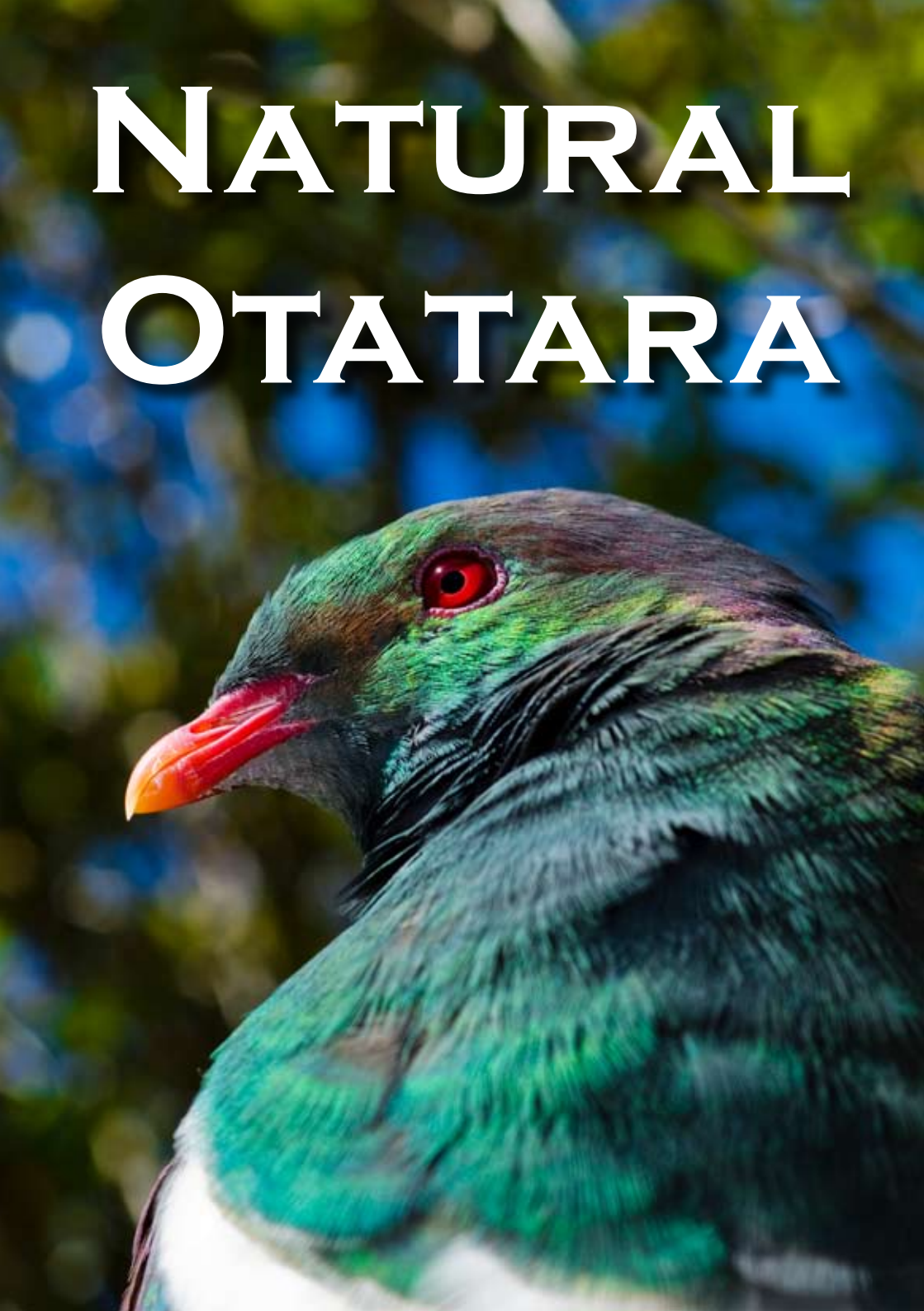
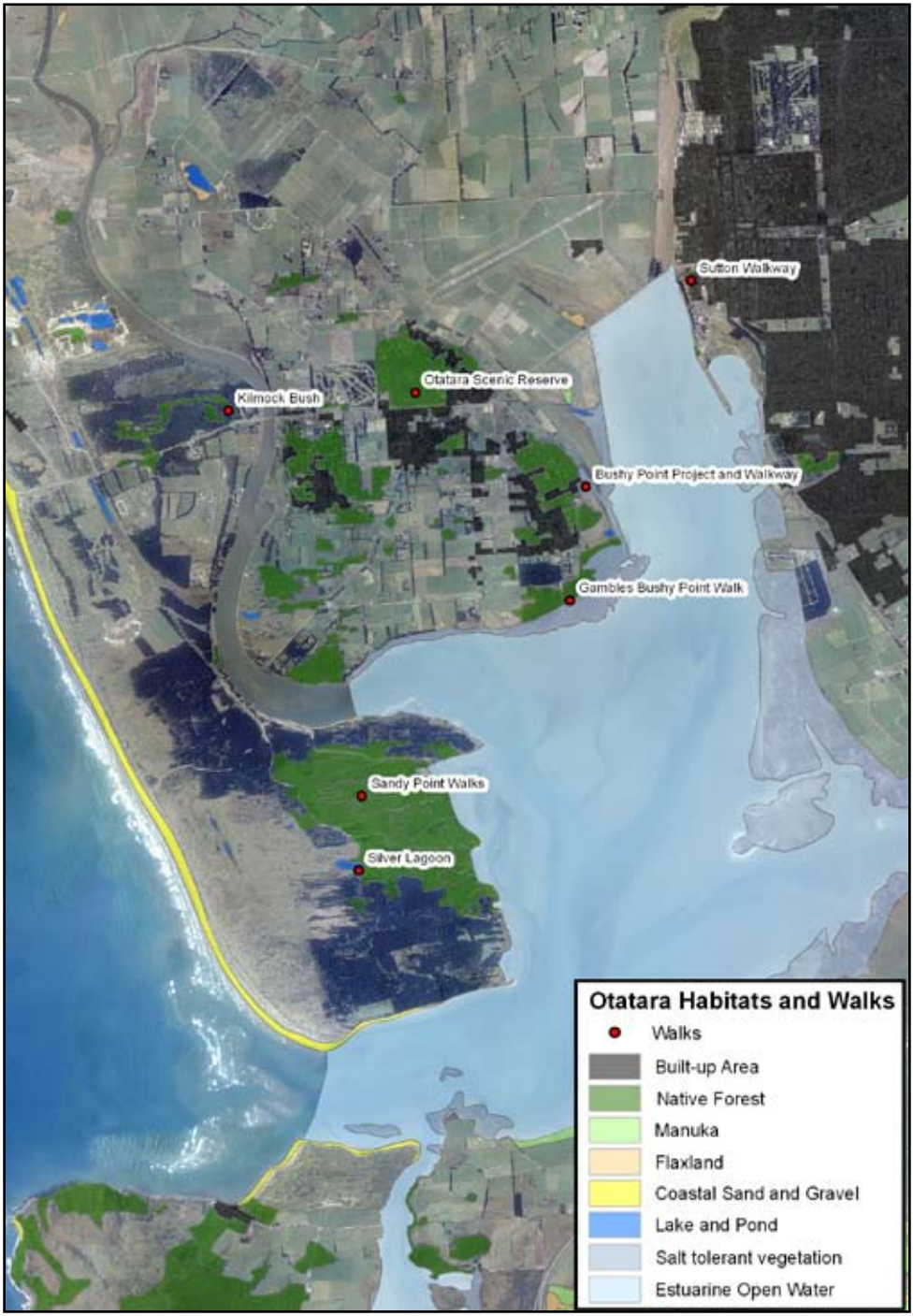
Natural Otatara




Sutton Walkway
Otatara Scenic Reserve
Kilmock Bush
Bushy Point Project and Walkway
Gambles Bushy Point Walk
Sandy Point Walks
Silver Lagoon
Otatara Habitats and Walks
Walks
Built-up Area
Native Forest
Manuka
Flaxland
Coastal Sand and Gravel
Lake and Pond
Salt tolerant vegetation
Estuarine Open Water

Natural Otatara

Welcome to Otatara and Sandy Point. This area is a natural playground with a rich variety of plants and birds. It has native forest, bush walks, sand dunes and a sandy beach, a river, estuary shoreline, pine forests, a totara dune forest and several restoration projects – all this in an area shared with a thousand households. This booklet gives you an idea of some of the plants and birds you can see when you are exploring or looking around your property.

Contents

Cover – Native wood pigeon (kereru).
Back cover – Adult tui and chicks. *Photos – Jason Hosking www.jasonhosking.com*

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Text and illustrations by Lloyd Esler (illustrations not to scale). Map courtesy Department of Conservation.

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Origins and Settlement

Origins

Sandy Point/Otatara is geologically quite new. It was built up from gravel washed down rivers and from sand blown inland from the shore. It is low-lying with a high point of only 35m above sea level. You can see what underlies Otatara at the cliff beside the Dunns Road bridge. There is no bedrock here - the closest solid rock to Otatara is on the side of the estuary opposite Sandy Point at the mouth of the Mokomoko Inlet.

Shells in the riverbank near the Waterski Club are several thousand years old. They date from a time when the sea was two kilometres further inland than it is now, and when the sea level was several metres higher.

As the wind-blown sand which once covered Otatara and Sandy Point stabilised, it was colonised by lichens, mosses and seedlings. As soil accumulated, the dunes became forested and low-lying areas filled with swamp plants.

In the Ice Age Bluff Hill (left) and Stewart Island (right) were separated by a flat plain which is now Foveaux Strait. Moas browsed on the cold plateau of present-day Invercargill as the Oreti River flowed past on its way to the distant sea, 100m lower than its present level.

Sand flats close to the sea stayed bare with low dunes held together by the golden sedge, pingao. Small herbs grew on the wet patches between the dunes.

The plant life of Otatara/Sandy Point is influenced by climate and soil. The area is near sea level and subjected to strong, cold winds, salt spray and occasional snow. In many places the soil is a thin layer on sand; elsewhere it has accumulated to a good depth. In some places it is saturated for much of the year, low in fertility and a challenge for the gardener.

The best place to see how the wind shapes the vegetation is from the lookout at Daffodil Bay. The ancient dunes are aligned to the prevailing westerly wind and you can see how the vegetation in the low-lying areas – former dune swales – contrasts with the totara forest on the drier dunes.

Maori Occupation

A small Maori population lived on Sandy Point for several hundred years before the first Europeans reached New Zealand. Although their impact on the landscape was slight in comparison with later changes, they certainly made use of the natural resources of the area. Fish and shellfish from the estuary and Oreti Beach were used in large quantities and the forest provided an abundance of birds. Totara trees were felled for firewood and straight trunks shaped into canoes. Bark was stripped from living trees to make baskets. Cabbage trees were felled for the edible heart of the leaves and the root was dug up and baked for food. Bracken rhizomes were dug and roasted and manuka was cut for poles and firewood. Flax was used for rope, garments, mats and sandals.

Oue Village

The main village was Oue, probably situated where the Coopers Creek settlement is today. Nothing remains of the Maori village apart from middens, heaps of discarded shells and bones and flakes of stone.

Cabbage tree

European Arrival

The first contact between Maori and Pakeha was in the 1790s when sealers explored the coast. They brought potatoes, guns and iron tools which were readily adopted by the Maori. The first crops in Southland - potatoes - were grown at this time adding a new food item to the diet and an important article of trade. Cabbages, turnips, parsnips and corn were grown as well.

The first non-Maori to settle on Sandy Point were whalers who established a short-lived whaling station in 1836 in the vicinity of Oue – probably at Coopers Creek. With the end of whaling, several of the whalers turned to farming and local names of Printz, McShane and McCoy date from this time. Cattle, sheep, chickens, pigs and horses were imported and vegetables and meat supplied to visiting ships, local Maori and new settlers. Owen McShane made rum from cabbage tree roots, the first spirits to be produced in Southland.

Later Arrivals

The first known European settler in Otatara was Lewis Acker, an American, who built a house in Ackers Road about 1856. At around the same time George Printz, who farmed on Sandy Point, established his second farm on the west side of the Oreti River, opposite the terrace on which Acker's house stood.

Otatara was almost totally forested at that time and the large timber resource was rapidly exploited with several sawmills operating. The sought-after trees were matai for flooring and sleepers, kahikatea for kitchenware and timber, and rimu and totara for weatherboards. Mills were established in Huruhuru Road and Vyner Road. Bullocks and horses pulled logs along tramways through the bush to the mill, and from a wharf at the end of Bryson Road the sawn timber was transported by lighter to Invercargill. The last mill was operated by the Borstal at the end of Grant Road in 1935. The milling of the forest opened land for grazing, and cattle roamed the cut-over forest which was gradually cleared for pasture.

The first Otatara school was built near Lake Murihiku in 1879 and the school site was moved several times as the centre of population shifted from one milling site to another.

A large part of Otatara was bought by the Otatara Land Proprietary Ltd for re-sale and in 1907 it was subdivided and 223 sections offered at auction. A tramway linking Otatara to Invercargill was built in 1908, replaced by a road, Stead Street, in 1924 following reclamation of the airport area. Extensive mining of sand dunes in Otatara provided fill for the various reclamations. Dunes formerly covered the flat land south of the Marama Ave/Dunns Road intersection and the Bushy Point Reserve.

