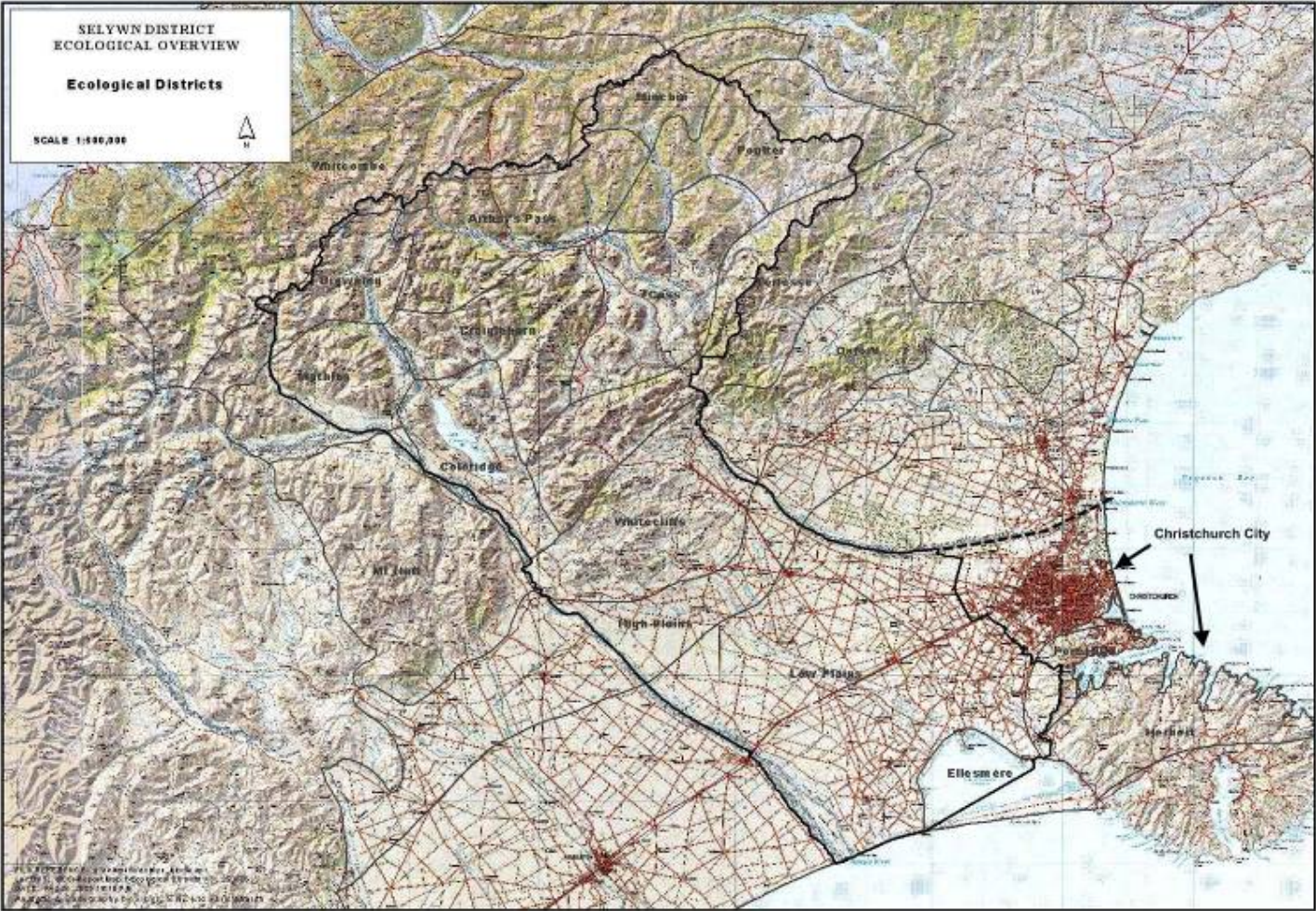


**Above:** Tangled shrubs that produce fruit, such as this *Coprosma propinqua*, are very important to small native birds and lizards, and in turn are dependent on the fauna for seed dispersal. **Below:** A McCann's skink (*Oligosoma maccanni*) sunning itself in a stonefield deliberately created to encourage lizards in Christchurch. This shows that in restoration planting, extra value for native fauna can be added.



**Appendix 2: Map of Selwyn District and Christchurch City, showing Ecological Districts**

Te Ara Kakariki is focussed on the Low Plains and the High Plains ecological districts. From Walls (2005).







## Appendix 5: Map of Canterbury Mudfish Distribution

Canterbury mudfish are endemic to the Canterbury Plains. Their stronghold is between the Waimakariri and Rakaia Rivers. Their rural habitat is under threat from intensifying land use and efforts are being made to nurture the best of what is left. Riparian native planting for this purpose is complementary to TAK's predominantly dryland planting. Map courtesy of DOC.



## Appendix 6: Te Ara Kakariki Application as Submitted to Biodiversity Advice Fund, 2007 (1<sup>st</sup> page, see separate .pdf file)



### Application As Submitted

#### Applicant Details

<b>Name of Organisation/Individual :</b>	Te Ara Kakariki: Greenway Canterbury
<b>Legal Status :</b>	Charitable Trust
<b>Postal Address :</b>	PO Box 39 141, Christchurch, 8545
<b>City/Rural Area :</b>	Christchurch
<b>GST Registered :</b>	Yes
<b>How did you find out about the Fund? :</b>	All of our trustees are well aware of the funds via previous applications by our respective organisations, through press releases, emails, the website and attendance at a number of Biodiversity focused hui/meetings, including the Canterbury Biodiversity forums initially organised by the Landcare Trust, and followed up by Environment Canterbury. As a committee, we have also met with Allan White to discuss our concept and to outline our intentions to apply.

#### Primary Contact Details

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