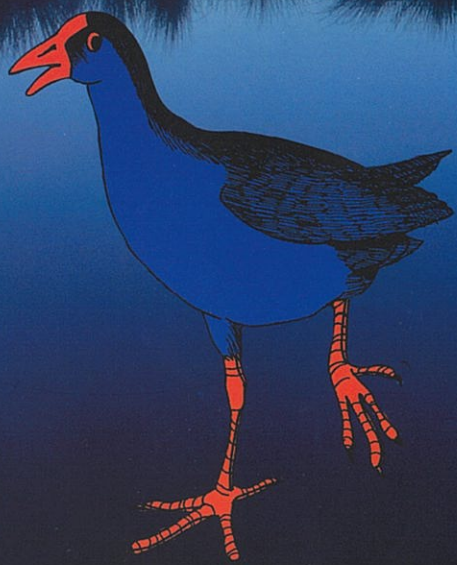


Travis Wetland Walk

— a field guide



TRAVIS WETLAND TRUST

Banrock Station – wetland sponsorship

Sponsorship from Banrock Station, in partnership with Wetland Care New Zealand, has contributed to the production of this field guide.

Banrock Station, a premium vineyard established in 1994 in a fragile wetland environment about 200 kilometres north-east of Adelaide, builds its success around the relationship between good earth and fine wine. As an extension of restoration work on its own wetlands, the Station now donates part of the proceeds from its wine sales to wetland restoration schemes in nine countries. Over the years, Banrock Station has received a number of awards for this work, including the 2002 Ramsar Convention on Wetlands Conservation Award.

Tony Sharley, the Manager of Banrock Station Wine and Wetland Centre, has visited Travis Wetland a number of times. He encouraged the Trust to produce this field guide, considering it would raise visitors' understanding of the value of wetlands and put Travis Wetland into the wider context of wetland protection in New Zealand and worldwide.

Wetland Care New Zealand

Banrock Station wetland sponsorships in New Zealand are in partnership with Wetland Care New Zealand. This voluntary society is dedicated to harnessing community, business, and government resources for restoring and developing lost wetland areas. Funding comes from the Waterfowl and Wetlands Trust (established by Ducks Unlimited New Zealand in 1991), memberships, donations, and corporate sponsorships like that from Banrock Station. The society seeks partnerships with people and organisations with similar aims. For more information e-mail: info@wetlandcare.org.nz

Other Banrock Station sponsored projects in New Zealand

- Karori Sanctuary, Wellington – working to re-introduce the endangered pateke (brown teal) and establishing a fish-ladder for native fish.
- Masterton Intermediate School – returning a natural spring previously drained for irrigation to its original state. This site is a key educational resource.
- Matuku Reserve, Te Henga Wetland, Auckland – supporting Forest and Bird to control pests and construct an educational platform for visitors to showcase the region's original wetlands.

Travis Wetland Walk

– a field guide

Written by Joanna Orwin

Designed by Sandra Parkkali



Cover photo: Kirk Hargreaves

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read more about



restoration



human history



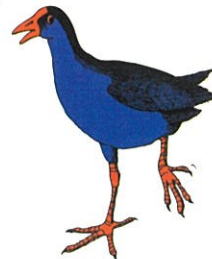
natural history

How to use this booklet

This field guide is designed to add interest and information to your 3.5 km walk around Travis Wetland Nature Heritage Park. It will help answer your questions about what you see and what is happening here during this major conservation project.

Each of 15 numbered stopping sites on this wheelchair-accessible walk is described in the central blue-edged part of the booklet. This explains how each site fits into the restoration effort, alerts you to what to look out for, and includes identification clues for some birds, plants, or insects you might see.

The pukeko graphic at the bottom of these central pages tells you where to find more detailed related information in the guide book for more leisurely reading after – or before – your walk.



Enjoy your walk!

Travis Wetland – a special place



This modified swamp in the middle of a city is the focus of a major conservation project. Over the next 20–30 years, the pre-European landscape that once dominated the eastern Christchurch area will be recreated. Protecting and restoring this wetland will see the return of many birds, fish, reptiles, and insects that once lived here.

Although this swampy landscape looks natural, some of the landforms and waterways have been engineered to provide a framework for restoring the wetland habitats. Much of the native vegetation now growing here has been planted.

Many people are involved in this process. Since 1992, dedicated volunteers have worked under the umbrella of the Travis Wetland Trust to preserve and develop the swamp as a Nature Heritage Park. The Trust has several aims:

- To restore and enhance wetland habitats that were once representative of the Canterbury Plains
- To provide public access while protecting and preserving the native plants and animals
- To develop an educational, scientific, and recreational reserve at Travis Wetland

If you would like to take part in this exciting project, workdays are held on the third Saturday morning of every month, meeting at 9 am in the car park on Beach Road (off Frosts Road). Travis Wetland Supporters receive regular newsletters.

Contact details

The Secretary,
Travis Wetland Trust
PO Box 2750, Christchurch
email: traviswetland@actrix.co.nz

Websites

www.ccc.govt.nz/parks/naturalareas/travis.asp
www.bush.org.nz/organisation//19.html





Saving Travis Wetland

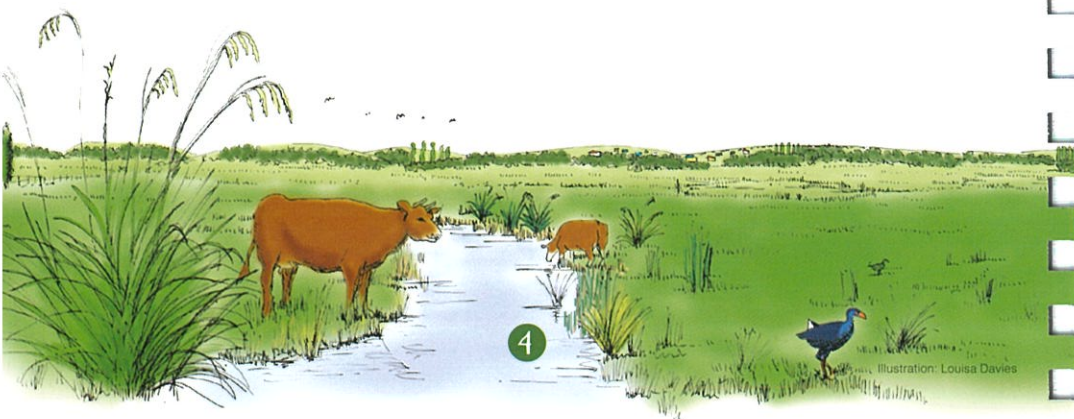
In the 1960s and 70s, developers came up with grand schemes to fill in the Travis swamp for housing, with an excavated lake for recreational boating. Such schemes failed, but the rezoning of the land from rural to residential meant the swamp's future was under threat.

When Travis Country Estates revived housing plans in the early 1980s, some local residents and conservation groups began their battle to save the swamp. For ten years, the arguments continued. Scientists and wetland enthusiasts identified the now rare natural values of the swamp and pleaded the case for its wildlife. Developers and local authorities continued to promote housing as a use for the drier and most degraded part of the swamp. Retention of the wetter north-western part as a wildlife reserve was offered in compensation.

In response, opponents of the development formed the Travis Wetland Trust in 1992. They now argued for the protection of the entire 130 hectares as a viable diverse wetland ecosystem. Restored as a nature heritage park, Travis Wetland would become an integral part of the greenway corridor network proposed for the eastern part of the city.

While the arguments continued, the Trust members got on with the job of containing invasive weeds like willow, blackberry, and gorse. Publicity mounted, and a petition in 1994 to protect the whole swamp was signed by nearly 7000 people.

After buying some of the land in 1994, the City Council then sought reports from experts on all the wetland values of Travis Wetland. The outcome was the purchase of the remainder in 1997, and the gazetting of 119 hectares as a nature heritage park. This park is managed as a partnership between the Travis Wetland Trust and the City Council, which funds maintenance and development and employs a park ranger to coordinate the project.



A reconstructed landscape



At the start of the project, ponds and waterways were excavated to supplement the existing wetland habitats. Angela Stream was constructed in 1998 as a buffer between the wetland, Travis Road and the new Travis Country Estate. Some of the deeper north-south linear drains were altered to form more natural waterways. Others were filled in to become damp depressions or swales.

In June 1999, a 2.5-hectare lake was excavated in the low-lying central area of the swamp. This provided maximum distance from houses and roads, so that nesting birds are not disturbed. Islands and peninsulas planted in raupo, NZ flax, and tussock sedges were constructed to form bird habitat and absorb nutrients. This helps maintain water quality and prevent algal blooms.



Because the swamp lies close to sea level, there is little natural fall to its outlet at the Avon River. As a result, a simple system of weirs can harness pressure from tidal water coming up the river. This pressure is used to hold fresh water in the swamp, enabling manipulation of its water levels. From late August to mid December, the high winter water levels are maintained to protect nesting habitat and provide ephemeral dabbling pools. From mid December, levels are gradually lowered to expose muddy margins. These boost invertebrate populations, providing the protein-rich diet needed for chicks and attracting herons, stilts, and other waders.