Otatara became part of Invercargill City in 1989. Before then it was part of Southland County.

Early whailng station

Sandy Point

Sandy Point has been a domain since 1889, preserved for the enjoyment of all. It covers 2,000 hectares or 20 square kilometres.

Flax mills were established along the banks of the Oreti River where flax grew in abundance and from where it could easily be shipped out, either to local processors or further north where it was used for rope, matting and woolpacks. Large areas of Sandy Point were dedicated to the fences needed for drying flax fibre. The last of the local flax mills closed in 1970.

The other major natural resource of the area was gravel. Various pits operated with most of the gravel being used on Invercargill roads. The Oreti Ponds are flooded gravel pits and in several places along the western side of the Oreti River other pits are still visible.

Flax

Habitats

The Estuary

Otatara and Sandy Point have about 15 kilometres of estuary shoreline. The New River Estuary, also called the Oreti Estuary and Invercargill Estuary, is accessible in several places such as Daffodil Bay, Whalers Bay, Noki Kaik and the boardwalk at the end of Grant Road. The Bushy Point walkway (access from Bryson Road) gives good views across the estuary and the Invercargill City Council walkway/bike track from Stead Street to Sutton Lagoon is a good place to watch wading birds.

A range of plants are found within the influence of salt water. Jointed rush or oioi is the most familiar estuary plant, covering many hectares. Spartina or cord grass was planted in the estuary in the 1930s to help convert bare mudflat to pasture. The grass grows vigorously, propagating itself from detached shoots. It traps sediment and seaweed, rapidly forming raised clumps which are eventually colonised by pasture grasses. We now understand the value of open mudflats for shorebirds to feed on, for biodiversity and for floodwaters to spread across and cord grass is regarded as a pest plant. It succumbs to repeated sprayings of herbicide and it has been almost eliminated from the estuary. The commonest estuary plant is oioi or jointed wire rush which forms a band around most of the estuary shoreline. Closely associated with oioi are a deciduous sedge, three-square, and saltmarsh rush.

Other estuary plants are shore ribbonwood, salt-marsh crassula, sea primrose, glasswort, salt-marsh cotula, slender clubrush, batchelor's buttons, native celery, native musk, iceplant, goosefoot, orache, Buck's horn plantain, arrow grass, grasswort, remuremu and wiwi or knobby clubrush.

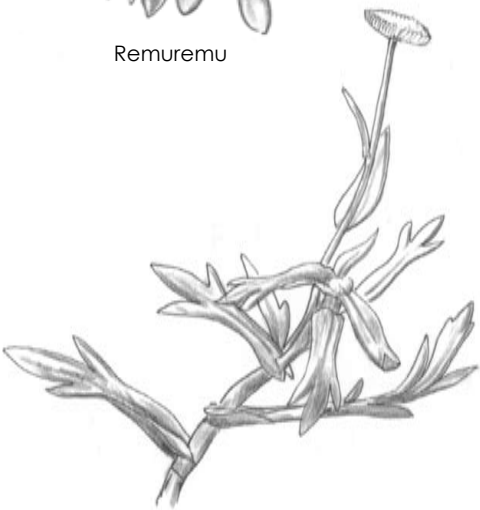
Beds of eelgrass are exposed at low tide. Sometimes masses of algae wash ashore. These clumps are made from long, dark brown strings of Gracilaria mixed with a variety of red seaweeds, sea lettuce and green hair.

The mudflat is the habitat of crabs, shellfish, worms and wading birds. Daffodil Bay is the best place for an estuary fieldtrip as it has the greatest range of animals including four sorts of crabs and a variety waterfowl and waders. The lack of rocks in the estuary limits the range of species and compared to Bluff Harbour it has a meagre fauna. The illustrations show the crabs and shellfish of the estuary. Publications mentioned in the references give a more detailed picture of estuary life.

Gracilaria, greenhair and sea lettuce

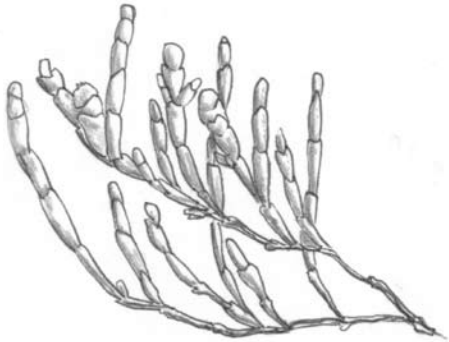
Remuremu

Native celery



Bachelor's buttons

Grasswort



Glasswort

Goosefoot

Sea primrose

Saltmarsh cotula

Small saltmarsh rush

Buckshorn plantain

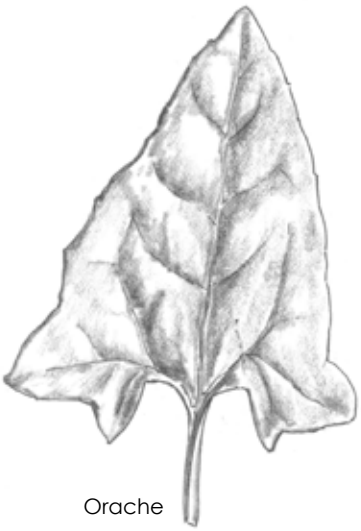
Saltmarsh crassula

Native musk

Arrowgrass

Wiwi

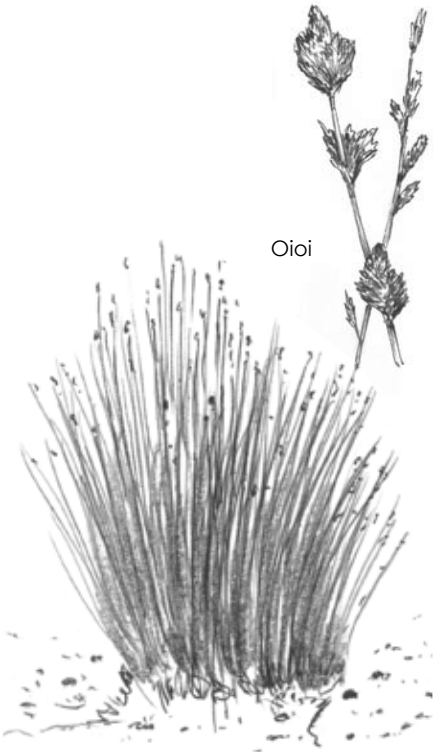
Shore ribbonwood



Orache

Eel grass

Three-square



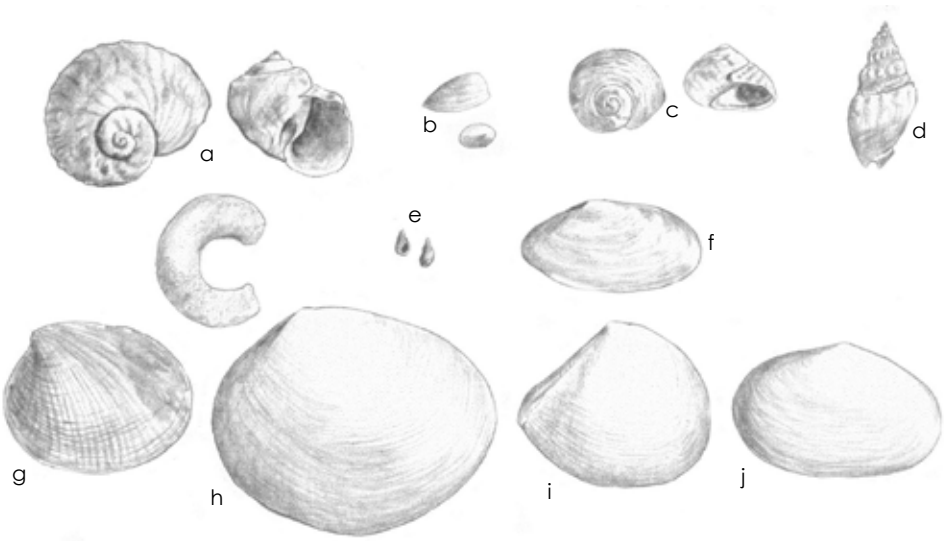
Oioi

Saltmarsh rush

Salt grass

Ice plant

Native spinach



Saltwater shellfish

a) Mudsnail and eggs
b) Mudflat limpet
c) Mudflat topshell
d) Mudflat whelk
e) Estuarine snail
f) Wafer shell
g) Cockle
h) Trough shell
i) Wedge shell
j) Pipi

Common mudcrab, stalk-eyed mudcrab, spider crab and hairy-handed crab

Freshwater Plants and Animals

Plants

The largest body of fresh water in Otatara and Sandy Point is Silver Lagoon, an area of around 23 hectares, accessed by McShane's Track from Coopers Creek. At its deepest it is about 1.5 metres but in a drought it is almost dry. The most conspicuous freshwater plants here are the robust tussock sedges that surround it. The Oreti Ponds along the road into Southland Sand and Gravel are formed from gravel removal operations. Common water plants here are oxygen weed, water buttercup, milfoil, pondweed and a freshwater alga called stonewort. Other plants growing close to the water are sharp spike-sedge, jointed rush, silverweed, toetoe and spearwort. Otatara's ditches have several plants growing in them including red pondweed, curly pondweed, blunt pondweed, horse's mane and starwort.

On the 'Frog Pond' at Daffodil Bay there are two species of floating weed. The larger is duckweed and the other is watermeal, the world's smallest flowering plant. Where are the frogs? Around 1995 frog populations in Southland started to fall rapidly due to a world-wide frog disease. The green frog appears to be extinct in this area and the brown frog is now a rarity.

Toetoe

Tussock sedge

Starwort

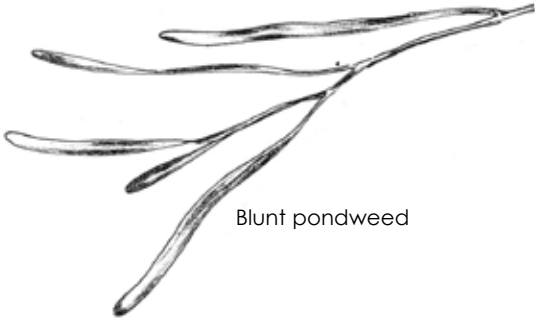
Oxygen weed

Sharp spike sedge

Milfoil

Red pondweed

Curly pondweed



Blunt pondweed

Jointed rush

Water buttercup

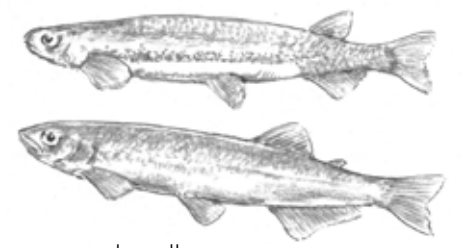
Spearwort

Silverweed

Fish

The Oreti River has many different fish including trout, eels, lampreys, flounders, mullet, whitebait, smelt and Common bullies.

The inanga is one of five galaxiids whose larvae form shoals of whitebait.



Inanga and smelt

Banded kokopu

The small banded kokopu is the fish most often seen in drains and creeks; its juvenile is also a whitebait.

Small ponds have been established in Otatara by landowners wanting to provide habitat for wetland plants and animals. Within a few years, ponds of sufficient size will be fringed with wetland pants and have a population of ducks and pukekos and maybe a kingfisher or shag. Planting with appropriate species can add to the natural character of the new pond.

A pond has recently been established at Bushy Point, near the public walkway which starts on Bryson Road. You will be able to observe it mature over the years as plants establish and birds take up residence.

Brian and Chris Rance at the Southland Community Nursery can advise on the best plants for Southland ponds. Visit them at 185 Grant Road to see their established ponds and wetland plantings.

Birds

The following pages show the commonest freshwater and estuary birds from Sandy Point and the New River Estuary. There are others which are seen from time to time including several wading birds present in the summer on the estuary shore. The dominant waterfowl on the estuary, Oreti Ponds and Silver Lagoon are mallards. Other water birds are black swans, Canada geese, paradise ducks, shovellors, grey teal and scaup. Black-backed gull numbers have dropped since the rubbish dump closed. The two other gulls are the red-billed gull and the black-billed gull. We have three common species of terns and a few different vagrants. White-fronted terns and Caspian terns nest on the estuary shellbanks. Black-fronted terns nest on riverbeds but frequent the estuary.

The commonest of the herons is the white-faced heron which nests in tall trees. The white heron is a rare visitor and there are sometimes a few cattle egrets around. The secretive bittern haunts drainage ditches and pond margins.

Spoonbills are one of the success stories. The first colony in Southland started on Omaui Island in 1990 and the population continues to rise.

The waders are a large and diverse group. The commonest of the migrant waders is the godwit which breeds in the Arctic but spends the summer in Southland. Other migrants are the knot, turnstone and golden plover. Local waders are the pied oystercatcher, black oystercatcher, pied stilt, spur-winged plover and banded dotterel. The rare black stilt shows up sometimes in the estuary. The spotted shag and little shag are frequently seen on the estuary.

