

Undertaking a riparian restoration project

If you are interested in undertaking a planting project there are some simple steps which will help to ensure success.

Firstly, know what you want to achieve and what resources you have available.

Make sure you are clear about any planning requirements – contact the district and regional councils for advice.

Understand what plants are appropriate for your site and don't forget that these projects require a long term commitment.

Regular maintenance is essential, particularly for the first few years.

SDC and ECan have useful resources on their websites and you can also visit the WET website www.wet.org.nz or email manager@wet.org.nz for more information.



Osterholts Road two years after planting

About WET

WET is a community organisation dedicated to the improvement of the health and biodiversity of Te Waihora/Lake Ellesmere and its catchment. Established in 2003 to help implement a Community Strategy, the trustees represent a wide range of community interests and expertise.



Volunteer planting at Osterholts Road, May 2010

Sustainable drain management in Selwyn-Waihora

– healthy waterways in productive land

Building on what has been learned from the riparian planting programme, WET's current focus is a project which brings together a team from Environment Canterbury, Selwyn District Council, Ngāi Tahu, Lincoln University, and local landowners.

Funding is provided by the partners plus the Community Environment Fund, the Sustainable farming Fund, and Canterbury Community Trust.

We're developing a shared understanding of the drainage network – the current management practices, the scale and nature of issues associated with drains, and potential solutions.

We've identified some outcomes we're hoping to see as a result of working together:

- ✓ Maintaining/enhancing the drainage function
- ✓ Improving water quality
- ✓ Improving in-stream health and biodiversity
- ✓ Creating a vibrant landscape

We can advise on management options plus we may be able to assist with riparian restoration planning and help you to seek financial support for projects.

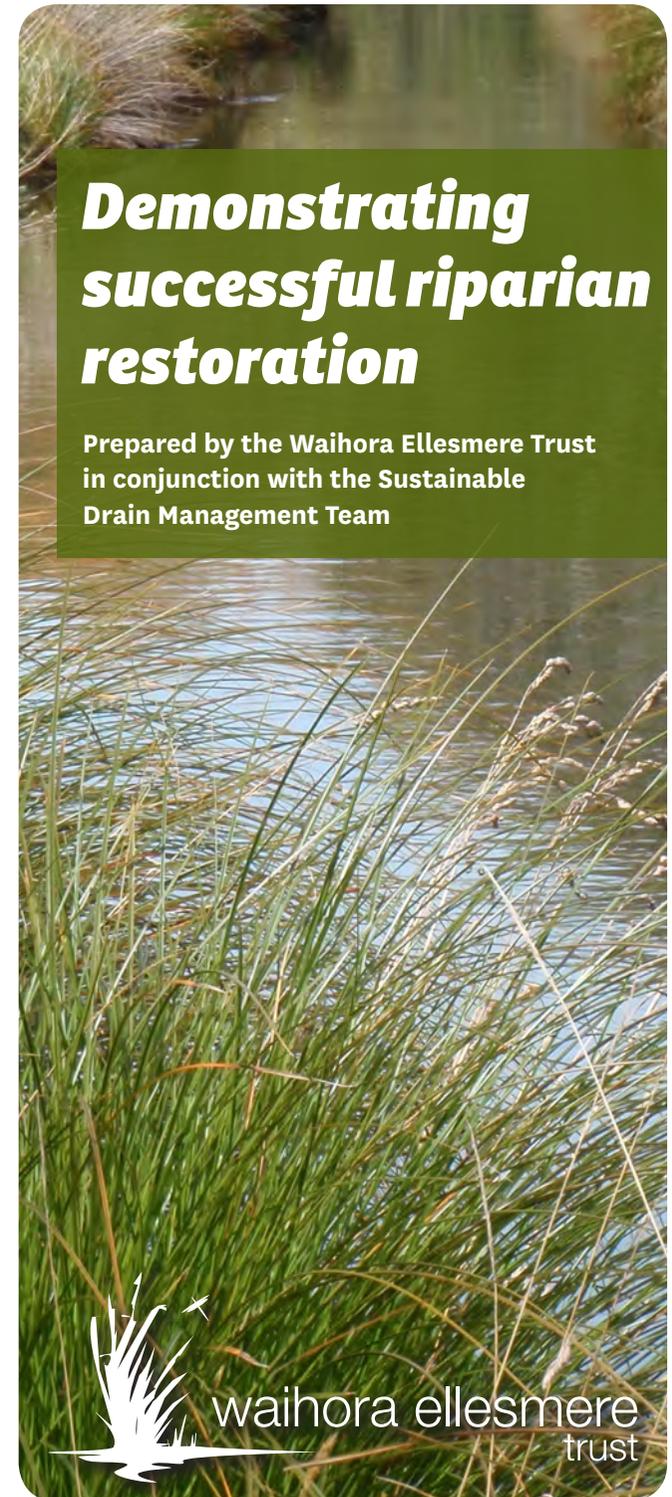
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Osterholts Rd volunteers photo –
ECan, all other photos courtesy of
Stephen Brailsford.