Continued experimenting will determine the best way to manipulate water levels. Some of the open waterways may need artificial maintenance such as periodic dredging and hand-weeding.





Values of Travis Wetland

Since the arrival of the Canterbury settlers in the 1850s, close to 98% of Christchurch's fresh-water wetland habitats have been lost.

Although modified, Travis Wetland has huge potential for habitat restoration because of its extensive natural and cultural values and its size.

Maori heritage

As the last major fresh-water mahinga kai (food and fibre resource area) in Christchurch, Travis Wetland has particular significance for local Ngai Tahu people.

Its restoration recognises their status as the former guardians of this habitat and its resources and protects many plant and animal species with traditional and cultural values.

Landforms and landscape

Sand-dune-swampland landform sequences once dominated Christchurch's coast. Travis Wetland is the only example left within the city boundary. Its uncluttered views to the Port Hills and glimpses of the mountains are unsurpassed elsewhere in the city.

Recreation and education

This park, with its high natural and aesthetic values, is ideal for bird watching or other nature study, walking or jogging and photography. Its primary role as habitat for protected wildlife means that walking dogs here – even on a lead – is prohibited. As an ideal place for quietness and reflection, Travis Wetland is not suitable for more active recreation like biking. Bikers and dog-walkers have access to excellent tracks at nearby Bottle Lake Forest Park.

The Education Centre on Beach Road is set up to help teachers develop ecological experiences for their classes. For information about the City Council's Learning Through Action environmental educational packages, check out

www.ccc.govt.nz/learningthroughaction

or phone Greenspace at 03 941 6840



A wetland ecosystem

Travis Wetland's landforms and their associated soils and waterways support 60-70% of Christchurch's former fresh-water wetland biodiversity. Lowland fresh-water wetland ecosystems of this quality are now rare on the Canterbury plains. Travis Wetland is one of the four largest such wetlands left in the eastern South Island. Its quality and size ensure its potential to revert to a natural state (with assistance), providing a viable long-term refuge for wetland plants and wildlife as urban development continues.

Soils

Preserved within the boundaries of this wetland is a regionally significant intact series of lowland soils that grade from permanently saturated organic peats through semi-saturated mineral soils to dry sand-dune soils. This is the only substantial representation of a swamp-dune soil sequence left in Christchurch.

Plants

Despite partial drainage for farming and years of cattle grazing, the swamp has retained remnants of wetland vegetation now uncommon in Christchurch. These

remnants contain more than 60 native wetland plants, almost 80% of what probably once grew here. Several of these native plants are now rare on the Canterbury Plains.

Wildlife

Travis Wetland supports 77% of lowland Canterbury's native fresh-water wetland bird species, and is the most important bird habitat in the city after the Avon-Heathcote Estuary and Brooklands Lagoon. Its protection is particularly vital for the conservation of pukeko in the city environment.

The biodiversity of the invertebrate population of Travis Wetland compares favourably with that of other non-forested communities in lowland New Zealand. Although its fish and reptile populations are poor, restoration will allow re-introductions of some species once common on the Canterbury Plains.

Photo: K. McCombs



Photo: D. Ford



Cradle of history, crucial to the future

From the dawn of history, wetlands have sustained human life throughout the world. But over time and in most places, wetlands have been drained and replaced by farmland or housing. Despite now covering only about 5% of the earth's land surface, wetlands still play a vital role in the hydrological and biological functioning of the planet, something that was not well understood until comparatively recently.

Many wetlands have social and cultural significance. They are often stores of archaeological remains, preserved by peat-rich mud and water. Local traditions and protocols that relate to wetland uses form part of the fabric and history of many societies, Maori amongst them.



Otukaikino Wetland

Photo: DOC

The landscape and scenic values of fresh-water wetlands attract visitors. As well as providing recreational opportunities and quiet respite from city life, wetland areas preserve a large part of a country's natural heritage. Such attributes become valuable sources of tourist income in many parts of the world.

Now, as natural resources diminish and the well-being of the planet is threatened, people everywhere are reaffirming the values of wetlands. The restoration of Travis Wetland is part of that worldwide movement.



Photo: Kirk Hargreaves

Wetland function

Water storage

- Underground aquifers store 97% of the world's unfrozen fresh water
- Groundwater supplies the bulk of the world's drinking water
- Wetlands serve as responsive storage and replenishing agents

Flood control

- Wetlands blot up surface water like giant sponges
- Wetlands slow the flow of storm water into rivers

Sediment and nutrient trapping

- Wetlands trap sediments, protecting downstream farmland
- Many wetland plants can remove toxic substances like heavy metals, grease, and oil
- Filtering sewage through wetlands can avoid the need for expensive engineered disposal systems

Buffering climate change

- Adaptable wetland ecosystems respond rapidly to environmental changes
- Wetlands provide physical buffers against changes in sea level, rainfall, storm frequency, and temperatures
- Wetlands buffer the increase of greenhouse gases by storing about 40% of global terrestrial carbon

Biodiversity reservoirs

- Fresh-water wetlands support more than 40% of the world's species, including 12% of all animal species
- Wetland biodiversity has aesthetic and cultural values
- Wetlands provide an immense number of products – fish and rice are staples for billions of people
- Wetlands are valuable reservoirs of future food crops, medicines, and other products



Maori history at Travis Wetland

When Maori first settled coastal Canterbury about 750 years ago, this swamp and its surrounding taller woody vegetation served as a rich mahinga kai, a source of many foods and fibre plants. Maori knowledge, customs, and stories attached to each wetland resource were passed on from generation to generation as part of the traditions that strengthened local tribal identity.

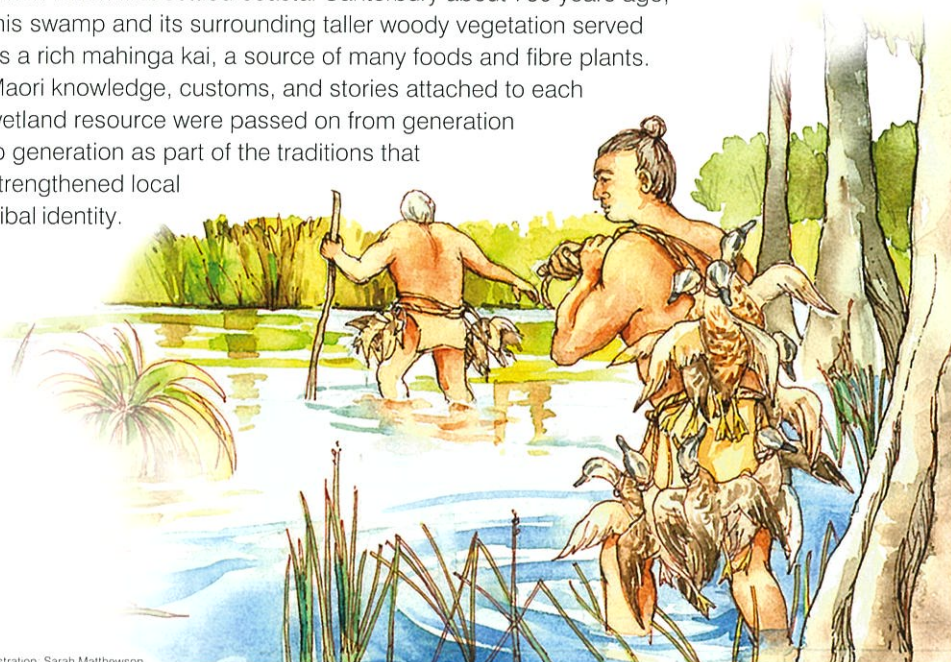
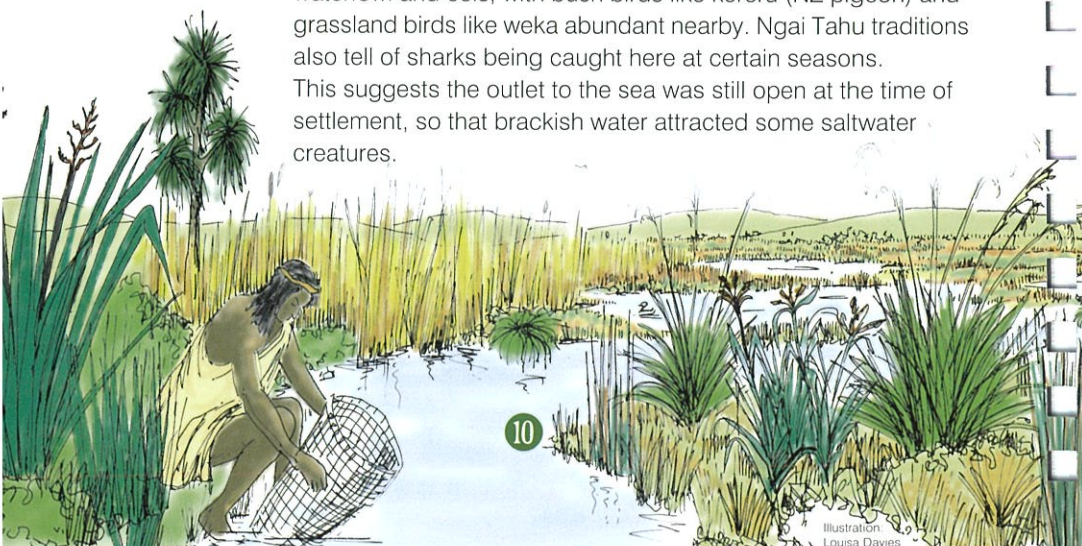