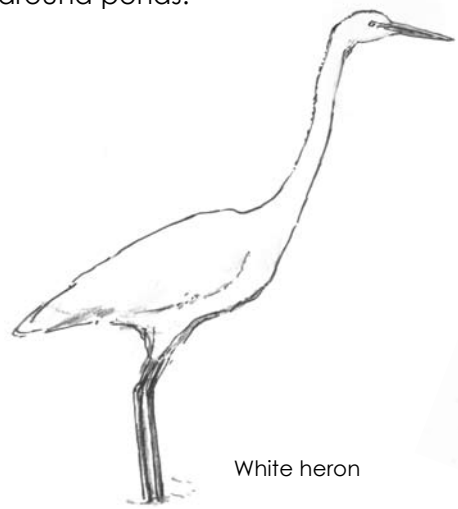
The swallow population is growing but the kingfisher remains a rarity. Perhaps there is a lack of suitable clay banks and tall dead trees in which it can make a nesthole.

Fernbird signs direct you to the Gamble's covenant at the end of Grant Road where you are sure to see them. Fernbirds can be quite common in rushes and low scrub here and elsewhere on the estuary. Pukekos and tiny marsh crakes live around ponds.

Cattle egret

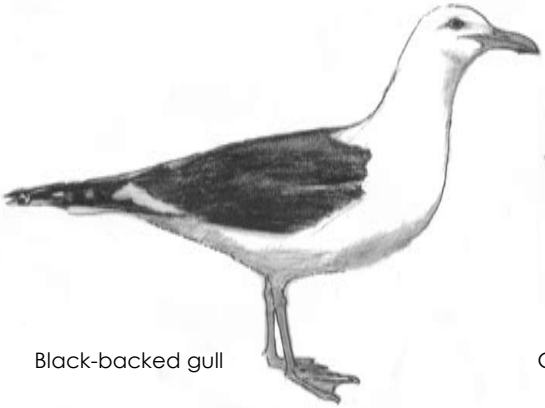
White-faced heron

Spoonbill

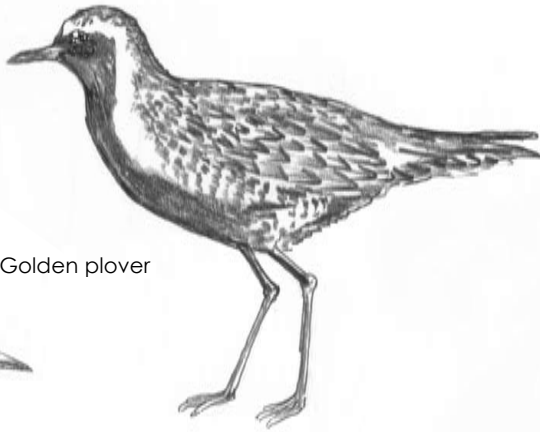


White heron

Bittern

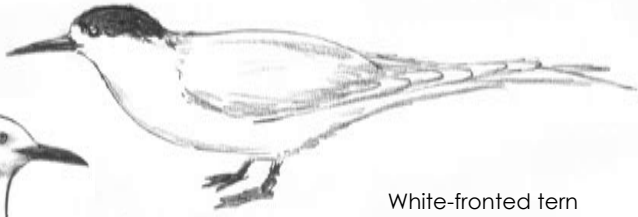


Black-backed gull

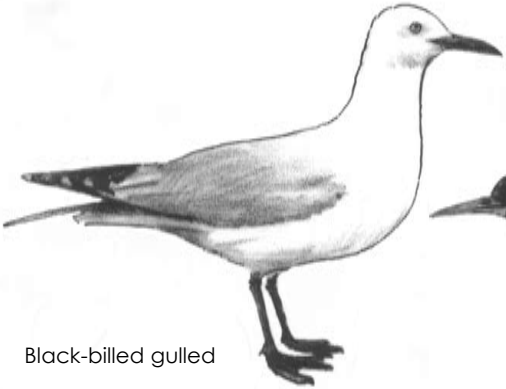


Golden plover

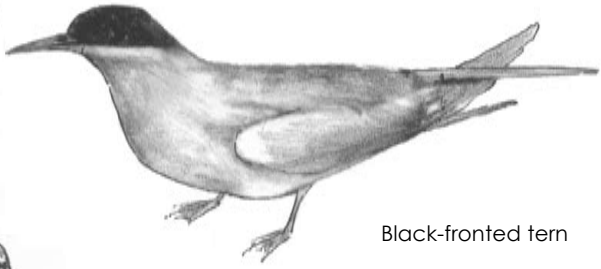
Caspian tern



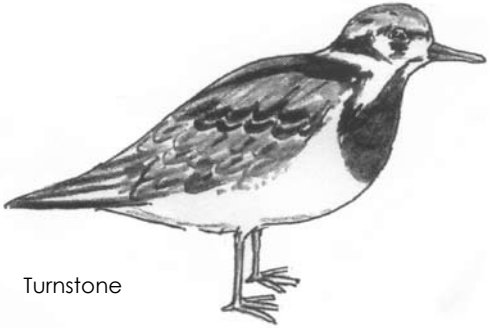
White-fronted tern



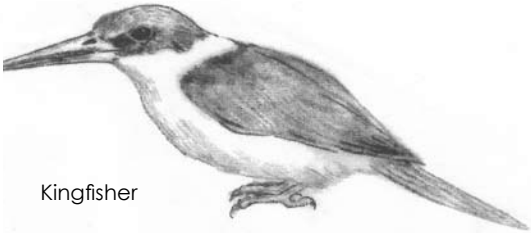
Black-billed gulled



Black-fronted tern



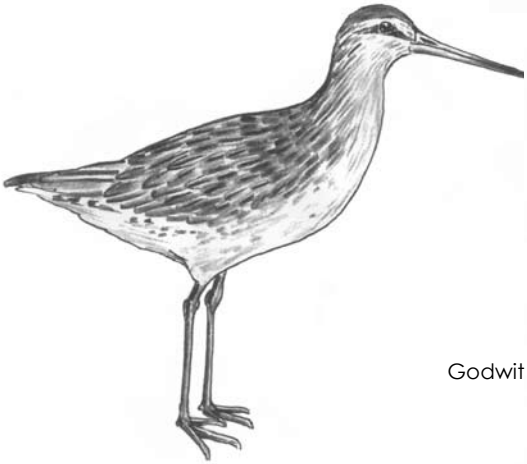
Turnstone



Kingfisher

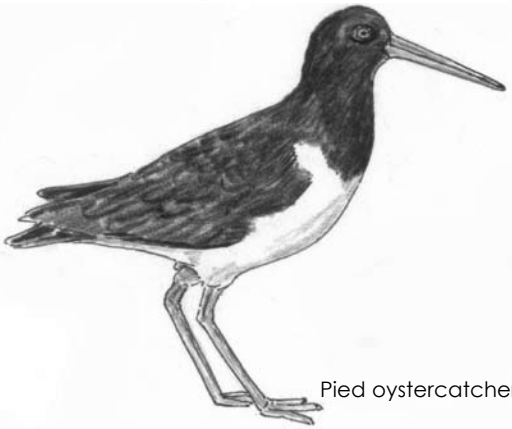
Pied stilt

Black oystercatcher

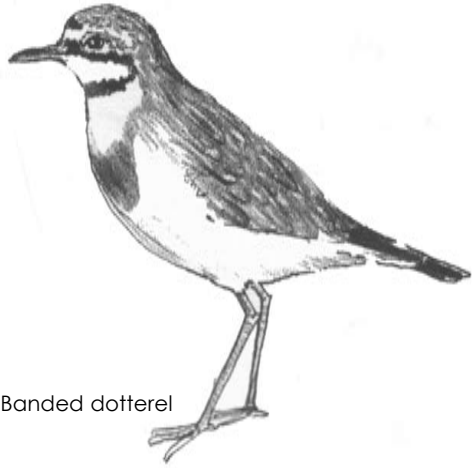


Godwit

Spur-winged plover



Pied oystercatcher



Banded dotterel

Oreti Beach

Oreti is a shortened form of Te Whanga Koreti Hau Tonga meaning 'The Bay that catches the South Wind.'

When the bridge over the Oreti River was opened in 1929 easy access to the beach was available for the first time. In 1928 the Oreti Beach Association was formed, later becoming the Sandy Point Development Association. Beach racing grew over the next decade with cars and motorbikes using the firm, smooth surface as a racetrack long before the Teretonga facility was built.

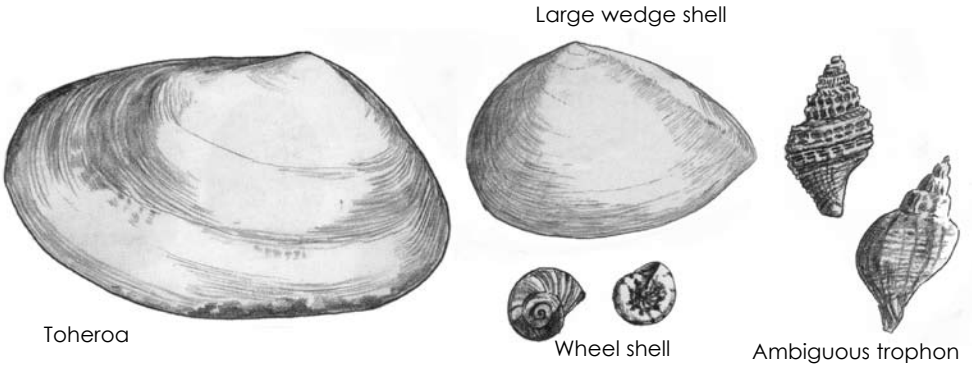
The beach is a popular summer picnic spot and floundering, swimming and surfing are traditional activities. The beach is good for kites and a great place from which to watch the sun sink below the horizon.

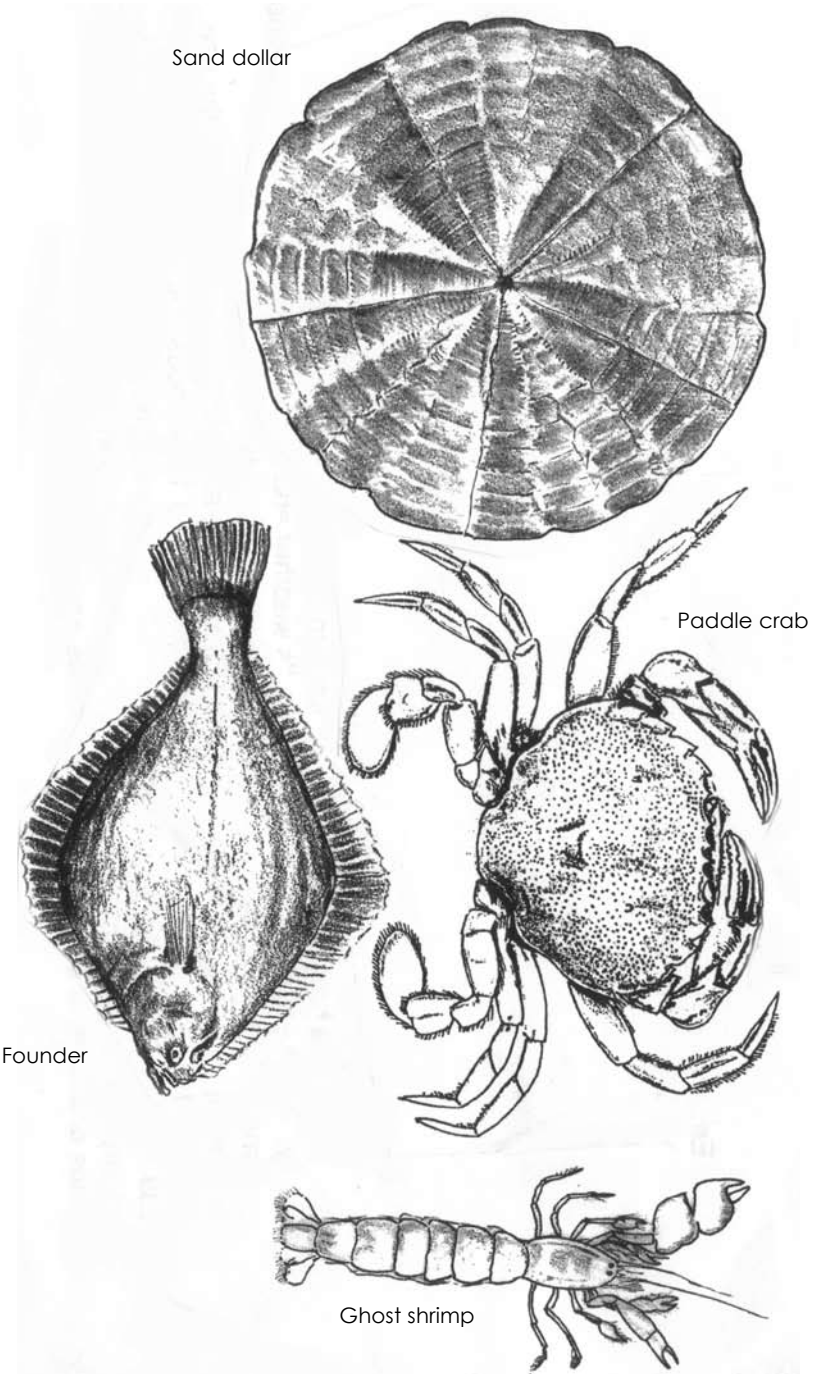
Between high and low tides the beach appears barren but a thriving community, mostly microscopic, lives amongst the sand grains. Minute crustaceans, ghost shrimps, wedge shells, worms and toheroas live here, filtering the plankton from the water, preying on even smaller creatures or scavenging scraps of detritus.

