Nature Trail

This trail is set within the gardens and native forest of Ōtari-Wilton's Bush and is designed to give you an insight into a unique New Zealand forest community.

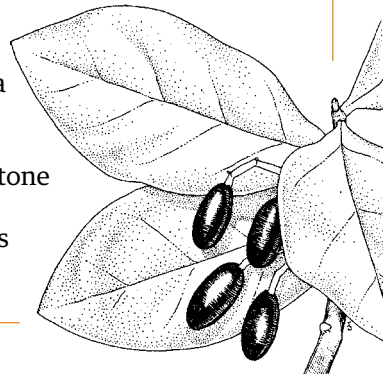
Trail information:

- **The self-guided Nature Trail starts and ends at Tāne Whakapiripiri - Ōtari Visitor Centre**
- **Allow 30-60 minutes to complete the trail**
- **The trail is narrow in places and includes steps. Please keep groups to less than ten people. There is no wheelchair access.**
- **Numbered trail markers (posts) correspond with the numbers in this guide**
- **Guided tours and school visits are available. Bookings are essential - email bookings@wcc.govt.nz**

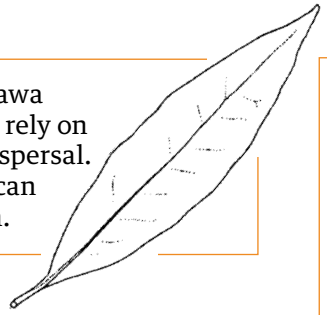
1

At the start of the Nature Trail are karaka *(Corynocarpus laevigatus)* trees. Karaka has dark, glossy leaves and produces small whitish green flowers in spring, followed by large orange fruits.

Small birds like tauhou waxeyes eat the soft outside flesh of the karaka fruit. Large birds such as kererū consume the fruit whole, later ejecting the stone and dispersing the seed. These seeds are poisonous to humans!



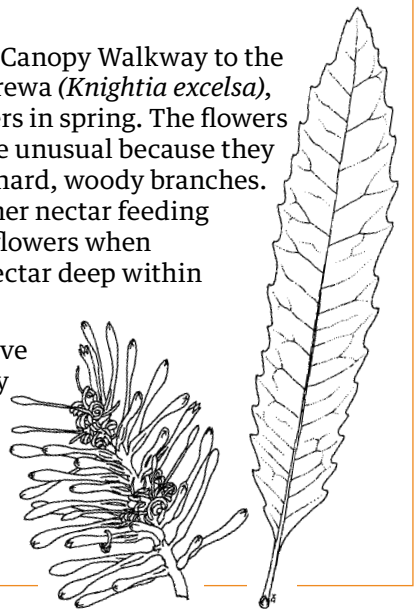
Further along the walkway are tawa *(Beilschmiedia tawa)* trees which rely on the same mode of kererū seed dispersal. Tawa have large black fruit that can be seen from summer to autumn.



2

Continue along the Canopy Walkway to the first seat. The rewarewa *(Knightia excelsa)*, on your right, flowers in spring. The flowers are deep red and are unusual because they are produced from hard, woody branches. Tūī, tauhou and other nectar feeding birds pollinate the flowers when searching for the nectar deep within the flowers.

Rewarewa seeds have wings and are easily dispersed by the wind. The seed capsules remain on the tree for up to one year.



3

Climbing plants get their leaves up into the light without expending time or energy building a trunk. They use trees and shrubs as ladders. A variety of plant-climbing adaptations that can be seen here are:

Attaching roots - akatea or climbing rātā *(Metrosideros perforata)*

Sensitive grasping tendrils - kōhia or New Zealand passionfruit vine (*Passiflora tetrandra)*

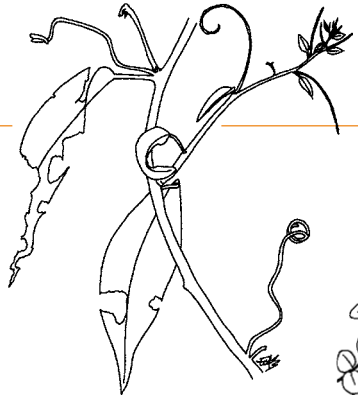
4

Continue on past the second seat on the Canopy Walkway and enjoy magnificent views over the valley and forest areas.