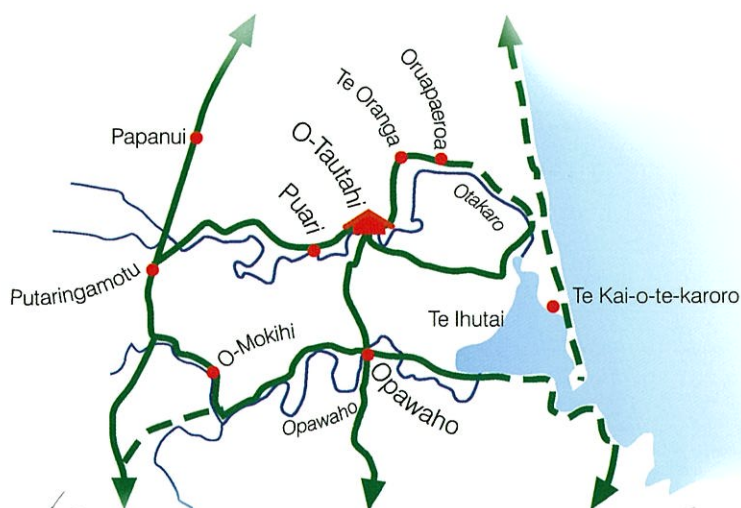
Illustration: Sarah Matthewson

Resources found here included raupo and harakeke (NZ flax), waterfowl and eels, with bush birds like kereru (NZ pigeon) and grassland birds like weka abundant nearby. Ngai Tahu traditions also tell of sharks being caught here at certain seasons. This suggests the outlet to the sea was still open at the time of settlement, so that brackish water attracted some saltwater creatures.



The swamp was one of the wetlands in the area visited seasonally from Oruapaeroa, a settlement built on the higher dry ground now occupied by Queen Elizabeth II Park. The name is sometimes interpreted as 'the place where strong winds blow in from the sea'. Oruapaeroa was also a name attributed to the nearby beach, where flounder and sole were speared and shellfish gathered.

Oruapaeroa was one of several Maori settlements linked by a network of trails and waterways that traversed the wetlands of coastal Canterbury. By Ngai Tahu times, most of these settlements were not lived in throughout the year. People camped at their mahinga kai and designated staging posts during the appropriate seasons or while travelling through the area. Oruapaeroa was still in use when the Canterbury settlers arrived. Raupo-thatched whare were present at Oruapaeroa until 1862, when a settler burned them down after obtaining a Crown grant to the land.





Farming the swamp

The Travis swamp was part of the Sand Hills run first taken up in 1852. This run covered all the coastal land between the Styx River and the Estuary. It was worked as a dairy farm, supplying Christchurch with milk. This run was broken up in the 1860s.

In 1883, William Henry Travis bought the swamp that now has his name from E. W. Corser. He continued to work the swamp as a dairy farm, walking there every day from his home in the vicinity of Carlton Mill Road. When he died in 1910, his two sons each inherited half the land. W. H. Travis junior, the owner of the eastern block, left the residue of his estate as a trust to support scientific investigation in New Zealand.

Later owners of this land at Travis included Augustus Florance, who had already acquired a block on the corner of Mairehau, Frosts, and Beach roads in the late 1870s. Members of the Florance family eventually established dairy farms here. By the mid 1940s, they had bought up all the swampland. They continued to run a town milk supply business until the 1970s, producing about 450,000 litres of milk each year. When they eventually sold the land, Florances had farmed here for over 100 years.

At one stage, there were five small dairy farms on the land at Travis. The last of the Florance houses on Travis Road was demolished by the City Council about 1998. The surviving house on the Beach Road side of the swamp (now the Education Centre) was last owned by the Lees family.

Florance family and helpers

Photo: Florance Family Collection



Beginning with William Henry Travis senior, successive owners attempted to drain the swamp. But the land's location in a depression, active springs, the high water table, and saturated soils all conspired against success. Much of the wettest area in the northern section of the swamp was 'quaking bog', which swallowed up the occasional cow and at one stage a tractor.

Manuka was frequently cut to provide dry footing for cattle on tracks leading into the swamp, contributing to the loss of manuka-shrub peatland. Burning to renew pasture growth continued to the 1950s, when the encroachment of housing on the boundaries of the swamp made this practice unacceptable. The end to burning and reduced grazing accelerated the invasion of weeds like willow, blackberry, and gorse.



Subsequent owners, including Landcorp, leased the land out for seasonal grazing. The presence of cattle at Travis Wetland, so much part of its farming history, will continue on drier areas as a useful way of maintaining the open marshy pastures that form ideal habitat for many grazing birds, including pukeko and shelducks.

When Christchurch Estates bought the Florance property in 1975, the push to develop the land for housing began. When this company collapsed in 1980, the land later sold to March Construction and Merritt Holdings. Their plans for development saw the battle to preserve Travis Wetland as a nature heritage park begin in earnest (see page 4).



site

Your walk through Travis Wetland today will take you back to the past and forward to the future as you find out more about what is happening here.

Photos: D. Dixey

Take a short detour to the Information Kiosk before and after your walk to set the scene and discover more. Displays will tell you what birds you are likely to see and something about the cultural and natural values of the swamp, the battle to save Travis Wetland, and the activities involved in restoring its habitats.



Return to the main path and head clockwise (south) towards Site 2.



From March to September, keep an eye out for glossy ibis and bittern on this section.

2 site

Restoring a wetland involves much more than plantings. This seemingly natural landscape of ponds and streams has been created with the help of machines and man-made structures.

Tucked under the flax clump on the side of the weir is a giant ruler. This is the former Drainage Board datum point for Christchurch. The datum was set up as a point at 9.043m below sea level to measure land and water levels from. The levels you see on the gauge represent 9.7m to 10.3m above that point. Travis water levels are typically between half and one metre above sea level.

This weir controls the flow of water into Travis Stream. It is one of a series of weirs and flap gates on the streams bordering the swamp. These structures artificially maintain water levels in the wetland by slowing down outflows.



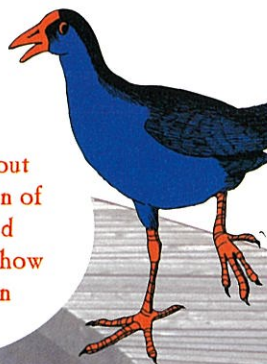
The main pond was excavated on a site where the water table was naturally close to the surface. Low banks were built up to contain the water.



Many of the north-south linear ditches that once drained this end of the swamp have been converted into more natural looking small ponds and damp depressions (known as swales).

Turn off on the short side track to the bird hide and Site 3.

Read more about the construction of the ponds and waterways and how they function on p. 5



site 3

Recreating the original vegetation types is one of the main restoration tasks. Although the area around you appears natural, most of these native trees, shrubs, and tussocks were planted.



Photo: J. Owen

Known as the Millennium Forest, this area was first planted in 2000. Tall tussock sedges and rushes bordering the pond are already starting to seed and spread naturally.

The plantings of young trees and shrubs grade from wet-margin species near the water to species characteristic of drier sites near the main path.

Seedlings of future forest giants are planted here. See if you can spot:

Totara



Kahikatea



Matai



Photos: K. McCormick

Compare the leaves of these native conifers with the softer broader leaves of other native trees growing here.



Nectar-bearing flowers like those of the kowhai (left) and NZ flax or harakeke (right) will attract native bellbirds.



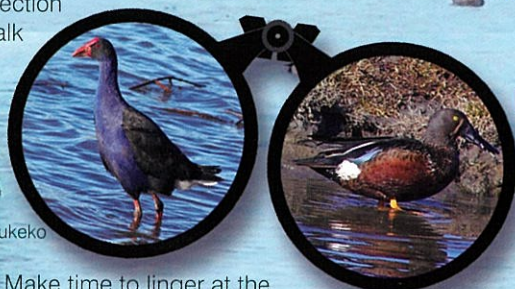
How can you tell a rush from a sedge? Rushes are round and sedges have edges!