The largest shellfish are toheroas which reach 16cm. Although they appear abundant the population is too small to sustain harvesting apart from a modest customary collection.

The wheel shell and trophon live amongst the weed at low water. The male trophon has a sculpted shell and the female trophon has a smooth shell. The many other species of shells have mostly been cast ashore from deeper water and do not live in the inter-tidal zone.

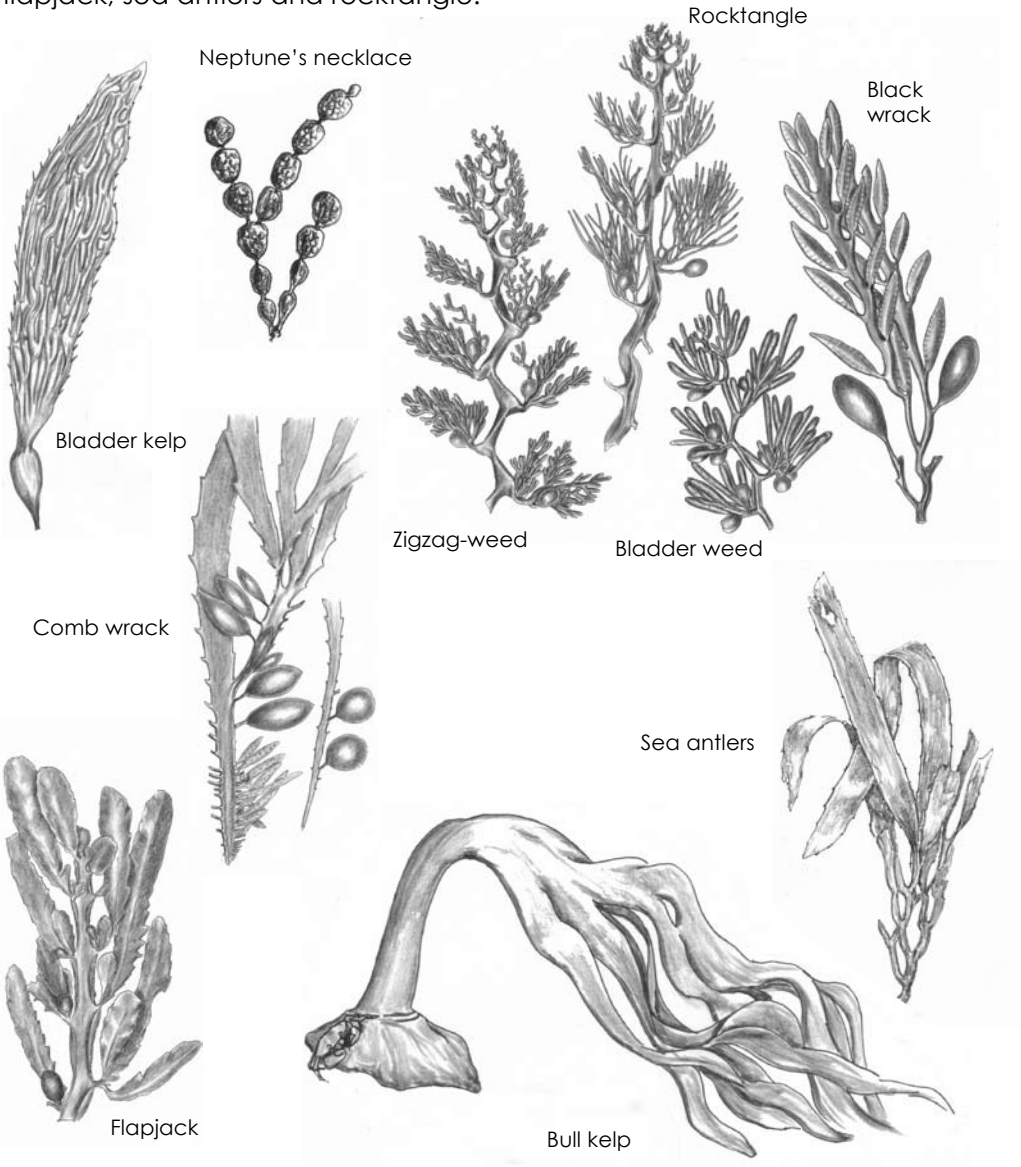
Below low tide paddle crabs, flounders, sand dollars and many different shellfish live on the sandy seafloor. Red seaweeds, growing in profusion in shallow water, are cast ashore by one tide and pulled back by the next.




Sand dollar
Paddle crab
Founder
Ghost shrimp

Seaweeds

Most of the large seaweeds on the beach have drifted ashore from the rocky coast. There are hundreds of species, a few of which are shown here. These are all brown seaweeds. The most massive is bull kelp and the longest fronds belong to bladder kelp. Two species of comb wrack differ in the shape of the floats – one spherical and the other elongated. The others are Neptune's necklace, black wrack, bladderweed, zig-zag weed, flapjack, sea antlers and rocktangle.



Sand Country

Since European settlement, the dunes have undergone a complete change in vegetation. Originally low dunes a few metres high were held in place by the native sand-binding sedge pingao. These dunes would have emerged from a vast sandy plain on, or slightly higher than, the water table. Along the flats were clumps of flax and the sedge *Isolepis nodosa* with a range of shorter species including sand coprosma, shore gentian and shore ribbonwood. These species have now been almost entirely displaced by the introduced marram grass, lupins and pasture grasses.

The first step in the change was the introduction of stock which grazed the fragile dune vegetation, heavy hooves breaking up the surface and starting the movement of sand. Rabbits were liberated on Sandy Point in 1863 and their burrowing and destruction of the native vegetation started a massive migration of sand which swallowed farmland, bush and lagoons and began to fill in the estuary. The beach on the ocean side, deprived of the protection of the sand-binding pingao, was cut back rapidly and a large bight formed south of the main entrance. There was a fear that the Oreti River could breach through here. The entire south end of the peninsula was a desert of drifting sand but the erosion was stemmed eventually by the planting of marram which held the sand, by rabbit control and by the building of brushwood groynes.

Pingao

The stabilising of the dunes, draining of the wetlands behind them and oversowing with pasture grasses have eliminated the native dune vegetation but inland, totara and matai forest is now growing on what was bare sand a century ago. Extensive planting of pines, beginning in the 1920s, has helped erosion control and provided an economic return. Various parts of the domain have been farmed but much former marginal farmland has been retired and will be allowed to revert to a scrub and forest cover.

Marram has an extensive root system that holds dunes in place up to about eight metres high. These dunes have a limited life and eventually outgrow themselves and collapse with a new dune quickly taking shape. Sand can accrete very rapidly, building up as much as a metre in a day.

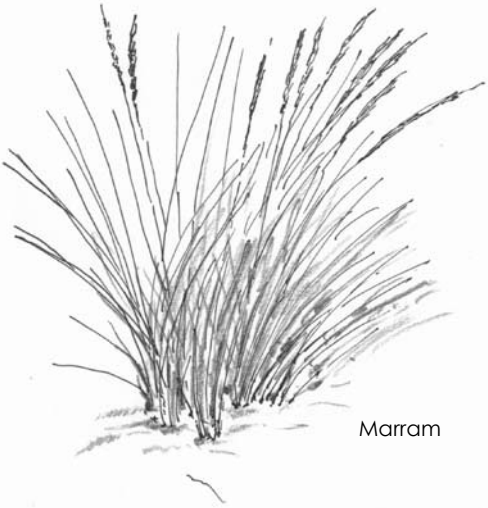
It seems likely that human disturbance increases dune growth. Tracks through the coastal vegetation become wind tunnels in which sand is rapidly deposited. The largest dunes on Oreti Beach are in the vicinity of the entrances where human disturbance is greatest.

Marram is a successful coloniser and rapidly takes over from pingao which cannot live on the high firm dunes and dies out. The last pingao native to Oreti beach disappeared about 1992.

Several plants occur right at the edge of the sea, occasionally inundated by spring tides. Most noticeable are sea kale, native celery and shore groundsel which has large, purple flowers. Behind the dunes elder, lupin and pasture grasses dominate.

Shore groundsel

Sea kale



Marram

Lupin

The Pine Forest

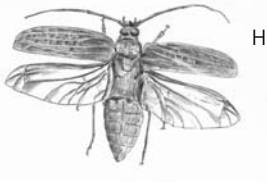
Pine trees were planted on Sandy Point for erosion control and as a sustainable replacement for slow-growing native trees. Pines thrive on well-drained soil and reach harvestable size in 25 years. The growing pines stabilise the sand, provide a windbreak and shade and are a good habitat for birds. Birds bring seeds into the pine forests, adding to plant diversity. Some of the forest will remain unlogged, eventually being replaced by native forest which originated from bird-carried seeds.

Many of the walking and cycling tracks are through pine forests. Look for fungi in the autumn and orchids around Christmas time.

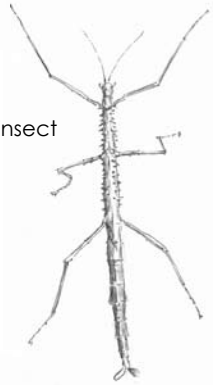
In September a rim of yellow forms around puddles. This is pine pollen produced in vast quantities by the male cones.

Many insects make their homes in pine forests. Look for the stick insect, huhu beetle, large cicada, woodwasp and giant wasp. Check rotten logs for huhu grubs which are appreciated by the museum's tuataras.

Most fungi flourish in autumn and quickly disappear. There are hundreds of fungi with a multitude of forms in this area. Most of the large and colourful ones are not native. Some grow in open paddocks or lawns; others on or under trees. Here are some of the better known ones: fly agaric, basket fungus, earth star, sticky bun, red tobacco pouch, ink cap, shaggy ink cap, flower fungus, birch bolete, bracket fungus and waxy laccaria.