Demonstrating successful riparian restoration

Prepared by the Waihora Ellesmere Trust
in conjunction with the Sustainable
Drain Management Team





There are many examples of riparian restoration in the Te Waihora/Lake Ellesmere catchment, both on public and private land.

Visiting these sites is a great way to see first hand how an area can be transformed in a relatively short time, bringing back biodiversity and helping to protect waterways.

If you are thinking of undertaking a planting project, a visit to a recently established site will be particularly worthwhile.

This guide will introduce you to several sites planted or planned between 2008 and 2011 as part of the Waihora Ellesmere Catchment Riparian Restoration Programme.

Waihora Ellesmere Catchment Riparian Restoration Programme

In 2008 Waihora Ellesmere Trust (WET), working in partnership with landowners and many others, began a riparian restoration programme, establishing native vegetation along the edges of waterways around Te Waihora/Lake Ellesmere.

The aim was to improve water quality and biodiversity, explain the benefits of this type of planting to the local community, and to learn more about what works well in our catchment.

WET had some involvement in the maintenance of the sites for the first two to three seasons, and the landowners are looking after the plantings in the long term.

The main sites selected for this guide feature the use of the “combiguard restoration system”, which we have found works well and is very cost effective and efficient. There are many other examples of restoration in the catchment and other ways to approach riparian planting – let us know if you would like further information about other sites and other approaches.



Example of combiguard including mulch mat



Leeston Stream

Why plant riparian zones?

Most of the sites included in this guide are part of the extensive network of drains that traverse the catchment. Appropriate planting of the riparian zone (the waterway banks) can maintain and enhance the drainage function and can also bring many other benefits.

These benefits include stabilising the banks of the waterways to prevent erosion, creating a buffer of vegetation to help prevent nutrients and sediment from entering the water, and shading of the waterways which reduces temperature – great for fish and invertebrates. Shading also prevents water weed growth, reducing the need for mechanical clearing of drains.

As the plants grow, they will provide habitat and a food source for birds and insects and add to the biodiversity of the plains. With clearer, cleaner water, recreational opportunities are increased and the landscape will take on a new vibrant look.



Volunteers planting at Lakeside Hall March 2010

The plant communities

Canterbury’s riparian landscape has been significantly modified by human activity. The plants for the sites featured here are species suited to the needs of the site, landowner, soils, and the microclimates. As far as possible, all plants have been eco-sourced, that is, grown from locally sourced seed. Three different plant communities form the basis of the Riparian Restoration Programme.

The stream edge - these plants are installed within the flood plain of the waterway and comprise mainly sedges. *Carex secta* (Tussock Sedge) is the predominant species.

Kahikatea - the moist upper flood zones on the heavy soils, and areas that are subject to water logging are where the Kahikatea and Matai forest plant community thrives.

This community features a diverse range of moisture tolerant plants, with Kahikatea and Matai trees making up the forest canopy.

The sub-canopy includes Ti Kouka (Cabbage tree) and larger *Coprosma* species, with an understory of smaller *Coprosma* species, Toe Toe and Harakeke (flax).

Totara/Matai - the more elevated, better drained and summer dry zones are most suited to the Totara and Matai forest plant community.