Find out how the plantings reflect the underlying soils and landforms of the swamp on pp. 34-35. More detail about the main restoration plantings can be found on pp. 44-46.



As the carefully planned mosaic of plantings and waterways becomes more established, the swamp will provide shelter and food for increasing numbers and types of native bush and wetland birds.

Travis Wetland is the last large area of diverse wetland habitat left in the city suitable for pukeko. About half of Christchurch's pukeko live here in winter – up to 700 birds, one of the largest concentrations in New Zealand. Many of them breed here. In early summer, watch out for pukeko mothers with their chicks on the next section of your walk



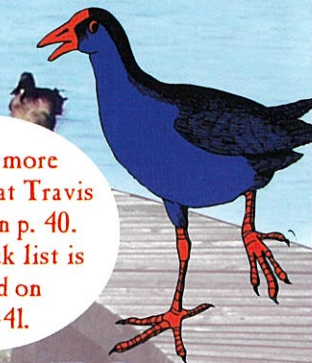
Pukeko

Shoveler

Make time to linger at the bird hide for some great bird spotting. Watch out for interesting bird visitors – Travis Wetland attracts them!

Travis Wetland is a vital link in a network of green spaces and waterways that support bird life in Christchurch. It is the largest freshwater swamp on the flyway used by birds travelling between the Avon-Heathcote Estuary, the Avon River, the Waimakariri River, and the high country beyond. Most of the wetland birds you see here live elsewhere at some stage during their lives. Visiting winter flocks have already increased substantially.

Find out more about birds at Travis Wetland on p. 40. A bird check list is included on pp. 40-41.



site 4

Left to themselves, wetlands gradually change as part of a natural succession towards drier forest vegetation. Grazing cattle help keep out invading woody weeds like willow and blackberry. At the same time, keeping the numbers of cattle low encourages patches of taller protective sedges and rushes. These marshy paddocks and ephemeral shallow dabbling ponds provide ideal feeding and nesting habitats for a wide range of waterfowl.

Artificial management is needed to prolong the life of open wetland habitats. Here at Travis, some marshland habitats favoured by wetland birds can best be preserved by continuing to graze cattle.

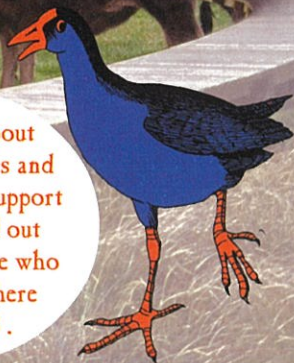


Flocks of Canada geese are common at Travis between February and September. Canada geese often compete with stock for grazing, causing problems for farmers. But here, controlled numbers of geese contribute to maintaining these grazing marshes for other wetland birds.

The cattle yards and loading ramp were used by the Florance family until they sold the land in 1975.



Read more about grazing marshes and the birds they support on p. 36. Find out about the people who once farmed here on pp. 12-13 .



5 site

This natural looking stream was constructed in 1998. Its dark tannin-laden water is typical of the wetland streams that once flowed throughout Christchurch, hidden among dense streamside mixes of sedges, NZ flax, toetoe, mikimiki, koromiko, and cabbage trees. Muddier slow-flowing waters typical of lowland marshy wetlands mingle here with Angela Stream.

These plantings along the edges of Angela Stream are recreating glimpses of what primeval Christchurch would have looked like.

During summer you might spot adult whitebait from the bridge. They migrate downstream in autumn to lay their eggs in bankside vegetation in the tidal reaches of the Avon River. Hatched larval fish are washed out to sea during high tides. They return the following spring to grow into adults in fresh-water streams like this one.



Whitebait

Photo: Stephen Moore

Short-finned eels are plentiful in Travis Wetland, but do not spawn here. At a later stage of the restoration project, fish ladders might be added to some weirs to allow movement of native fish within the swamp. The system of weirs partly prevents pest fish from moving into the wetland.

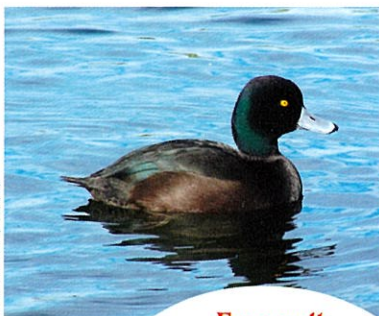
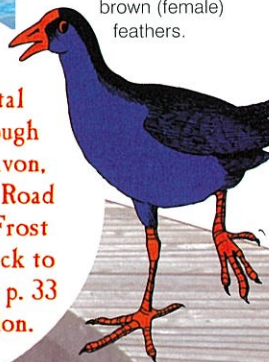


Photo: Andrew Crossland

In late spring and early summer, watch out for NZ scaup (left) and ducklings.

New Zealand's only native diving duck, scaup are making a comeback. Identify these small ducks by their diving habit, white wing patches, and black (male) or dark brown (female) feathers.

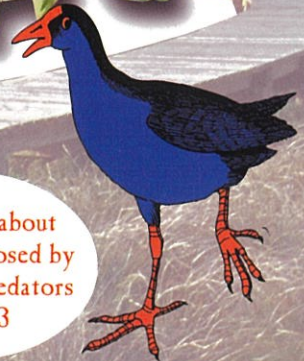
For a walk that connects all the eastern coastal wetland reserves through to the mouth of the Avon, continue out to Travis Road and its junction with Frost Road to pick up the track to Cockayne Reserve. See p. 33 for further information.



6 site

Keeping barriers between people and protected wildlife unobtrusive but effective is an important restoration issue.

These open wetland vistas enhance the lifestyle of the people living here. Native shrubs create a buffer between houses and the streamside plantings. Maintaining both an effective buffer and the vista without conspicuous pruning is an ongoing challenge for the Trust and its neighbours. Housing brings extra problems of roaming family cats and garden plant escapees. Angela Stream acts as a deep moat that helps deter cats from venturing too far into the swamp.



Read more about
the threats posed by
weeds and predators
on p. 43

7 site

Male willow trees are being left to provide shelter and shade for the native plantings. The paint-marked willows are females. They are being killed to prevent further spread of willow from wind-blown seed. The dying trees will continue to provide shelter and suppress other woody weeds like gorse and blackberry. Some self-seeded native plants are already establishing under the protection of the willows.

Restoring native forest is a long-term goal. This willow woodland is being managed to encourage the establishment of plants typical of native swamp forest.



Photo: D. Banks

Kingfishers live and nest in the willows. You might see one today.

Photo: Rod Morris, DOC

Volunteers come every month to tackle weeds and long grass. They replant the cleared patches with suitable native plants. Look out for signs of their work along this section of the walk.

Newly planted areas are mulched with a variety of materials. Newspaper, cut grass, and wood chips all suppress weeds and retain moisture.



Photo: D. Banks

Find out more about the main wetland habitats being restored on pp. 44-46.





8 site

Restoration takes advantage of the habitat layers that already exist in the willow woodland.

From the top of the tower, look towards QE II Park. Maori settled on that higher ground about 750 years ago, calling their village Oruapaeroa. The swamp served them as a mahinga kai, a main food source providing waterfowl and weka that fed the people and could be traded throughout Canterbury.

Climb the tower through the different layers of the willow woodland.

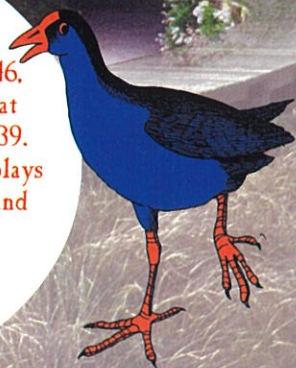
At ground level, the deep, permanently wet peat provides a home for fungi, insects, spiders, worms, and snails. Native ferns, mosses, and clumps of flax-like native lilies form low-growing patches amongst sedges and grasses. In the layer above them, some damp-loving native understorey shrubs and cabbage trees already grow naturally under the sheltering willows. The willow canopy will eventually be superseded by native trees to form broadleaved swamp forest.

Photo: K. McCombs

Watch out for bellbirds, particularly in summer when the flax is flowering. A few visit these willows and the gum trees on Mairehau Road.



More information
on the main restoration
sites can be found on pp. 44-46,
and the eventual native habitat
types are described on pp. 36-39.
Check out the audio-visual displays
on Maori use of Travis Wetland
when you return to the
Information Kiosk, and
read the Maori history
on pp. 10-11.



9 site

Conserving and extending habitats now rare elsewhere in Canterbury is one of the main aims of restoration.

Upright patches of the rare baumea sedge (right) are a remnant vegetation type, now present in coastal Canterbury only in small threatened populations. This sedge stands tall among the flattened areas of introduced carnation sedge and soft rush near the manuka-shrub peatland.



Photos: K. McCombs



Kanuka



Manuka

Distinguish manuka from kanuka by its larger flowers and seed capsules spaced along the flowering twig and its prickly stiffer foliage.