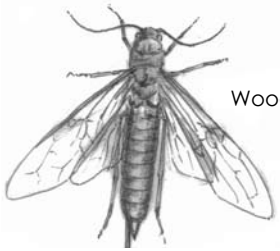


Huhu beetle

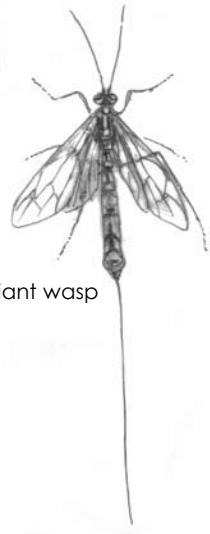


Stick insect

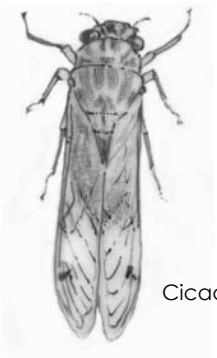
Huhu grub



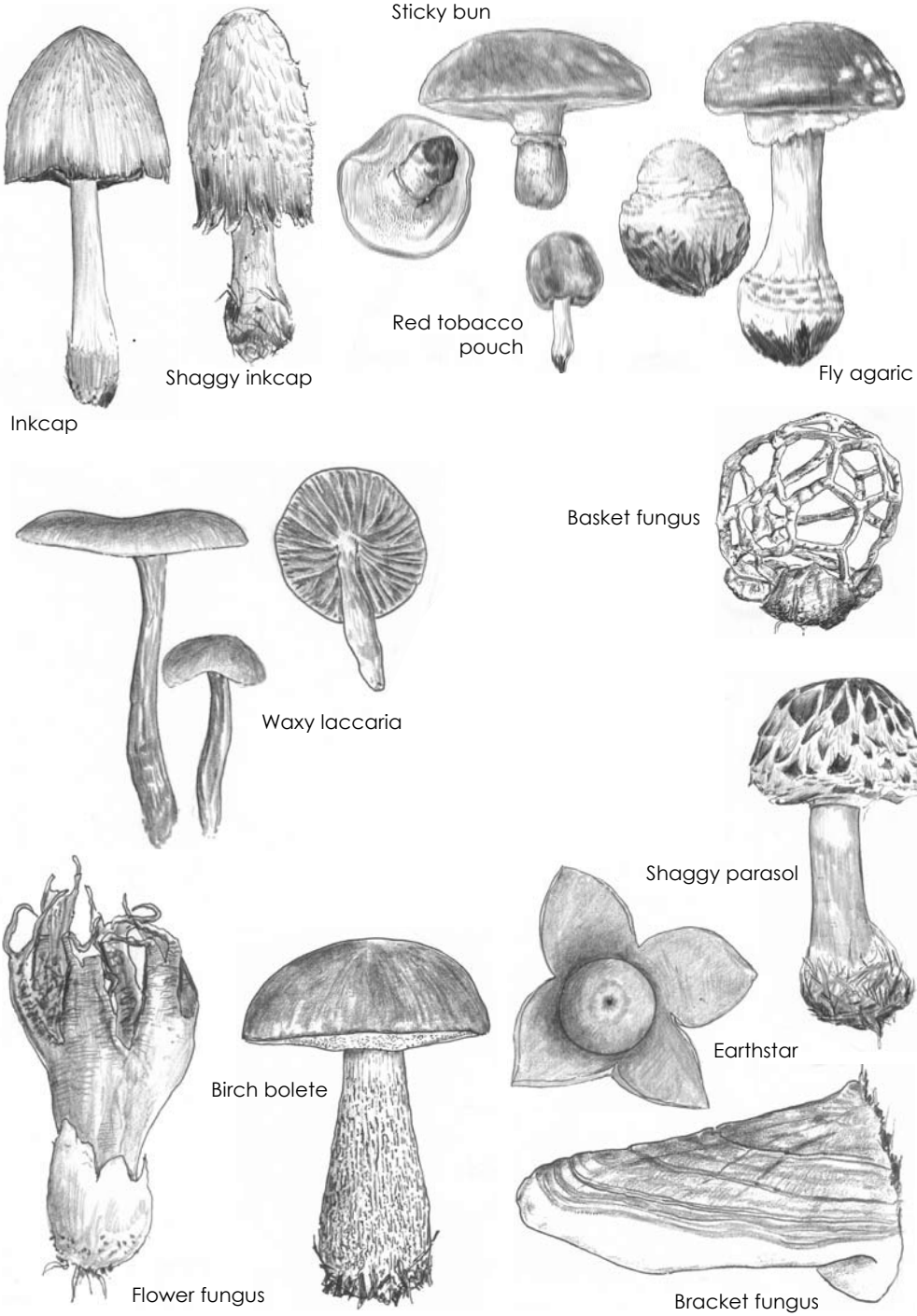
Wood wasp



Giant wasp



Cicada


Sticky bun
Red tobacco pouch
Fly agaric
Shaggy inkcap
Inkcap
Basket fungus
Waxy laccaria
Shaggy parasol
Earthstar
Birch bolete
Flower fungus
Bracket fungus

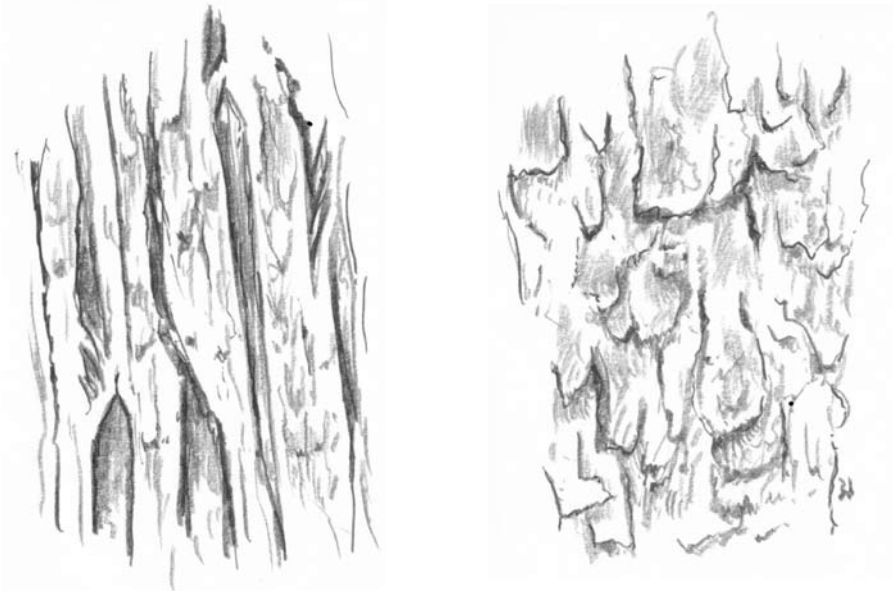
The Native Forest

Otatara was clothed in dense forest until milling and fire replaced the forest with farmland. The two main types of forest are totara forest on sand dunes and mixed forest on flat land, dominated by matai, kahikatea and miro. Kahikatea swamp forest once covered the wet, low-lying areas with the best remaining example at the end of Grant Road. The largest tracts of remaining forests in our area are the Otatara Scenic Reserve, Bushy Point, Kilmock Bush, the Otatara South Scenic Reserve and the forest at Daffodil Bay. There are tracks in most of these forests (see map) and pamphlets are available from the Invercargill City Council, museum and other outlets.

Trees

The forest is podocarp forest which means that it is dominated by a group of related trees, the podocarps, which are: totara, Hall's totara, miro, matai, rimu and kahikatea. The juvenile foliage is often different as you can see from these drawings. In ideal conditions kahikatea grows to be New Zealand's tallest native tree but here it is limited by the wind. Otatara is nationally significant in being the largest and best remaining example of lowland totara forest on sand dunes.

From the lookout on Hatch's Hill you see a 'new' forest. A hundred years ago this whole area was a moving sea of sand spilling into the estuary; it was called the Southern Wilderness. Totara forest grew quickly when the creeping dunes were stabilised.

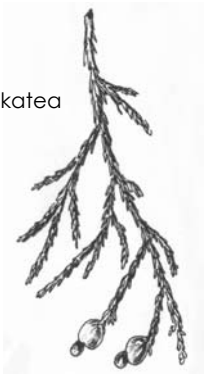


It is difficult to separate the two species of totara but *Podocarpus totara* (left) has thick bark and *Podocarpus hallii* has thin bark.

From the Daffodil Bay Lookout you can see from the many shades of green just how totara clothes the ridges, while the wetter gullies have a mixture of trees including black matipo, wineberry, cabbage trees and manuka.

Other trees, with a trunk diameter of over 10 centimetres, are kamahi, southern rata, wineberry, pokaka, pepper, pate, red matipo, black matipo, lemonwood, kaikomako, marble-leaf, three-finger, lancewood, narrow-leaved mahoe, koromiko, stinkwood, manuka, cabbage tree, rohutu, soft tree fern, hard tree fern and broadleaf. The introduced sycamore is a large deciduous tree able to invade native forests.

Juvenile kahikatea



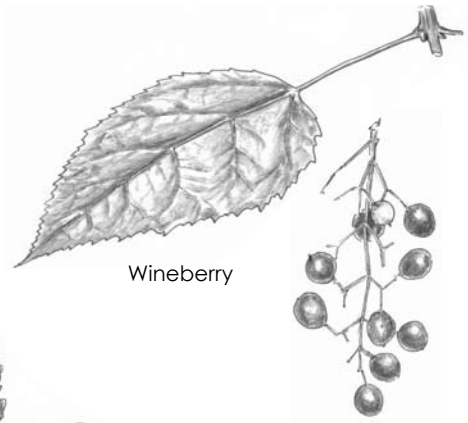
Kahikatea

Matai

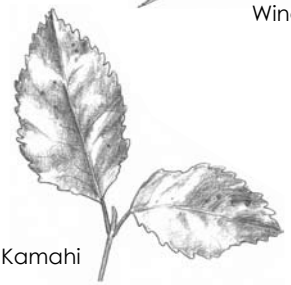
Miro

Totara

Rimu

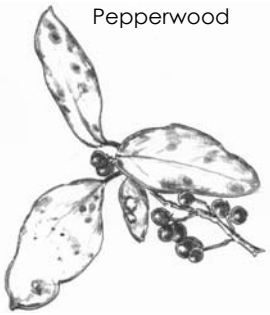


Wineberry



Kamahi

Pokaka



Pepperwood

Pate

Red matipo

Sycamore

Black matipo

Lemonwood

Three finger

Kaikomako

Narrow-leaved mahoe

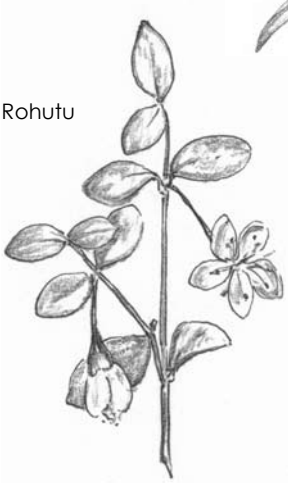
Marbleleaf

Broadleaf

Koromiko

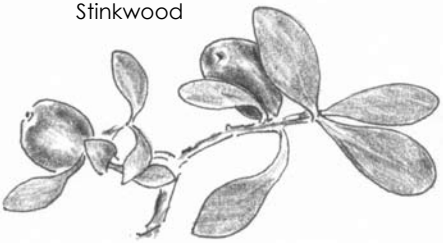
Manuka

Lancewood, adult and juvenile



Rohutu

Stinkwood



Shining karamu

Fibrous tree fern

Soft tree fern

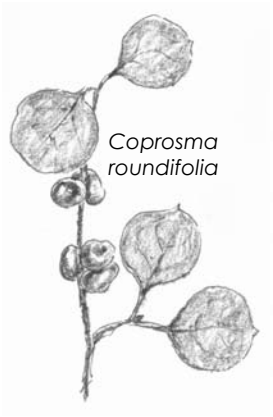
Coprosma areolata

Shrubs

Shrubs, generally less than two metres high, include karamu, shining karamu, *Coprosma areolata, C. propinqua, C. rotundifolia, C.rigida, C.tayloriae*, weeping matipo and mingimingi. Shrublands are a successional stage which develops on land allowed to revert after forest clearance. The clearance of shrubland puts forest regeneration back at least a decade or two and often removes the wind protection from mature forest.

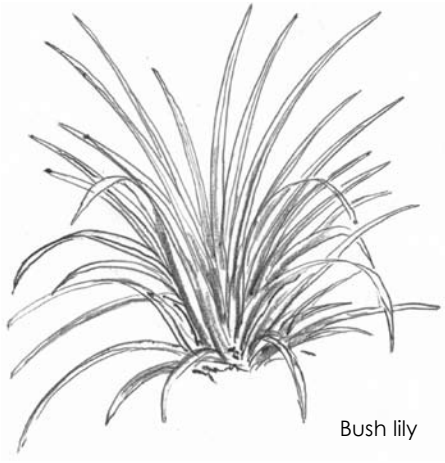
Forest Floor

The forest floor is a carpet of tiny plants including mosses, liverworts, ferns and the seedlings of trees and shrubs. The astelia or bush lily, bush rice grass and many ferns dominate the forest floor.