To the right is the original forest area with tall emergent trees. Regenerating forest on the far side of the valley merges into gorse and barberry-covered ridges.

Ecological restoration programmes include controlling possum, stoat and rat populations, and stopping the invasion of weed pests. Reducing possum numbers enables trees to produce more flowers and fruit, encouraging greater bird life and allowing natural forest regeneration.

From here, walk down through the plant collections to Post 5, approximately 130 metres away.



Sensitive grasping tendrils kōhia or New Zealand passionfruit vine *(Passiflora tetrandra)*

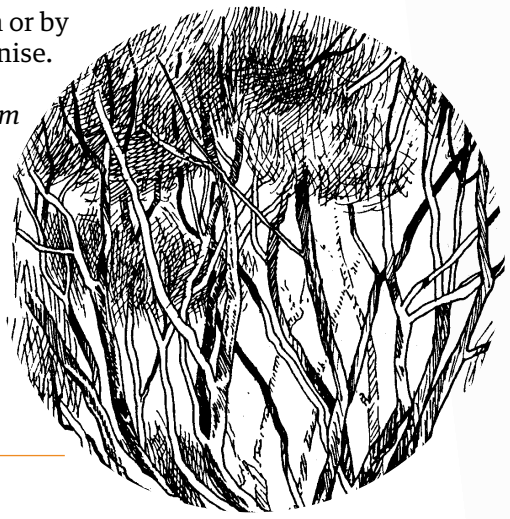
Attaching roots akatea or climbing rātā *(Metrosideros perforata)*

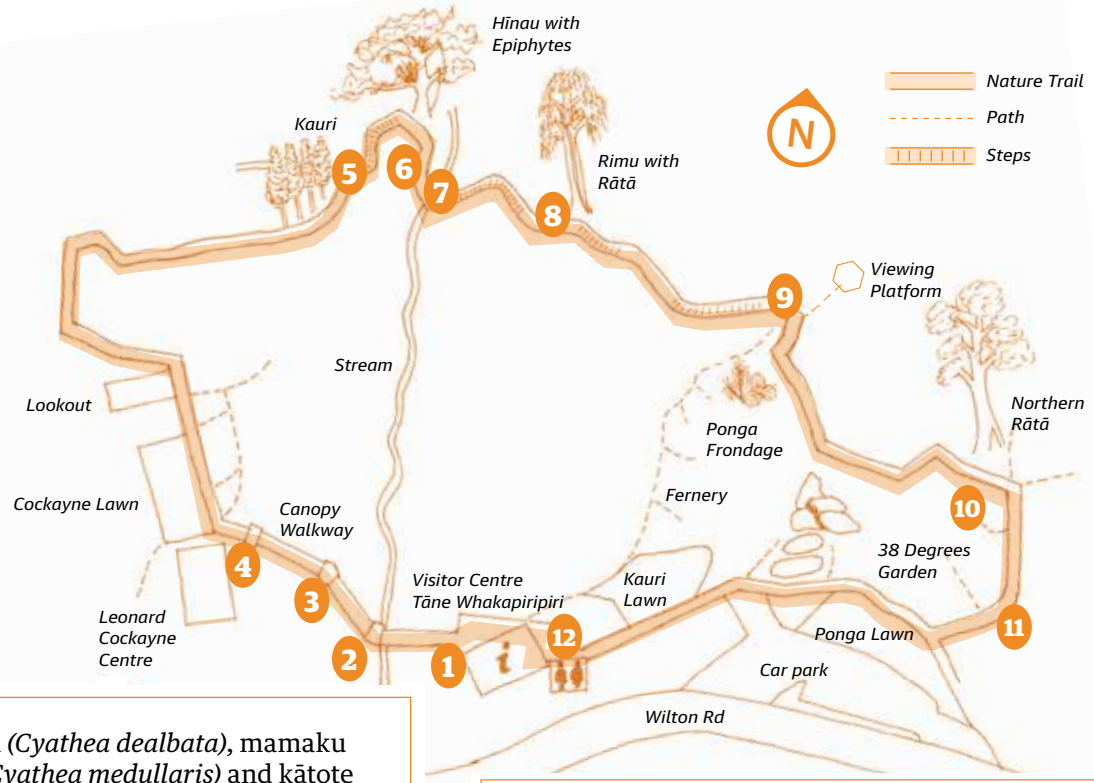
CB01728

5

Where land has been cleared, by man or by natural processes, plants will re-colonise. Colonisers are tough and adaptable plants such as mānuka *(Leptospermum scoparium)* and kānuka *(Kunzea ericoides)*. The canopy here is mostly kānuka, which can withstand the wind and sun in exposed places. These trees will provide shelter for other forest trees to establish. It can take 100 years or more for this process to happen.