Totara and Matai are the canopy species, with the sub-canopy species including larger *Coprosma* species, Broadleaf, Ti Kouka (Cabbage tree), *Olearia*, Kanuka, *Pittosporum* species, Kowhai, Ribbonwood and *Hoheria*. The understory of smaller stature plants includes smaller *Coprosma* species, Toe Toe, Hebe and Harakeke (flax).

Each of these plant communities is made up of around 10 – 15% of the canopy trees, 45% of sub-canopy plants (the smaller trees and large shrubs) and 40-45% of understory plants (small shrubs and grasses).



Halswell River at Osterholts Road

The sites

We've included a variety of sites you can visit. Many are on publicly owned land – showing local councils and DOC leading by example. Some sites are partly on private land, or may be leased for grazing. Please keep to the tracks and paths, observe any signs, and ensure gates are left as you find them.

1. Mitchell's Rd

This project is a great example of collaboration between several parties. An opportunity arose in 2008 to restore a Selwyn District Council (SDC) reserve located next to the Hororata River. This has enhanced the area with plantings of native vegetation, while protecting an established mudfish habitat.



Mitchells Road

The restoration project was initiated by SDC as landowner, and WET sourced funding and undertook the planting programme. Many others, including the Department of Conservation (DOC), Te Ara Kāhāriki Greenway Canterbury Trust, industry and volunteers have also been involved.

Beginning in 2009, around 13,000 natives have been planted. The majority were planted in late 2010. This site has examples of the Kahikatea and Totara/Matai forest plant communities.

Getting there

Mitchell's Rd Reserve is just south of the Hororata River (on the true right). Turning west off SH1, take the Hororata Dunsandal Rd. Mitchell's Rd is around 18km NW of Dunsandal. The reserve is 1.5km along an unsealed stretch of Mitchell's Rd.

2. Pakoau Stream/Lakeside Wildlife Management Reserve

Around 4400 natives were planted in stages between 2009 and 2011. This site is Public Conservation Land administered by DOC, and the adjacent land is leased for grazing. The restoration was undertaken as a joint DOC and Ngāi Tahu restoration project, with assistance from WET. Stream edge, Kahikatea, and Totara/Matai forest plant communities are represented here.

Getting there

Access is via Johnstons Rd, Lakeside Wildlife Management Reserve.

3. Lakeside Hall

This small area next to Harts Creek was planted in March 2010 in conjunction with a community meeting hosted by Environment Canterbury. 80 volunteers planted many of the plants and then SDC completed the planting. The plantings are a mixture of the stream edge, Kahikatea, and Totara/Matai forest plant communities.

Getting there

Located just behind Lakeside Hall on Harts Rd, opposite the intersection with Leeston-Taumutu Rd. Please note, the hall is closed due to earthquake damage.

4. Birdlings Brook/Marshall's Corner

This walkway is a real community initiative, with the landowner fencing off enough land for a path and riparian planting. Ellesmere Lions Club and the local community helped prepare the site, and with plans prepared by SDC, around 600 plants were installed in 2010.

Getting there

This walkway is on the corner of Harmans Rd and High St, Leeston, and provides a safe route for pedestrians.

5. Leeston Stream (Township)

Leeston residents, working with WET and SDC have been undertaking improvements on Leeston Stream through the township for many years. 2011 saw considerable reshaping of part of the channel and new planting.

Getting there

Leeston Stream runs along Messines St, by the library, and then northeast along the High St to the edge of town.

6. Leeston Stream (Harts Creek Wildlife Management Reserve)

The lower reaches of Leeston Stream provide a great example of riparian planting. The first section from The Lake Rd towards Te Waihora/Lake Ellesmere was planted with Carex secta along the western bank in 2010, providing shading of the drain but allowing access for drain clearing if required. The next section includes a double row of C. secta plus a strip of mixed natives, planted in 2009/10 on land fenced off by the landowner.

Further down the track will bring you to Harts Creek Wildlife Management Reserve, an example of more established restoration planting. Work has been carried out here by the Tramway Reserve Trust in conjunction with DOC, and some planting was also carried out by WET and International Student Volunteers in 2008. This is a fantastic example of some well established Carex on a stream edge.

Getting there

Turn off The Lake Rd onto the southern most section of Tramway Reserve Rd (unsealed) and head towards the lake.