Coprosma roundifolia

Mingimingi



Bush lily

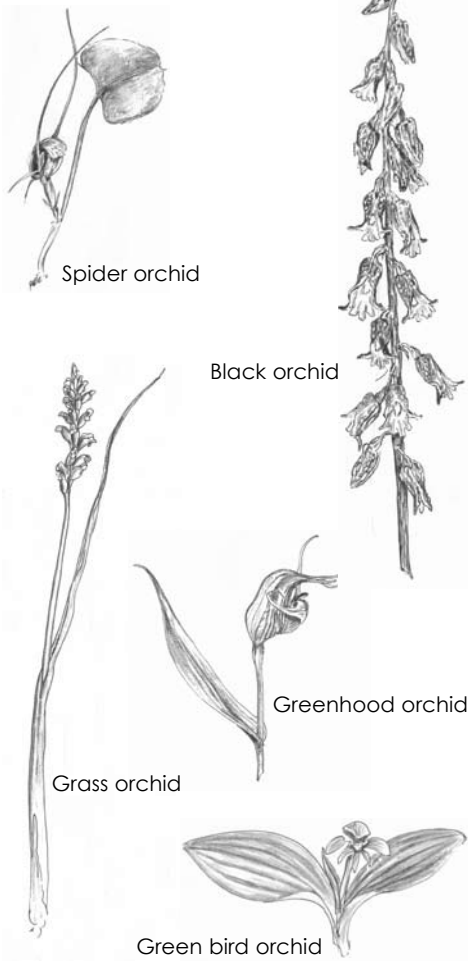
Coprosma rigida

Prickly mingimingi

Bush rice grass

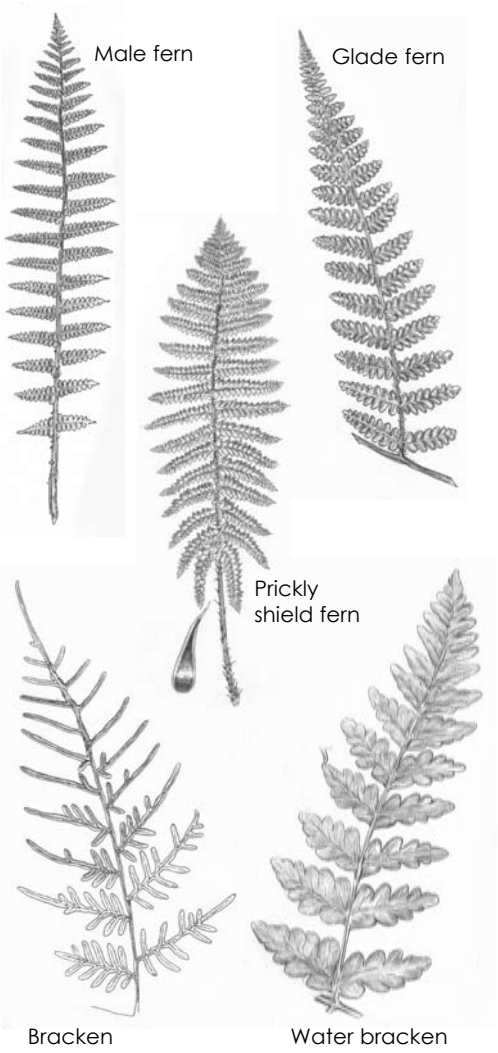
Orchids

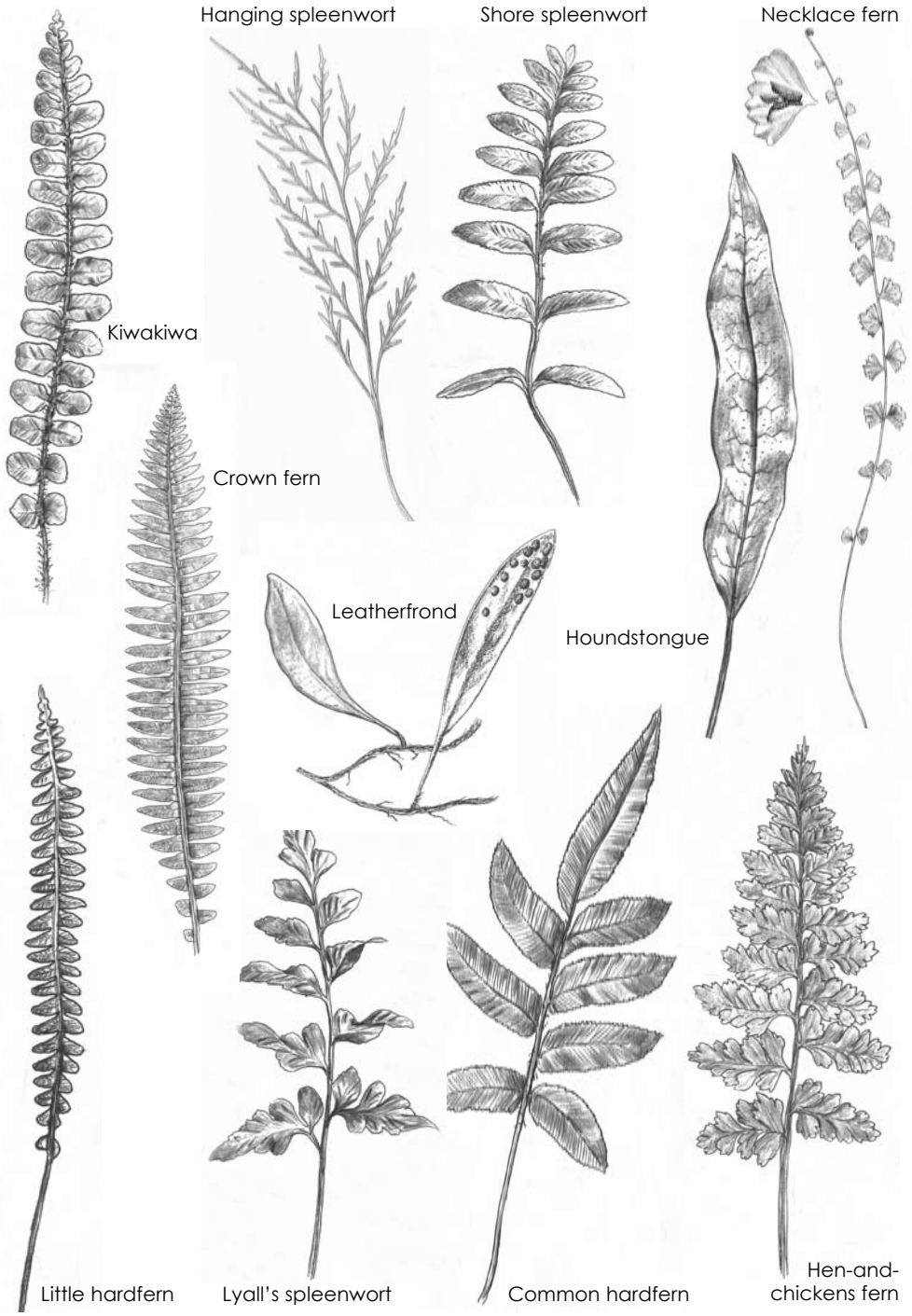
There are a few orchids – greenhood orchid, black orchid, green bird orchid and spider orchid. The black orchid or Gastrodia has no leaves and is a parasite on tree roots. It is quite common but not easy to spot as it looks like a dead twig. The spider orchid has a single leaf and a single flower. Another orchid, the grass orchid, is abundant in open areas.



Ferns

Otatara/Sandy Point has at least 50 ferns occupying habitats such as swamps, dry gullies, open country, pine forests and shaded bush. Some are epiphytes. Some die down in the winter, sending up new fronds in the spring. The most common of the ferns are hounds tongue, hen-and-chickens fern, prickly shield fern and crown fern.




Hanging spleenwort
Shore spleenwort
Necklace fern
Kiwakiwa
Crown fern
Leatherfrond
Houndstongue
Little hardfern
Lyall's spleenwort
Common hardfern
Hen-and-chickens fern

Climbers

Our forest and shrublands have several species of climbing plants. The dominant vine is native pohuehue, which can sometimes be a nuisance when it smothers shrubs. It is the foodplant of the caterpillar of the copper butterfly. Other native climbers are wirebush, native jasmine, climbing rata, native clematis, three species of lawyer and native bindweed. Two troublesome exotic climbers are old man's beard and Chilean flame creeper (see 'Pest Plant' section for illustrations).

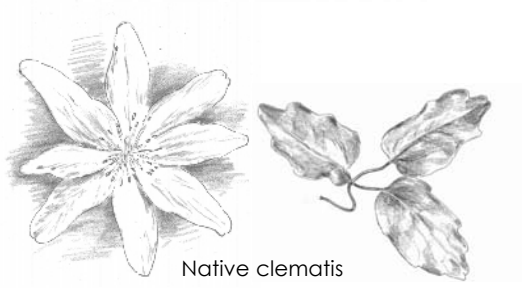
Other plants are better described as scramblers rather than climbers. Examples are climbing fuchsia, blackberry and bittersweet.

Climbing fuchsia

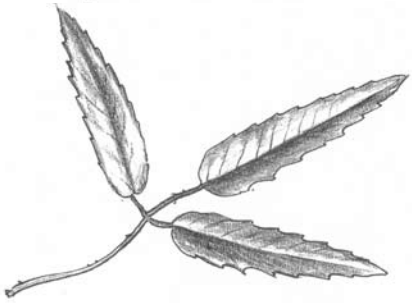
Pohuehue

Common lawyer

Round-leaved lawyer

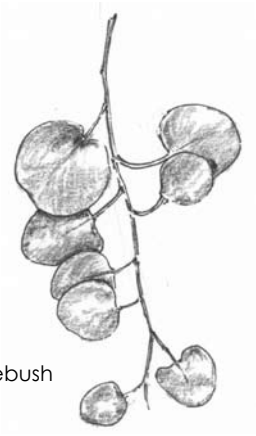


Native clematis



Narrow-leaved lawyer

Climbing rata



Wirebush

Native jasmine (adult and juvenile)

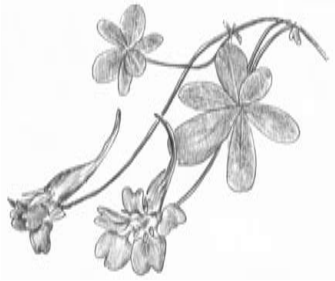
Pest Plants

Not all plants are welcome. What is our worst plant pest? Perhaps it is sycamore which grows quickly and spreads fast. Perhaps it is Chilean flame creeper whose scarlet flowers have become more obvious each year since its first appearance around 1995. Other pests are blackberry, holly, cotoneaster, gorse, broom, ivy, green daphne, European spindleberry, Old man's beard, elderberry and barberry.

Why are these plants not welcome? Weeds are found around people's houses, in their bush sections or in reserve areas in Otatara and Sandy Point. Once they get into the bush, they grow faster than native plant species, smother seedlings and ground cover plants; they thrive on disturbance and alter their environment to favour the growth of themselves or other weeds over our native vegetation. Combined, these factors threaten the long-term survival of Otatara bush and the bush is one of the reasons many people choose to live here. Native plants can be weeds as well. Lacebark and karamu are native to New Zealand but not Southland and they spread quickly if they are planted here.

Sycamore

Ivy



Chilean flame creeper

Tutsan

Blackberry

So What Can You Do?

The first step is to learn what these weeds look like. There are free guides that can help you, produced by the Invercargill City Council, Environment Southland and Weedbusters. The Weedbusters website www.weedbusters.org.nz has lots of useful information about weeds and how to get involved in weedbusting activities.

The Regional Pest Management Strategy is also available online from Environment Southland's website www.es.govt.nz

Getting started on your weeds is the hard part. Controlling weeds takes time - firstly to do the job itself, then repeated visits to make sure there aren't more weeds growing where you've got rid of them in the first place.

There are three main ways of controlling weeds. Physical control involves pulling, digging or cutting weeds. Chemical control uses herbicides to kill weeds. Habitat management involves altering the conditions so the weeds are not as vigorous and don't cause as much damage.

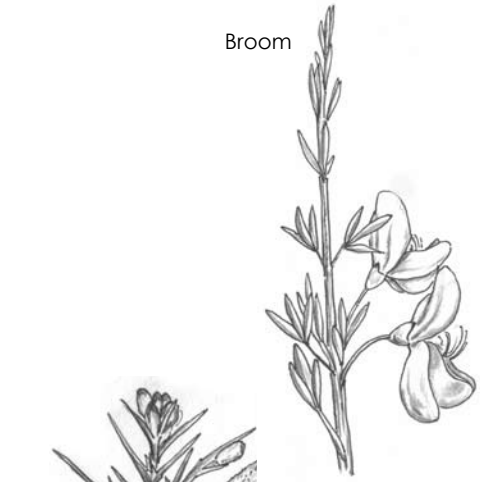
One of the best things you can do is to plant fast-growing native species in your bush and garden to make it less suitable for weeds. The Otatara - Sandy Point Bushcare Guide lists suitable native plant species for this. The Southland Community Nursery website www.southlandcommunitynursery.org.nz has lots of good information about

native plants - how to grow them, which ones are fast growing, which ones attract birds. The Community Nursery also provides free materials and facilities for people to grow native plants for their own use.

The right method to control weeds depends upon the type of weed you are dealing with, the quantity of weed, and where it is found. Seedlings and small plants can be pulled or dug out. However, some weeds will re-sprout if the roots are left in the ground, or if the stems are cut and not treated with herbicide.

Controlling weeds with herbicides can be appropriate, but care is needed to make sure desirable plants are not harmed. Large areas cleared of weeds may just grow more weeds if they are left bare. It can be frustrating to spend precious time controlling weeds, simply to find you're back to square one in a few months.

If you want to know more about the worst weeds in Otatara and Sandy Point contact the Otatara Landcare Group or Environment Southland, Ph 0800 768 845.



Broom

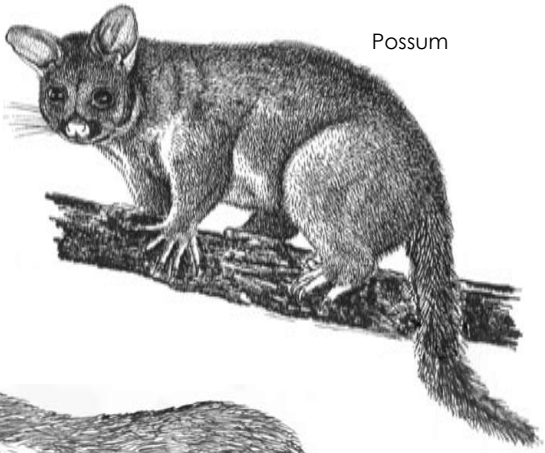
Gorse

Darwin's barberry

Green daphne

Old man's beard

Animal Pests


Possum

Animal pests cause considerable damage to wildlife and bush. The most serious pests are probably the possum, stoat and bush rat. Many residents are controlling these pests with trapping. Other pest animals are rabbits, hares, mice and feral cats.

At Bushy Point the Otatara Landcare Group is controlling around 90 hectares of land for stoats, rats and possums. If you would like advice on how to control pest animals on your property, without harming your pets, contact Environment Southland or the Otatara Landcare Group.


Stoat


Rat

Your Garden as a Habitat

Otatara residents are fortunate in living close to so many different environments. The plants and animals in Otatara gardens are a mixture of European species and an overflow from forest and farmland. A garden with lawns, shrubbery and taller trees will provide food for around fifteen species of birds. The nectar-feeders – tui and bellbird – can be attracted to a garden by planting flax and native fuchsia. The native pigeon or kereru eats the leaves of the kowhai, lowland ribbonwood, laburnum, plum and willow. For some birds, tall trees are the most useful thing your garden can provide.

Many of the birds mentioned in this book can he attracted to your property by creating the habitats they thrive in, by planting appropriate native plants, tall trees, nesting areas, and by doing animal pest control. Those lucky enough to live near the estuary can even tempt the elusive fernbird into their gardens!

One species of lizard, the common skink, is frequently seen in gardens.