Continue down the steps.



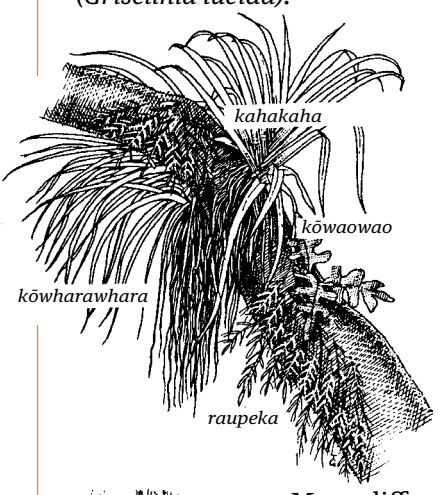


6

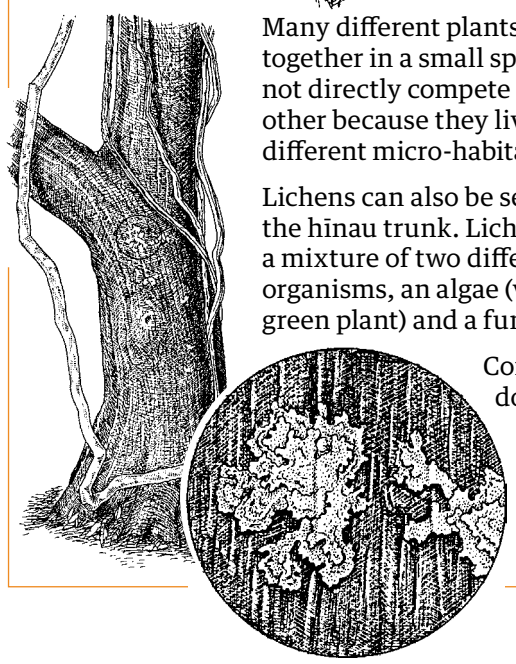
The hīnau *(Elaeocarpus dentatus)* has many epiphytes or perching plants nestled in forks and along branches.

Epiphytes live on their own self-created compost heaps. As the leaves and roots of epiphytes die off, the leaf mould created collects beneath them, supplemented by wind-blown dust.

Common epiphytes seen here are: kōwharawhara *(Astelia solandri)*, kahakaha *(Astelia hastata)*, raupeka or Easter orchid *(Earina autumnalis)* and its relative peka-a-waka *(Earina mucronata)*, kōwaowao or hound's tongue fern *(Lecanopteris pustulata)* and the broad-leaved puka *(Griselinia lucida)*.



Three woody vines are also present: kōhia, akatea or climbing rātā *(Metrosideros diffusa)* and kareao or supplejack *(Ripogonum scandens)*



Many different plants can live together in a small space and not directly compete with each other because they live in different micro-habitats.

Lichens can also be seen on the hīnau trunk. Lichens are a mixture of two different organisms, an algae (very simple green plant) and a fungus.

Continue downhill.

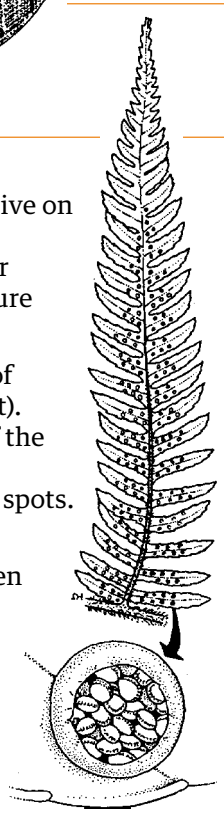
7

Ferns, mosses and liverworts thrive on moist banks, up trees and on the ground. They can survive in drier conditions, but all require moisture to reproduce.

Most ferns reproduce by means of spores formed in sporangia (right). Look closely at the undersides of the fern fronds and you will see sori (clusters of sporangia) in lines or spots.