These dark hummocky bushes are among the last natural remnants of manuka on the Canterbury Plains. The younger plants are survivors from earlier restoration work. Many people think manuka is fit only for firewood, but its role as a major pioneer species was once vital. It colonised both wet and dry ground, forming a protective nurse for taller forest species. Manuka-shrub peatland also provides nectar for native butterflies and other insects. Restoring this habitat is made difficult by manuka blight. This self-introduced scale insect and the associated sooty mould often kill manuka in eastern Canterbury.

Did you notice the stacks of cut willow branches? These have been left to provide shelter for the one skink species still found at Travis.

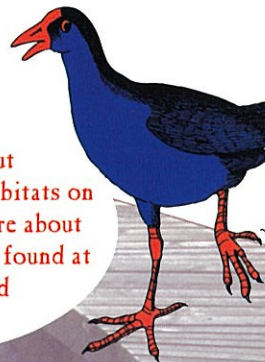


Common skink
Photo: D. Sanderson



Nursery spider webs can often be seen clinging to the shrubs here.

Read more about manuka and baumea habitats on p. 37 and find out more about the different creatures found at Travis Wetland on p. 42.



10 site

Although modified, most of the wetland soils and habitats that once dominated the Christchurch area are still present here. This biodiversity potential rivals that of iconic Riccarton Bush.

Pause here to see how the wetland mosaic relates to the underlying soils and landforms. The high ground beneath your feet is landfill that buried manuka stands and swamp several decades ago. The high ground along Mairehau Road on your left, including Tumara Park and Parklands, is old sand dunes. Within their boundary, draw an imaginary line from the patch of crack willows directly opposite you back towards Clarevale Park, beyond the willow woodland. This is permanently saturated peatland up to 2 metres deep. Beyond this line, the shorter grasses and rushes of the grazing marshes occupy thinner peats and seasonally saturated mineral soils.

Spike sedge



Photo: K. McCombs

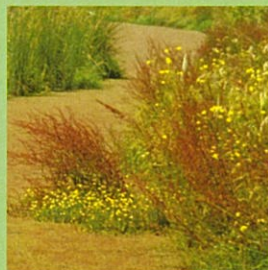
Tussock sedge



Photo: C. Mauck



Raupo



Dock and bachelor's button

From August to September, look out for Australasian harrier hawks here. You might hear them calling or see their aerial courting display. NZ falcons also visit rarely.



Australasian
harrier hawk

sand dunes



What makes up this mosaic?

- 1 Sand dunes
- 2 Patches of native orange-green tussock sedges on deep peatland.
- 3 Short orange spike sedge marking surface water and springs.
- 4 Tall raupo invading open pools and drains.
- 5 Crack willow on mineral soils with under-planted kahikatea
- 6 Grazing marshes on mineral soils
- 7 Grey willow on deep peat



Akeake



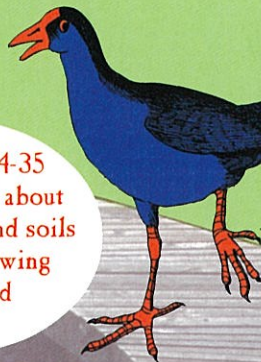
Shrub pohuehue



Silver tussock

As you walk along the high ground of the landfill, you will see plantings characteristic of dry exposed coastal environments that might survive on these poor compacted soils.

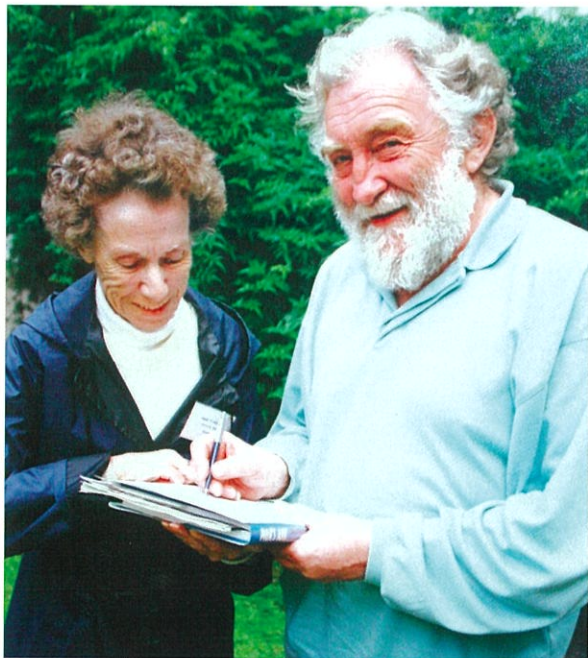
Turn to pp. 34-35
for more detail about
the landforms and soils
and a map showing
the wetland
soils.



11 site

Anne Flanagan Dell is the site of the Trust's first restoration plantings in the early 1990s. It is named after the founder of the original group of dedicated people who began the fight to protect the swamp. Becoming the inaugural chair of the Trust in 1992, Anne Flanagan died in 1994 before the remaining part of the swamp was bought by the City Council and protected as a nature heritage park.

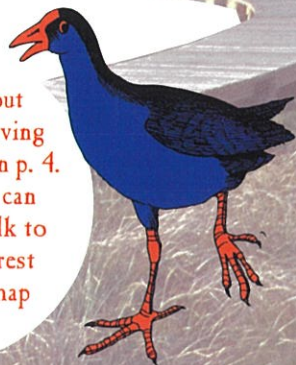
Restoration projects are as much about people as they are about wildlife habitats. The ongoing restoration of Travis Wetland involves the work and support of countless volunteers, citizens, and visitors.



Professor David Bellamy signs the Wetland Trust petition to protect Travis Wetland, witnessed by Anne Flanagan.

Volunteers had already spent more than 400 hours clearing willows, gorse, and blackberry by 1992, halting the invasion of the entire wetland by woody weeds. They then started planting hundreds of manuka seedlings. Unfortunately, the manuka blight has since taken its toll.

Read more about the history of saving Travis Wetland on p. 4. From here, you can connect your walk to Bottle Lake Forest Park. See the map on p. 33.



12 site

You are walking along part of the ancient sand-dune belt that forms the north, west, and east boundaries of Travis Wetland. Once grazed by horses and dominated by lupin, this sand-dune habitat is being restored. Weeds have been removed, and the site is now planted in dry coastal bush, shrubland, and tussock species. Kanuka and akeake are the main small trees here.

This is one of the main restoration sites at Travis Wetland, where coastal bush once typical of stabilised sand dunes is being re-established.



Coprosma propinqua (mikimiki)

Photo: M Lettink

These small leaves and tangled criss-crossed branches are typical of divaricating shrubs, a characteristic growth form in dry eastern parts of New Zealand. Scientists are still arguing whether this is an adaptation against moa browsing or the response of tropical-origin plants to the onset of glacial climates – possibly a combination of both.



Read more
about the main
restoration sites
on p. 44-46.

13 site

Adjacent housing and its associated discharge of storm water can pose challenges for the protection of wetland habitats.

Tumara Park is taking advantage of the ability of wetlands to purify water and retain contaminants. Across the road, a system of swales and ponds collects storm water from the development for removal of up to 90% of likely contaminants and sediment. Most of this treated water is absorbed into the ground. Weirs and sediment traps filter any surplus water before it eventually drains into Travis Wetland via this swale. Some nutrients do leak into the edge of the wetland, as revealed by the bright green of the grass.

Enjoy the vista of the Port Hills. Their volcanic origin is a stark contrast to this low-lying coastal swamp.

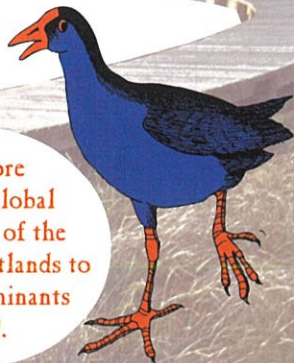


Bracken fern here on the dune replaced coastal bush destroyed by fire. At the time of Maori settlement, susceptible vegetation throughout the eastern South Island succumbed to frequent burning. These fires are known in Maori tradition as the Fires of Tamatea.

Bracken



Read more about the global significance of the capacity of wetlands to filter contaminants on p. 9.



14 site

Restoring this wetland and sharing traditional knowledge about its values reinforces Maori association with this habitat in a modern context.



Mokihi

S. Parkkari

Patches of raupo like this one served multiple purposes in the Maori world. Raupo roots or rhizomes, known as koareare, were pulled up for chewing. In spring, Maori enjoyed the youngest part of the rhizome – the tender fresh shoot. In summer and autumn, they made a paste from raupo pollen and cooked it in an umu (earth oven) for eating as a type of bread.

Raupo leaves were used for thatching houses. Bundles of raupo or flax stalks tied together provided light buoyant reed craft or mokihi for negotiating wetland waterways – a major means of travelling through this area.