Birds of the Otatara Area

Over 70 species of birds have been recorded from Otatara and Sandy Point making it one of the most rewarding parts of Southland for birdwatching. This total includes seabirds seen from the beach, introduced garden birds, bush birds, waders on the estuary mudflats, gulls, waterfowl and others.

Useful items for the birdwatcher are binoculars and a comprehensive bird guide. A squeaker is helpful for attracting bush birds such as fantails, bellbirds, tuis, grey warblers, tomtits and brown creepers. A squeaker is a scrap of polystyrene rubbed on wet glass. It sounds like a bird in trouble and elicits a mobbing response in bush birds.

Most of the familiar garden birds are not native. The commonest birds in this area are blackbirds, thrushes, starlings, chaffinches and redpolls. Other introduced species are yellowhammers, greenfinches, sparrows, hedge sparrows or dunnocks and goldfinches.

In pre-human times the bush was very different to what we see today. There were no mammals apart from bats and the birdlife would have been unimaginable. Since the arrival of humans with rats and later stoats and possums, bird numbers have dwindled and 50 of New Zealand's birds have become extinct.

The bush birds we see in our area today are the hardy ones; the losers are the moas, saddleback, piopio, laughing owl, kiwi, kakapo, adzebill, flightless goose, parakeets, robin, bush wren and kokako. We still have the fantail, brown creeper, grey warbler, tui, bellbird, native pigeon, tomtit, shining cuckoo and silvereye. Fantail numbers fluctuate wildly. A cold winter kills most of them but they breed rapidly in spring, often nesting several times. One in ten fantails is black. Tomtits and brown creepers live in the more mature forest. Grey warblers frequent Otatara gardens. The shining cuckoo is a resident from October to February. Its egg is laid in the nest of the grey warbler. Silvereyes form conspicuous flocks in winter, visiting sources of nectar and bird feeders.

In open country look for a harrier hawk circling, scanning the ground for carrion or defenceless prey. The skylark sings on the wing and can be heard throughout the year. A similar bird, the native pipit, frequents open ground and beaches. Its call is a sad 'cheeer'. Magpies nest in the tall trees and small flocks feed on insects in pasture. Herons are abundant on wet ground in flocks of 30 or more. A flock of herons is a 'siege'. We have two species of owl, the Little owl and the morepork, both of which are heard calling at night. The Little owl is the commoner and sometimes shows itself in daytime.

Bellbird

Tomtit

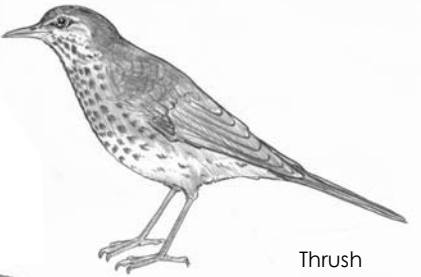
Tui

Starling

Little owl

Blackbird (male)

Blackbird (female)

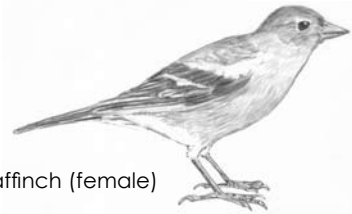


Thrush

Native pigeon

Harrier hawk

Goldfinch

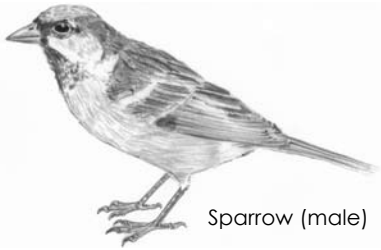


Chaffinch (female)

Morepork

Chaffinch (male)

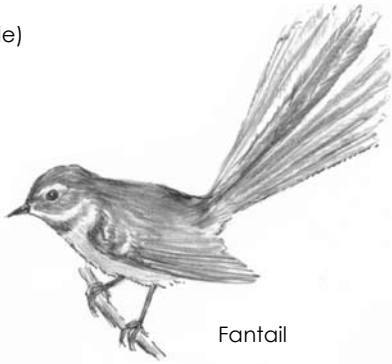
Dunnock



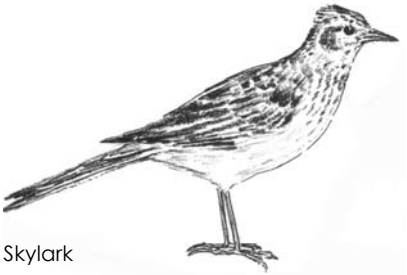
Sparrow (male)

Sparrow (female)

Yellowhammer



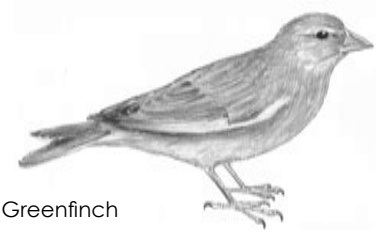
Fantail



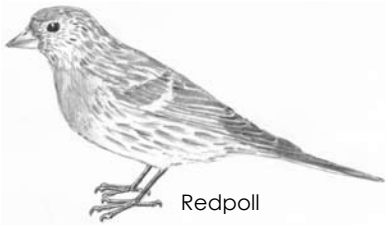
Skylark

Grey warbler

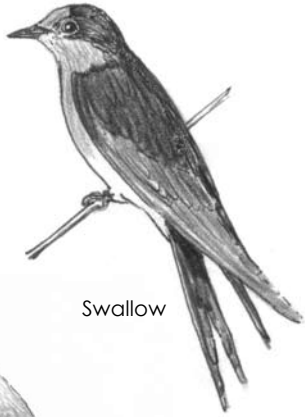
Shining cuckoo



Greenfinch

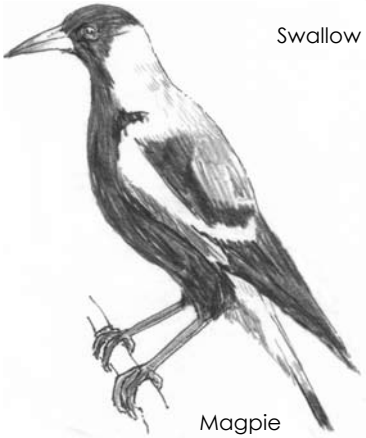


Redpoll



Swallow

Brown creeper



Magpie

Silvereye

Recreation

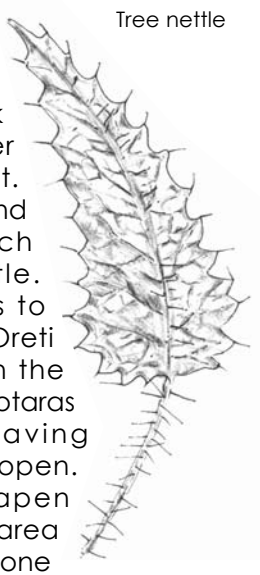
The Tracks

The loop track through the Otatara Scenic Reserve takes around 45 minutes. There are several habitats - old sand dunes dominated by totara close to Dunns Road, a damp interior with manuka, Coprosma species and black matipo, and a tract of forest with tall pokaka, kahikatea and matai. The tallest trees were milled in the early days but the forest has recovered.

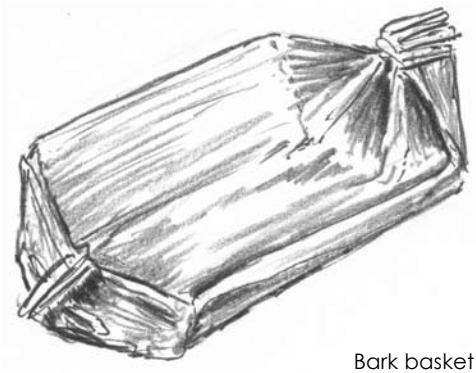
Kilmock Bush is dominated by matai and totara which began life as seedlings amongst scrub on a sand dune a century ago. These wind-battered seedlings, now mature trees 15m high, still show the effects of their fraught start to life in their gnarled trunks. Now, the few saplings that survive beneath a dense canopy grow straight. The forest floor has remarkably few species, which is typical of the understorey of totara forest.

Beyond the ridges which form Kilmock Bush, the old dunes are clad in pohuehue, bracken, lupin and blackberry but the abundance of native seedlings here shows that the process of change from pohuehue to forest is underway, interrupted and set back sometimes by fire. The loop track takes about 30 minutes.

Otatara South Scenic Reserve in Huruhuru Road has no formed track but trails meander through the forest. Take a compass and explore but watch out for tree nettle. The reserve goes to the edge of the Oreti River. Here, as in the Kilmock Bush, the totaras show signs of having begun life in the open. Many are misshapen showing that the area was sand dune at one time. The largest of the totaras is about 7m in girth although not very tall. Look for trees which have had the bark peeled off. As late as the 1950s these trees provided bark for



Tree nettle



Bark basket

Bark stripped from trunk of totara

Maori to make baskets. In the early days the gnarled totaras on the riverbanks provided 'knees' which were used by boatbuilders. Shell heaps on the riverbank were left by Maori who made full use of the resources of the area.

McShanes Track begins opposite the settlement of Coopers Creek on Sandy Point. The first part of the walk is through attractive totara forest with a prolific growth of houndstongue fern. The track takes you through pine forest, then through open country to Silver Lagoon. Return the same way or take the more direct route along the edge of the pines.

Petries Track is one of the more popular Sandy Point Tracks. It takes about an hour to do the loop from Daffodil Bay to McLennan's Flat and back along the Rover Track. The walker enjoys the changing views, vegetation and birdlife. Tree-felling operations change the landscape every couple of decades.

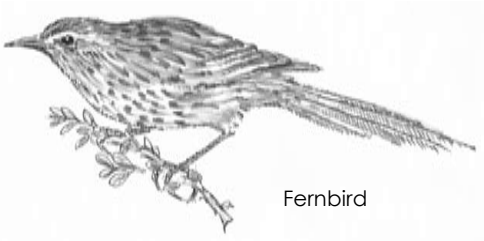
A fine viewing platform gives views across the lower Oreti River to the Otatara South Scenic Reserve. The undulating terrain, scenery, shade and soft ground make this loop a popular running track so expect to encounter numbers of fit people enjoying Sandy Point in their own way.

Bowman's Bush in Ruru Avenue has a short loop track through tall podocarp forest. Here you can find most of Otatara's native trees, shrubs and ferns, plus a few extras that have been planted over the years.

Bushy Point Educational Area or simply 'The Gambles' is a boardwalk at the end of Grant Road. The reserve is private so call the Gambles first. The walk is a loop track through wet shrubland, tall podocarp forest, coastal scrub and jointed wirerush. Features of the area are the fernbirds and the tiny mistletoe growing on manuka.

Dwarf mistletoe on manuka

The longest of the Sandy Point tracks is the Daffodil Bay Track. There are several alternative walks here but the longest loop takes you to Hatch's Hill and back to Daffodil Bay along the coast track. Close to Daffodil Bay is the lookout. Further on the track passes through forest and shrubland, crosses the road and continues to Hatch's Hill. This is the finest viewpoint in Otatara/ Sandy Point, overlooking the estuary back towards Invercargill.



Fernbird

How did Daffodil Bay get its name? The West family who used to live there planted lots of daffodils but none remain.

Bushy Point track is a new walkway developed by the Otatara Landcare Group through the Bushy Point Reserve – access off Bryson Road. Walkers can spend an enjoyable hour visiting the new pond, checking the growth in the newly planted areas and listening for fernbirds.

There are interpretation signs and a self-guided walkway brochure to help explain the features seen.

There are two other mistletoes in the Otatara/Sandy Point area, the common mistletoe seen mostly on coprosma branches, and the rare tupia, a parasite of marbleleaf.

Bushy Point – A Case Study

The Bushy Point restoration project is an opportunity to see conservation in action. In 1998 The Otatara Landcare Group was formed to work for the preservation and restoration of Otatara's natural environment. The Otatara Landcare Group's major project has been the restoration of the 14 hectare Bushy Point Reserve to forest, wetland and shrubland.

Bushy Point is administered by the Department of Conservation and the Otatara Landcare Group and the public has access to areas not fenced for horses and hazards.

Originally the land was forested but was progressively cleared for timber, pasture and sand-mining. The restoration project aims to bring natural habitats back to the area and already there have been thousands of seedlings planted, a pond dug and a walking track marked.

Take the time to do the walk and appreciate the estuary views, the native shrubs and the progress towards restoring the area to its former condition. Otatara residents are always welcome to help on the regular working days organised by the Landcare Group.

How The Restoration Works

A patch of grass is sprayed and when it has died off, hardy quick-growing natives are planted and staked for easy relocation. The most suitable species are flax, broadleaf, cabbage tree, wineberry, manuka, black matipo and mingi mingi.

Plants are grown in nurseries until they are large enough to be planted out. Hand weeding or spraying is necessary once or twice a year otherwise the plant can be smothered by grass.

Slower-growing and less hardy species can be planted in the shelter of the faster-growing plants once they are established. Examples are red matipo, tree fuchsia, kahikatea, rimu and three-finger. Eventually other natives will appear, growing from seed carried by birds or the wind.

In wet areas, flax, tussock sedge, toetoe, cabbage tree and *Carex triffida* do well.