7. Fish & Game Reserve - Boggy Creek

Boggy Creek enters the Lake adjacent to a Fish & Game Reserve, with SDC Road Reserve running alongside the creek. Working with the neighbouring landowner, this site was planted in July 2010 and is represented by stream edge plants, a small area of the Totara/Matai forest plant community on the raised land and the species of the Kahikatea community that can withstand the salinity of the lake water inundation on the lower lying land.

Getting there

Turn off The Lake Rd onto Colletts Rd and drive through the gate to the Fish and Game reserve.



Boggy Creek newly planted



Boggy Creek 18 months after planting

8. Hanmer Drain

A combination of private land and SDC Road Reserve, and planned as part of the Riparian Restoration Programme, this site was planted with around 2000 plants in September 2011.

Getting there

Turn off The Lake Rd onto Hanmer Rd. The planting is from the Aitkens Rd Bridge to the lake margin

9. Waikirikiri/Selwyn River mouth

Several sites on this extensive area of low lying Ngāi Tahu land on the eastern side of the river mouth have been developed as a joint project with DOC, WET and others, beginning in 2009 when the area, which was a tangle of gorse and other weeds, was cleared. Native plants were then progressively planted out in 2010 and 2011 - around 8000 have been established.

Along the raised sections are the Totara/Matai forest plant community, and in the wetter areas the Kahikatea community. More salt tolerant plants have been used in the lower areas where lake inundation occurs. To the east, areas of willow control and additional planting on Public Conservation Land can be seen.

Getting there

Head down Days Rd, past the upper Selwyn Huts, on the road beside the stop bank to the Lower Selwyn Huts and the end of the road.

10. Silverstream (Coes Ford)

Coes Ford is a popular community (SDC) recreation reserve, managed in conjunction with a reserve committee. Restoration planting has been carried out here since 2005, initially as a Green Footprint project, a collaboration between SDC, WET and YHA.

Silverstream flows into the Waikirikiri/Selwyn River at the top end of the reserve. Around 1500 plants were established alongside Silverstream in September 2010.

There are stream edge and Kahikatea forest plant community species in the lower lying sections, with Totara/Matai community species on the elevated and better drained parts of the site.

Getting there

Coes Ford Reserve is off The Lake Rd as it crosses the Waikirikiri/Selwyn River. The Silverstream site is at the upstream end of the reserve on the eastern (true left) side of the river.



Silverstream during planting



Silver stream 18 months after planting

11. Days Rd Drain

This short section of drain was planted as a demonstration area. The banks have been affected by slumping due to overspraying that removed supporting vegetation cover, followed by earthquake damage. However, as the plants get established they are beginning to carry out their intended function and have provided useful lessons for future projects.

Getting there

The demonstration site is on the east side of Days Rd between Ellesmere Junction Rd and Collins Rd.

12. Osterholts Rd

On the banks of the Huritini/Halswell River around 2400 natives were planted in May 2010 by the OTTR (Old Tai Tapu Road) streamcare group. The plants have successfully survived floods, earthquakes and major snowfall!

Getting there

Turn off SH75 onto Osterholts Rd. The planting, which runs downstream for 600m, is on the true right bank of the river where Osterholts Rd meets Old Tai Tapu Rd.



Other more established plantings well worth a visit:

a. Harts Creek – car parking is available just off Timber Yard Rd near Lower Lake Rd, around 7.5 km southeast of Leeston. This is the access point for Harts Creek Wildlife Management Reserve and bird hide.

b. Birdlings Brook – an area planted up around 8 years ago can be seen from Beethams Rd from a small bridge around 500m from the junction with Leeston and Lake Rd, south of Leeston.

c. Boggy Creek – a stretch which was planted up in the early 2000's. The planting can be viewed from Rushbrooks Rd, between Hanmer Rd and Volckmans Rd around 2.5 km east of Leeston.

d. Chamberlains Ford – planting of various ages can be seen at this SDC recreation reserve. Some areas have been planted as part of the Green Footprint project. The entrance to the reserve is near the junction of Bethels Rd and Leeston Rd, around 7.5 km southwest of Springton.