Raupo

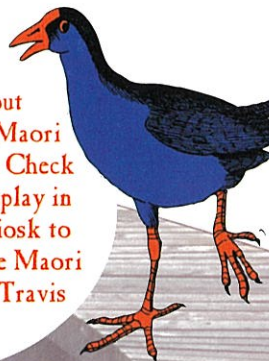


Bittern

Photo: M F Soper DOC

Watch out for the secretive bittern here. At present, bitterns are winter visitors only, but this is the type of habitat they live in. These birds are camouflaged and stand so still that they look like raupo reeds.

You can find out more about local Maori history on pp. 10-11. Check the audio-visual display in the Information Kiosk to learn more about the Maori values attached to Travis Wetland.



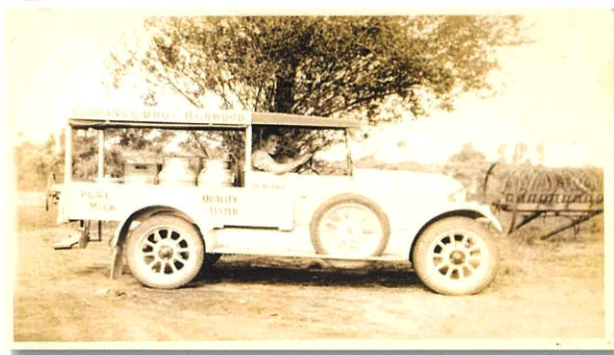
15 site

Preserving historical buildings and structures is an important part of telling the story of how wetlands were used in the past and the associated impacts.

These buildings from the dairy era will be retained as a reminder of the European history of Travis Wetland. This shed was used by the Florance family for milking a town milk supply herd up to the 1970s. The larger building served as a barn. The tall exotic poplars are typical of the trees planted as farm shelter in Canterbury.



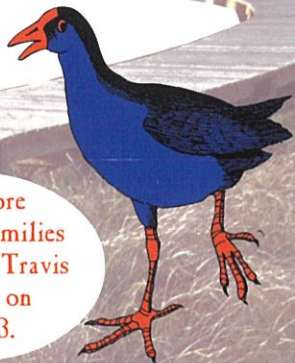
Travis milking shed, 1936



Milk delivery truck, 1936



Read more
about the families
that farmed Travis
Wetland on
pp. 12-13.



Green corridors



The city's eastern green corridor extends from the Avon-Heathcote Estuary (Ihutai) along the Avon River, through Cockayne Reserve and up Anzac Drive to Travis Wetland. Another track links Travis Wetland through Tumara Park to Bottle Lake Forest Park and Brooklands Lagoon. These tracks form the coastal portion of the city's Perimeter Walkway.





Landforms, soils, and vegetation history

About 1000 years ago, a tidal estuary occupied this low-lying area. The estuary was transformed into a lagoon as the Avon River mouth moved further south. Sand dunes developed on the lagoon's eastern and northern sides. Older dunes formed its western boundary. The lagoon and its associated salt marshes were gradually replaced by tall sedge-raupo swampland with spring-fed pools and sluggish streams. By the time Maori settled here about 750 years ago, the transition from estuary to fresh-water swamp was mainly complete.

Soils

Reflecting this history and the environmental gradients, a regionally significant soil sequence is represented at Travis Wetland. Deep Waimairi peats in the north-west sector grade progressively through increasingly shallow peats to poorly drained Taitapu and Kaiapoi mineral soils towards the east. Waikuku sand-dune soils are present along the northern boundary. The inter-dune basin contains one of the largest surviving areas of semi-natural fresh-water wetland soils in Canterbury.

Vegetation history

Maori occupation brought frequent fires that dramatically altered the wetland vegetation. Patches of totara, ribbonwood, manuka shrubland, and coastal bush growing on the swamp margins and stabilised dunes gave way to scrub-fermland and grassland.

The fires continued after the Canterbury settlers arrived in the 1850s. The swamp was routinely burnt to encourage grass growth for cattle grazing. Scrub cutting, pasture improvement, and attempts at drainage all contributed to the decline of native vegetation. By the 1950s, houses were beginning to surround the swamp. Willows and woody weeds spread into the wetland. Although many of the dominant native plants were lost, almost 80% of the original wetland species were still present when the swamp was formally protected in 1997.

Photo: D. Dixey



Soil map



Waimairi soils	P	very deep peat	saturated
	P1	deep peat	
	P2	moderately deep peat	
	P3	shallow peat	
	P4	sandy peat	
Taitapu soils	H	silt loam	wet subsoils
	H1	very poorly drained	
	H2	shallow topsoil	
	H3	peaty topsoil	
	part H4	silt loam	
Kaipoi soils	Part H4	fine sandy loam (summer dry)	
Waikuku soils	S	eroded phase (dry sand dunes)	



Wetland habitats

The mosaic of habitats in Travis Wetland still reflects the underlying gradient of wetland soils, landforms, and water levels, despite being modified by human activities. The restoration project will recreate the main wetland habitats that were present in pre-European times. These habitats will protect and enhance the rich biodiversity of wetland species still found here.

Marshlands

In the north of the wetland, permanently wet peat areas up to 2 metres deep support mixes of sedges, rushes, and grasses. Extensive stands of tall tussock sedge (pukio) survive in the centre. Wet marshes and scattered natural springs are marked by the shorter orange turf of spike sedge. Some springs and drain junctions are being colonised by raupo (looking pale and dead in winter).

Shallower peats were drained for farming, and these areas are now dominated by introduced sedges. In early summer, these marshes are bright with yellow buttercups. In late summer to autumn, they are flushed purple-brown from dying dock stalks. This is ideal habitat for pukeko, waterfowl, waders, harriers, and gulls.

In the south, grazing marsh occupies drier thinner peats and silt loams. These old dairy pastures are being managed to increase feeding and breeding habitat suitable for pukeko and a wide range of wetland birds. Low-growing native plants such as cotula, silver weed, and Maori onion will gradually be re-introduced here amongst the dominant exotic grass and clover that provide food for cattle and wetland birds.



Manuka and tussock-reed swamplands

One of the last remnants of manuka–shrub peatland in lowland Canterbury is found growing on infertile permanently wet peat near the northern edge of the willow woodland. Manuka–shrub peatland was much more extensive at Travis Wetland in the past, but farming, earth-infilling, housing developments, and attacks of manuka blight have reduced it to this small patch. Manuka grows here in association with cabbage trees, and small-leaved coprosmas (mikumiki). The habitat supports a skink species, and a huge variety of invertebrates. Extending it could allow the re-introduction of fernbirds, bitterns, and marsh crakes. It should also become suitable for jewelled geckos and other lizards.



Closely associated with the manuka–shrub peatland are patches of the rare baumea sedge, now present in coastal Canterbury only in small threatened populations. Tucked in amongst these sedges are locally rare spider orchids and insect-eating sundews.



Sundew

Dense patches of tall tussock-reed swampland border streams, ponds, and springs where permanently wet peats are more fertile. Some patches are dominated by raupo, others by rushes, NZ flax, or tussock sedges. Toetoe once featured here. This tall vegetation provides feeding, nesting, and roosting habitat for pukeko and waterfowl. Raupo and tussock sedge are good habitat for invertebrates.

Jewelled gecko

Photo: C Meurk



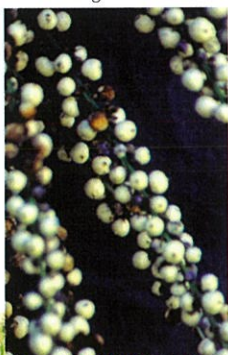


Swamp forests

Native swamp forests no longer exist at Travis Wetland, but two types of such forest formerly present in Christchurch on permanently wet soils will be re-established over the years. The western willow woodland occupying deep peats is already being planted with species that will eventually form broadleaved swamp forest. This dense low forest will be dominated by karamu, kohuhu, and cabbage trees. The plantings will supplement the native species already self-seeding under the willows. This will be ideal habitat for many native and introduced bush birds. The number of species already present will expand both naturally and by re-introductions.

Tall kahikatea swamp forest like that found at Riccarton Bush could grow on all the seasonally wet, fertile mineral soils present at Travis Wetland. Plantings will be limited to several large patches so that most of the current marshy grasslands remain open as habitat for wetland birds. Early efforts will focus on the central crack willow area. This forest will eventually be dominated by pokaka, ribbonwood, and broadleaf, with kahikatea eventually emerging above the canopy. Like broadleaved swamp forest, this habitat will attract many bush birds.

Cabbage tree fruit



Manatu/ribbonwood



Kahikatea fruit



Kapuka/broadleaf



Kahikatea

Karamu



Dry margin forests



On better drained silty or sandy loams at the southern and northern margins of the wetland, patches of totara-matai forest will be established. This will eventually be tall forest containing a mix of fruiting broadleaved species, with taller totara and matai emerging above the canopy.