As well as planting, pest control is carried out. Traps are set for stoats, rats and possums and already the number of fernbirds has risen noticeably. Intensive pest control will help other birds such as marsh crakes, bitterns, skylarks and pipits to breed successfully.

Getting Involved

What You Can Do

The Otatara Landcare Group encourages Otatara residents to value their native plants and birds. Contact us for advice on pest control, attracting and protecting birds, planting, ponds, visits and identifications. Come and help with the Bushy Point Project on organised work days or come along on the walks and events organised throughout the year.

Contact the chairperson, Barry Smith, phone 213 1500 or secretary Chris Rance, phone 213 1161.

The Southland Community Nursery, located at 185 Grant Road is a good place to start learning about native plants. Visit to get advice on which plants will suit your situation – for shelter, to attract birds, for wet areas or volunteer some time to help with the nursery (potting, weeding etc) and take away some native plants for free. There are extensive plantings and a track with plant labels around created ponds and restoration areas to help you visualise what your plantings may look like in a few years time. Contact Chris and Brian Rance, phone 213 1161 or email rances@ihug.co.nz.

The Southland Natural History Field Club encourages members to experience Southland's natural places by organising walking trips to wild places or illustrated talks each month. Experts are always on hand to help with bird and plant identification. Contact Lloyd Esler Phone 213 0404

Educational Opportunities

Otatara/Sandy Point offers many educational options for school groups. Good fieldtrip sites include Oreti Beach, the Oreti Ponds, the estuary at Daffodil Bay, Hatch's Hill, Whalers Bay, Noki Kaik, Kilmock Bush, Gamble's boardwalk and Bushy Point Reserve.

Educational material for some of these places has been produced, especially relating to estuary life, pine forests and the sandy shore life. This booklet will be helpful for a bush study.

Suggestions for school activities include: crab study at Daffodil Bay, planting at Bushy Point, pine forest study, native bush walk, beach study and cleanup at Oreti Beach, bush study at Daffodil Bay, fernbird study at Bushy Point, beach hike, orienteering activities, freshwater study at Oreti Ponds, autumn fungus hunt, bird-watching expedition and a historical visit to Whalers Bay and Hatch's Hill.

Contact Lloyd Esler for help planning your educational trips, phone 213 0404.

Resources

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New Zealand Plant Conservation Network – www.nzpcn.org.nz

Southland Community Nursery – www.southlandcommunitynursery.org.nz

Otatara - Sandy Point Bushcare - A guide to enhancing your bush. 2000 Invercargill City Council

PLANT NAMES

Common Plant Name	Scientific Plant Name
adder's tongue fern	*Ophioglossum coriaceum*
arrowgrass	*Triglochin striatum*
bachelor's buttons	*Cotula coronopifolia**
black matipo/kohuhu	*Pittosporum tenuifolium*
black orchid	*Gastrodia cunninghamii*
blackberry	*Rubus fruticosus**
blunt pondweed	*Potamogeton ochreatus*
bracken	*Pteridium esculentum*
broadleaf/kapuka	*Griselinia littoralis*
broom	*Cytisus scoparius**
buckshorn plantain	*Plantago coronopus*
bush lily/kahaka	*Astelia fragrans*
bush rice grass	*Microlaena avenacea*
cabbage tree	*Cordyline australis*
Chilean flame creeper	*Tropaeolum speciosum**
climbing fuchsia	*Fuchsia colensoi*
climbing rata	*Metrosideros diffusa*
common hardfern	*Blechnum minus*
common lawyer	*Rubus cissoides*
common mistletoe	*Ileostylus micranthus*
Coprosma	*Coprosma areolata*
Coprosma	*Coprosma rhamnoides*
Coprosma	*Coprosma rigida*
Coprosma	*Coprosma rotundifolia*
Coprosma	*Coprosma tayloriae*
cotoneaster	*Cotoneaster (various species)*
crown fern	*Blechnum discolor*
curly pondweed	*Potamogeton crispus*

Common Plant Name	Scientific Plant Name
Darwin's barberry	*Berberis darwinii**
duckweed	*Lemna minor**
dwarf mistletoe	*Korthalsella salicornioides*
eelgrass	*Zostera muelleri subsp. novazelandica*
elder	*Sambucus nigra**
fibrous treefern/whekiponga	*Dicksonia fibrosa*
flax/harakeke	*Phormium tenax*
glade fern	*Hypolepis ambigua*
glasswort	*Sarcocornia quinquefolia*
goosefoot	*Chenopodium ambiguum*
gorse	*Ulex europaeus **
grass orchid/onion orchid	*Microtis unifolia*
grasswort	*Lilaeopsis novae-zelandiae*
green bird orchid	*Chiloglottis cornuta*
green daphne	*Daphne laureola**
greenhood orchid	*Pterostylis australis*
ground spleenwort	*Asplenium terrestre*
Hall's totara	*Podocarpus hallii*
hanging spleenwort	*Asplenium flaccidum*
hard treefern/wheki	*Dicksonia squarrosa*
hen and chickens fern	*Asplenium bulbiferum*
holly	*Ilex aquifolium**
horse's mane	*Ruppia sp.*
houndstongue fern	*Microsorium pustulatum*
iceplant/jellybeans	*Disphyma clavellatum*
ivy	*Hedera helix**
jointed rush	*Juncus articulatus*
kahikatea	*Dacrycarpus dacrydioides*
kaikomako	*Pennantia corymbosa*
kamahi	*Weinmannia racemosa*
karamu	*Coprosma robusta*
kiwa kiwa	*Blechnum fluviatile*

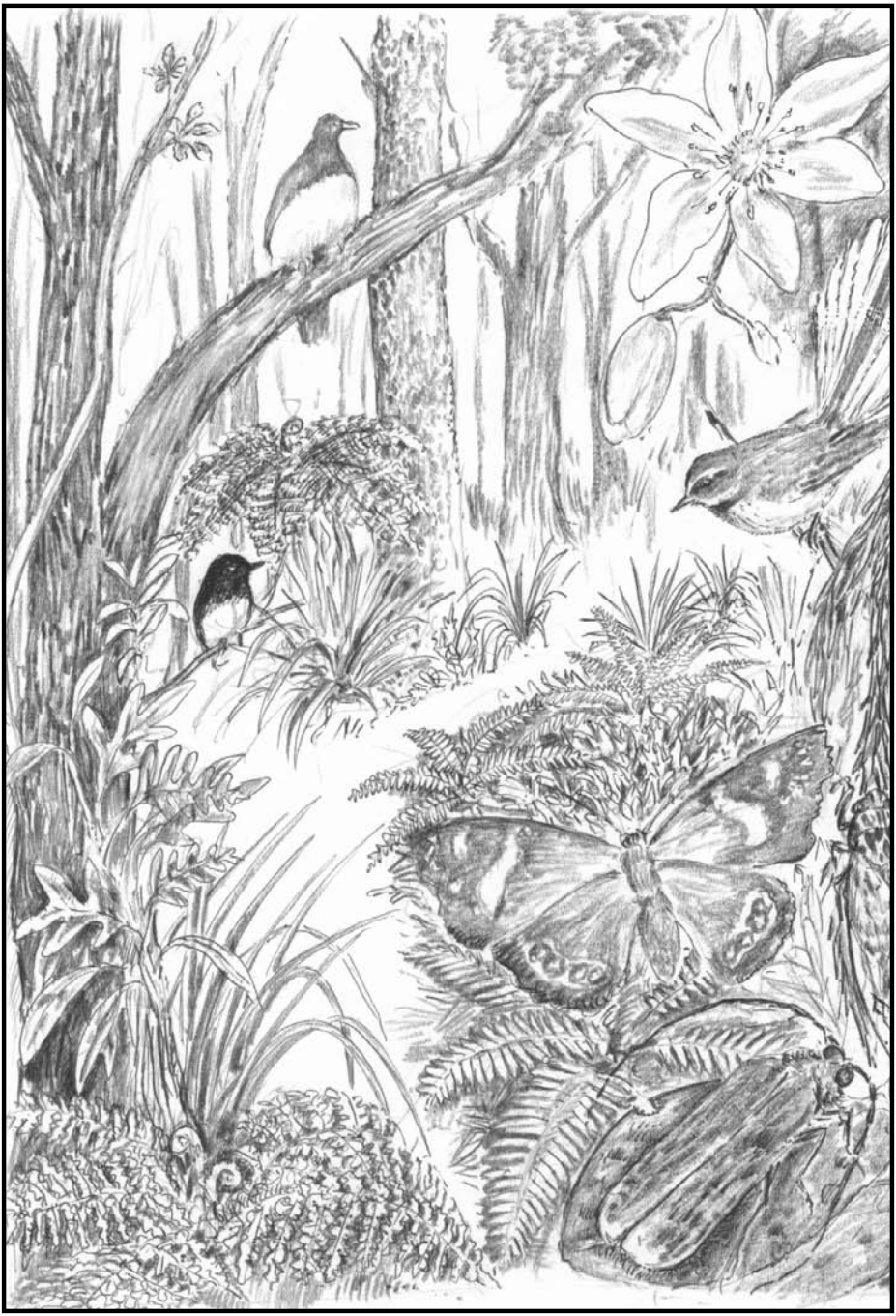
Common Plant Name	Scientific Plant Name
koromiko	*Hebe salicifolia*
lacebark	*Hoheria sexstylosa*
lancewood/horoeka	*Pseudopanax crassifolius*
leatherfrond	*Pyrrosia eleagnifolia*
lemonwood/tarata	*Pittosporum eugenioides*
little hardfern	*Blechnum penna-marina*
lupin	*Lupinus arboreus**
Lyall's spleenwort	*Asplenium lyallii*
male fern	*Dryopteris filix-mas**
manuka/tea tree	*Leptospermum scoparium*
marbleleaf/putaputaweta	*Carpodetus serratus*
marram grass	*Ammophila arenaria**
matai	*Prumnopitys taxifolia*
milfoil	*Myriophyllum triphyllum*
mingimingi	*Coprosma propinqua*
miro	*Prumnopitys ferruginea*
narrow-leaved lawyer	*Rubus schmidelioides*
narrow-leaved mahoe	*Melicytus lanceolatus*
native bindweed	*Calystegia tuguriorum*
native celery	*Apium prostratum*
native clematis	*Clematis paniculata*
native jasmine	*Parsonsia heterophylla*
native musk	*Mimulus repens*
native spinach	*Tetragonia implexicoma*
necklace fern	*Asplenium flabellifolium*
oioi/jointed wirerush	*Apodasmia similis*
old man's beard	*Clematis vitalba**
orache	*Atriplex hastata**
oxygen weed	*Lagarosiphon major**
pate/sevenfinger	*Schefflera digitata*
pepper /horopito	*Pseudowintera colorata*
pingao	*Desmoschoenus spiralis*

Common Plant Name	Scientific Plant Name
pohuehue	*Muehlenbeckia australis*
pokaka	*Elaeocarpus hookerianus*
poroporo	*Solanum laciniatum*
prickly mingimingi	*Cyathodes juniperina*
prickly shield fern	*Polystichum vestitum*
red matipo/mapou	*Myrsine australis*
red pondweed	*Potamogeton cheesemanii*
remuremu	*Selliera radicans*
rimu	*Dacrydium cupressinum*
rohutu	*Neomyrtus pedunculata*
round-leaved lawyer	*Rubus australis*
saltgrass	*Puccinellia sp.*
saltmarsh cotula	*Leptinella dioica*
saltmarsh crassula	*Crassula moschata*
saltmarsh rush	*Juncus gerardii*
sea kale	*Cakile edentula*
sea primrose	*Samolus repens*
sharp spike-sedge	*Eleocharis acuta*
shining karamu	*Coprosma lucida*
shore groundsel	*Senecio elegans*
shore ribbonwood	*Plagianthus divaricatus*
shore spleenwort	*Asplenium obtusatum*
silverweed	*Potentilla anserinoides*
small saltmarsh rush	*Isolepis cernua*
soft treefern/katote	*Cyathea smithii*
southern rata	*Metrosideros umbellata*
spearwort	*Ranunculus flammula**
spider orchid	*Corybas trilobus*
spindle	*Euonymus europaeus**
starwort	*Callitriche stagnalis*
Stewart Island spleenwort	*Asplenium scleroprium*
stinkwood	*Coprosma foetidissima*

Common Plant Name	Scientific Plant Name
sycamore	*Acer pseudoplatanus**
three finger	*Pseudopanax colensoi*
three square	*Schoenoplectus pungens*
toetoe	*Cortaderia richardii*
totara	*Podocarpus totara*
tree fuchsia	*Fuchsia excorticata*
tree nettle/ongaonga	*Urtica ferox*
tupia	*Tupeia antarctica*
tussock sedge	*Carex secta*
tutsan	*Hypericum androsaemum**
water bracken	*Histiopteris incisa*
water buttercup	*Ranunculus trichophyllus*
watermeal	*Wolffia arrhiza*
weeping matipo	*Myrsine divaricata*
wineberry/makomako	*Aristotelia serrata*
wirebush	*Muehlenbeckia complexa*
wiwi	*Isolepis nodosa*

*Introduced or exotic plant

For more informationabout these plants visit
www.nzpcn.org.nz

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