The low coastal bush that grew on the sand dunes before repeated fires eliminated it is being re-established on the dunes on the eastern and northern boundaries. Cabbage trees, akeake, ngaio, kanuka, and kowhai are among the shrubby trees that will dominate here. Many small-leaved divaricating shrubs and tussocks are being established on the driest and most exposed dunes.

Both these forest types will provide fruit and nectar and varied habitat for bush birds. The coastal bush will also support a wider range of lizards than is now present at Travis Wetland.

Main photo: Early stages of a planted forest

Kanuka



Photo: K McCombs

Kowhai



Photo: K. McMillan

Bellbird



Photo: D Veitch, DOC

Shining cuckoo



Photo: J Karadreck, DOC



Photo: D Dixon



Birds of Travis Wetland

This swamp already attracts 77% of the birds typical of lowland fresh-water wetlands in Canterbury. Once fully restored, Travis Wetland should become the breeding ground of at least 17 native wetland bird species and similar numbers of non-wetland species.

The key to the rich birdlife that can be supported at Travis is the diverse range of wetland habitats found here. At present, significant numbers of at least 10 wetland birds make regular use of the swamp. These include large winter flocks of pukeko, white-faced herons, Canada geese, pied stilts, and spur-winged plovers. Open shallow water with well-vegetated margins attracts cormorants, waterfowl, herons, and waders. Marshy grasslands attract grazing birds like pukeko, glossy ibis, paradise shelducks, and Canada geese. Pukeko, shelducks, pied stilts, NZ shovelers, and NZ scaup all breed here. White herons visit some years, and grey ducks, now rare in Christchurch, can be found here. Bitterns, shy but already regular visitors, may set up permanent homes in the thickets of raupo.

Taller willow woodlands attract many introduced birds like Californian quail, dunnocks, thrushes, blackbirds, and a variety of finches. Birds like little owls, Australasian harriers, NZ falcons (rarely), and kingfishers can sometimes be seen here, as well as some native bush birds like grey warblers, fantails, and silvereyes, which are more common. Bellbirds and NZ pigeons may return to nest once native forests are restored around the edges of the wetland. Bellbirds and shining cuckoo visit occasionally. Birds now rare or no longer seen in the city may eventually be re-introduced.

Travis Wetland bird checklist

Compiled by Andrew Crossland

R = resident
S = seasonal or regular visitor
V = vagrant or irregular visitor

Seabirds and cormorants

Sooty shearwater	V	open ocean, sometimes blown inland
Black cormorant	S	open waterways
Pied cormorant	V	open waterways
Little cormorant	S	open waterways
Little black cormorant	S	open waterways

Herons and allies

White-faced heron	S	open waterway edges, wet grassland
White heron	V	open waterway edges, wet grassland
Cattle egret	V	wet grassland with livestock herds
Australasian bittern	S	waterways with vegetated margins, swamps
Royal spoonbill	V	open waterways
Glossy ibis	S	open waterway edges, wet grassland

Waterfowl

Mute swan	V	open waterways
Black swan	R	open waterways, wet grassland
Canada goose	R	open waterways, wet grassland



Black cormorant



Grey teal



Pied stilt



Spur-winged plover



Banded dotterel



Fantail



Australasian coot

Greylag (feral) goose
Paradise shelduck
Mallard
Grey duck
Grey teal
New Zealand shoveler
New Zealand scaup

Birds of prey

Australasian harrier
New Zealand falcon
Australasian hobby
Little owl
Barn owl

Gamebirds

California quail
Pheasant

Rails and gallinules

Marsh crake
Pukeko
Australasian coot

Waders

Stk Is pied oystercatcher
Pied stilt
Black stilt
Spur-winged plover
Banded dotterel

Gulls and terns

Black-backed gull
Red-billed gull
Black-billed gull
Black-fronted tern
Caspian tern

Pigeons

Rock pigeon

Cuckoos

Shining cuckoo

Kingfishers

New Zealand kingfisher

Swallows

Welcome swallow

Native songbirds

New Zealand pipit
Grey warbler
South Island fantail
Silvereye
Bellbird

Exotic songbirds

Skylark
Dunnock
Blackbird
Song thrush
Yellowhammer
Chaffinch
Greenfinch
Goldfinch
Redpoll
House sparrow
Starling
White-backed magpie

V open waterways, grassland
R open waterways, grassland
R open and vegetated waterways, wet grassland
R open and vegetated waterways
R open and vegetated waterways, wet grassland
R open and vegetated waterways
R open waterways

R open country and wetlands
V open country and woodland edge
V open country and woodland edge
R open country and woodland edge
V woodland

S scrub and woodland edge
S scrub and woodland edge

V waterways with vegetated margins, swamps
R wet grassland, swamp
V open waterways

S wet grassland
R open waterway edges, wet grassland
V open waterways edges
R open waterways edges, grassland
S open waterway edges, grassland

S open waterway edges, wet grassland
S open waterway edges, grassland
S open waterway edges, grassland
V open waterways
V open waterways, usually coastal

S grassland

S woodland

S waterway edges, woodland, wet grassland

R waterways, grassland, woodland edge

S short grassland
R woodland, hedges and scrub
R woodland, hedges and scrub
R woodland, hedges and scrub
S woodland

R short grassland
R woodland, hedges, scrub and grassland
R woodland, hedges, scrub and grassland
R woodland, hedges, scrub and grassland
R woodland edge, scrub and grassland
R woodland, hedges, scrub and grassland
R woodland, hedges, scrub and grassland
R woodland, hedges, scrub and grassland
R woodland, hedges, scrub and grassland
R urban habitats and grassland
R woodland edge and grassland
R woodland edge and grassland



Other wildlife

The diverse habitats of Travis Wetland are an ideal place to study New Zealand's wetland invertebrate biodiversity. These habitats support an estimated 600–900 insect species and 50–100 larger invertebrates like spiders, snails, and worms. Between 40 and 70% of the insects found here are typical of wetlands, and over 80% of those identified so far are found only in New Zealand. Some of the larger showier insects include damsel and dragonflies, crane flies, and nursery web spiders. Cave weta live in the willow woodland. Many species are restricted to particular plants or habitats. Restoration and expansion of these habitats will help prevent further local extinctions of specialist native invertebrates.

Mostly common pond invertebrates live in Travis Wetland, but these represent a native community now poorly represented in Canterbury because of the widespread loss of wetland habitat. At present, the only fish found at Travis Wetland are whitebait and short-finned eels. Once ponds are fully restored, the restricted endemic Canterbury mudfish could possibly be introduced.

Of the four species of lizard once found in the Christchurch area, only one skink is still present at Travis Wetland, living mostly in the western marshlands and sand dunes. Once the manuka–shrub peatland and sand-dune habitats are restored, it may be possible to re-introduce common and jewelled geckos and spotted skinks to these sites. Australian whistling tree frogs live on the pond margins.



Red damselfly Photo: Sonke Hardeson

Shortfinned eel Photo: Stephen Moore

Invertebrate study at Travis Wetland Photo: C. Williams



Weeds and predators



Monitoring and controlling the spread of woody weeds like willow, blackberry, and gorse and soft weeds like purple loosestrife and beggars' tick are ongoing tasks for park ranger staff. Much of the work is done by volunteers during the regular monthly work days. The Travis Wetland ranger employs the specialist Manuka Group for a half day per week to remove gorse, blackberry, Yorkshire fog, and lotus from the sensitive manuka-shrub and baumea peatland areas. Contractors are being employed for some of the major preliminary weed clearance, including grey willow along the Travis Stream-Frost Road boundary.

Grazing helps control the spread of weeds in the marshlands, including any willow and blackberry seedlings. Fencing restricts the cattle to appropriate areas away from plantings and prevents their access to waterways and the central pond. At the same time, retaining a willow canopy in the woodland areas in the meantime helps inhibit the spread of other weeds.

Predators such as cats, rats, stoats, hedgehogs, possums, and ferrets have negative effects on wildlife. Park rangers run trapping and monitoring programmes to control animal pests. The peripheral waterways are designed to discourage pests from penetrating into the centre of the swamp.

Studies indicate that domestic cats may not be a major threat to populations of the larger waterfowl, and they may serve a useful role in reducing rat and stoat numbers. Cats do pose a threat to small populations of lizards. At present, educating neighbours about cat activity is thought the best method of control. It is possible that domestic dogs are a threat to individual waterbirds, including pukeko. Further study is needed to assess the real risk from domestic pets.

Purple loosestrife

Cat

Stoat





Restoration targets and tactics

Restoration of the wetland habitats will continue over the next 20 to 30 years. The plantings are designed to test what grows best, where, and under what conditions. Once seeding populations of most plants are established, natural regeneration will take over.

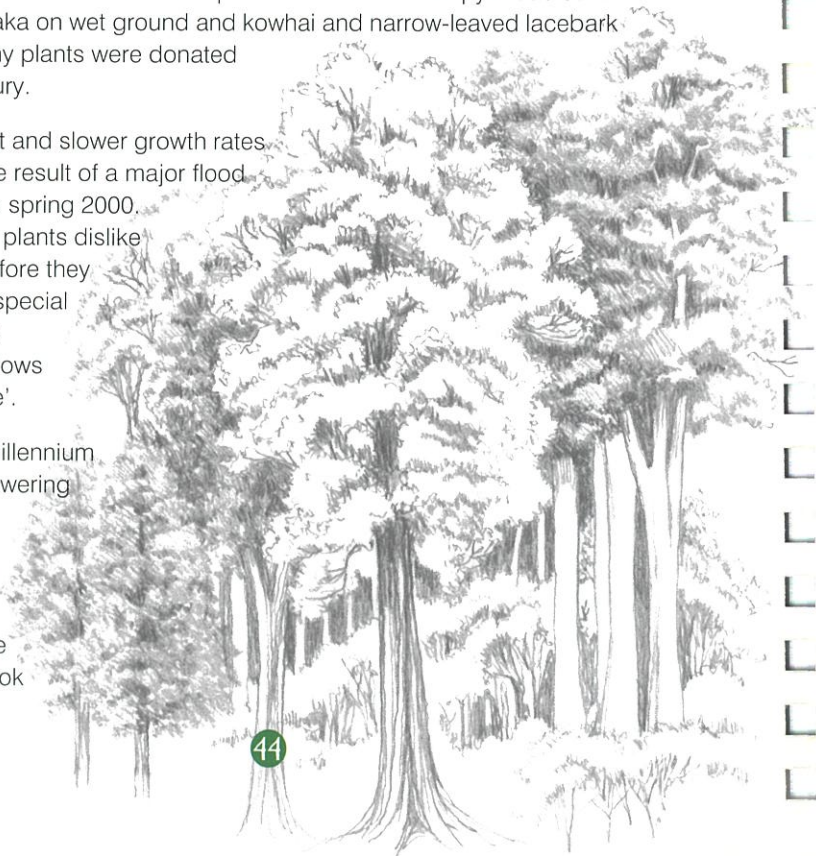
Much of the wetland will be left to its own devices, apart from the removal of woody weeds and pest control. The main areas where restoration plantings have been concentrated include the Millennium Forest near the bird hide, the streamside (riparian) plantings along Angela Stream, the western and central willow woodlands, and the sand dunes along Mairehau Road.

Millennium Forest

Local primary school children helped plant this dense and now natural-looking young forest in spring 2000. Now up to four metres high, native conifers will eventually emerge above the broadleaf forest canopy. They grade from kahikatea and matai on permanently wet ground near the pond to matai and totara on the higher drier ground created by the soil excavated to form the pond. Associated canopy broadleaved species include pokaka on wet ground and kowhai and narrow-leaved lacebark on drier ground. Many plants were donated by Trees for Canterbury.

Patchy establishment and slower growth rates near the pond are the result of a major flood soon after planting in spring 2000. Even wetland woody plants dislike waterlogged soils before they have developed the special air-conducting tissue (aerenchyma) that allows their roots to 'breathe'.

Some plants in the Millennium Forest are already flowering and seeding. Self-established seedlings of karamu and poroporo are beginning to enhance the forest's natural look only four years after planting.



Riparian plantings along Angela Stream

One of the first areas to be restored, the banks of artificially created Angela Stream, bordering Travis Country Estate, were planted in 1999 by City Council contractors, one of which was the Wai Ora Trust. They created a dense border of overhanging sedge-tussocks (pukio) along the water's edge, backed by taller shrubs, NZ flax, and toetoe. Already, the views from the bridge on Angela Stream resemble the mid-nineteenth century river scenes familiar to the Deans brothers, first successful farmers in the Christchurch area.



These dense riparian plantings are now self-maintaining. The Trust is trying to establish the uncommon native swamp nettle amongst the new shelter.

Western willow woodland

Christchurch Native Habitats have been running experiments on kahikatea establishment in the Clarevale corner of the western willow woodland since 1999. With the help of community volunteers, kahikatea seedlings donated by Trees for Canterbury are being grown in plots with different treatments. Kahikatea performance and growth rates are being monitored in peat or mineral soils, with different levels of weed clearance, at different spacings, and with or without native companion species like karamu.

Between the kahikatea plots and along the pathway leading to the tower, mixed plantings are contributing to the restoration of broadleaved swamp forest in the western willow woodland. Under the supervision of the Manuka Group, who propagate many of the plants, community groups of all sorts participate in weed clearing, planting, and maintenance work. Experiments with mulching materials to keep weeds down include using newspaper wads and shredded introduced sedge. These plantings are being managed to facilitate natural regeneration. Many native shrubs and ferns are now establishing on the drier habitat provided by the decaying root plates of felled willow trees.





Central willow woodland

Kahikatea seedlings have already been planted under the shelter of crack willow on the central 'island', north of the central pond. Female grey willow and other woody weeds have been removed. This area will eventually be restored to kahikatea swamp forest, with a border of raupo to help reduce the amount of nutrients filtering into the surrounding waterways. The results of the trials in the Clarevale corner will contribute knowhow to this habitat restoration.

Mairehau sand dunes

After the newly formed Travis Wetland Trust finished their first plantings in the Anne Flanagan Dell in the mid 1990s, they gradually extended their efforts onto the sand dunes forming the northern border of the swamp. Once the lupin, gorse, and blackberry had been cleared, carefully avoiding the natural patches of bracken fern, Trust volunteers began planting. Conspicuous from the Mairehau car park, the row of tall ribbonwoods, lacebarks, and tussocks that mark the transition from swamp to sand dune were the first of these plantings, in 1998–1999.

More recent work has expanded the plantings onto the sand dunes around the car park and along the ridge. Because establishing plants in this dry exposed habitat needs expertise, these plantings are being done by the more experienced Trust members. They are planting typical pioneer species that include native nitrogen-fixing plants like matagouri and the legumes kowhai and NZ broom.

Recent droughty summers have slowed progress. Recreating this habitat will eventually allow the establishment of the low-growing dry coastal bush and shrubland that once grew on the system of sand ridges that extends as far inland as Linwood.

Photos: B. O'Connor



Ecology in a city landscape

Travis Wetland Trust is just one of many community groups in Christchurch working with the support of the City Council to restore and enhance the green spaces of the city.



Restoration of open waterways and wetlands is proving a more sustainable and cost-effective way of managing the city's storm water. At the same time, the city gains a network of more natural environments in which some of the ecosystems that once thrived here can be restored.

As you walk about Christchurch, you might have noticed tussock sedges and cabbage trees establishing along some of the stream banks, giving them a more natural look. Many such plants are now self-establishing, but elsewhere nature is being given a helping hand. People are working to restore their local reserves, drainage channels, and river banks to habitats that will support wildlife and create more attractive places for people to linger. These green spaces will gradually be linked as wildlife habitats throughout the city.

If you would like to know more about who is doing what in your own local area, check out the New Zealand Ecological Restoration Network (NZERN) site for Canterbury at www.bush.org.nz/region/canterbury.html





A vision for the future

A dragonfly darts across the path.

Insects hum among the reeds.

Small birds flit from branch to branch.

A kereru feasts high up in a kahikatea.

Skinks and geckos bask in the sun.

Flocks of water birds swim slowly as they feed.

A pukeko family struts across the open marshy ground.

Beyond a screen of tall trees, the brown slopes of the Port Hills beckon.

In the far distance, the peaks of the Canterbury mountains loom.

The bustle of the city fades, absorbed by surrounding forest and shrublands.

Here in the middle of a city, the plants and wildlife that once dominated the wetland environments of the Canterbury Plains now flourish once more. Here in the quiet spaces of Travis Wetland Nature Heritage Park, a rich wetland biodiversity creates a healthy environment for wildlife and people alike.

This is a vision that is already becoming reality. Preserved by the foresight of a few dedicated people and restored to life by the efforts of many, Travis Wetland is becoming a core area in a network of green corridors that will transform Christchurch.

Buses to Travis Wetland

Beach Road entrance:

No. 60, Parklands, goes from the City Bus Exchange to New Brighton and returns every 15 minutes. It travels along Mairehau Rd and Beach Road.

- Get off near the intersection of Beach Road and Mairehau Rd for the main entrance to Travis Wetland
- Get off in Mairehau Road to join the Wetland Walk at Site 12

Travis Country Estate access:

The Metro Star travels from New Brighton to Hornby via The Palms, Edgeware, Merivale, Riccarton, and the University of Canterbury. It travels along Travis Road and Bassett St.

- Get off in Travis Road to join the Wetland Walk at Site 5



Travis Wetland Walk



Access to Wetland Walk



Wheelchair-accessible
Wetland Walk 3.5 km



Field guide sites



Parking



Toilets