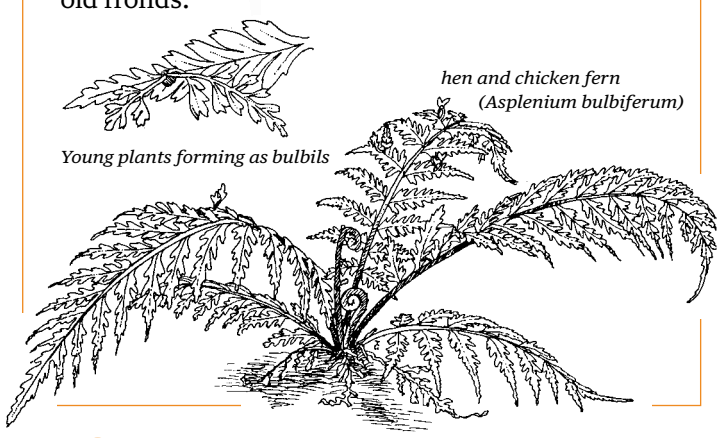
On one side of the track you will find mouku a.k.a. hen and chicken ferns *(Asplenium bulbiferum)*.

The small bulbils, or "chickens"- grow from the leaf surface and will eventually fall to the ground, root and then grow as new plants.



Ponga or silver fern *(Cyathea dealbata)*, mamaku or black tree fern *(Cyathea medullaris)* and kātote or soft tree fern *(Cyathea smithii)* are growing here.

Ponga leaves are silver on the underside, mamaku are green and have a black base to the stipe or leaf stalk. Some tree ferns such as kātote wear skirts of old fronds.



8

An impressive rimu *(Dacrydium cupressinum)* is growing on the left. On average, rimu grow 25mm in diameter every 10 years. This tree is about 1 metre (1000mm) in diameter, making it about 400 years old.

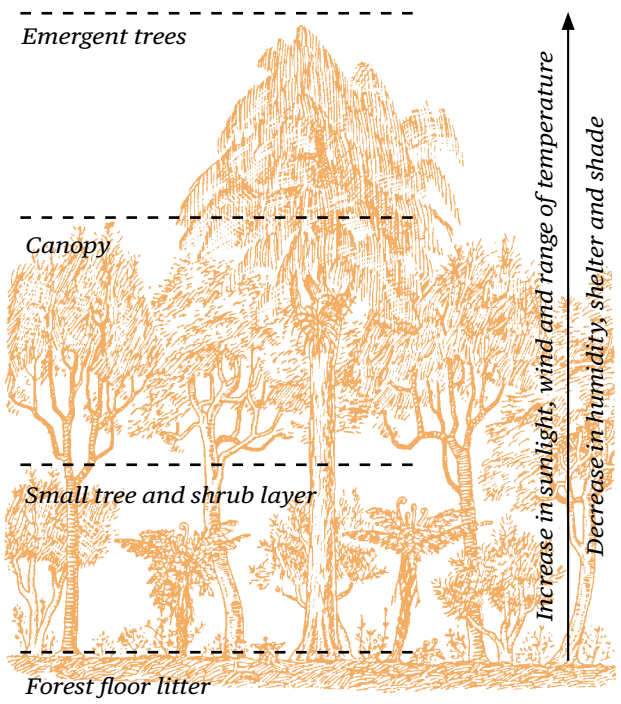
Growing on the rimu is a northern rātā *(Metrosideros robusta)*. Having begun its life as an epiphyte high in the rimu, the rātā has sent roots down to the ground. Eventually these vertical roots become very large and fuse together to form a pseudo-trunk.

A distinctively grooved root of the epiphyte puka can be seen on the other side of the rimu trunk.

Over time, the rātā will obscure some light, which may hasten the death of the old rimu, leaving the rātā to grow as a self-sufficient tree. The outcome can be seen at Post 10.

9

Throughout this area of forest, tawa is the dominant canopy tree.



Shade-tolerant tawa becomes the dominant canopy tree in original forest here at Ōtari.

Rewarewa, which needs more light, is often in advanced regenerating forest where the light levels are higher. Eventually, rewarewa gives way to tawa as the canopy closes in and shading increases.

Here you can see the different layers or strata of the forest. The tall emergent trees are northern rātā, rimu and mataī *(Prumnopitys taxifolia)* and the main canopy tree is tawa.

Lower down in the shrub layer are rangiora *(Brachyglottis repanda)*, hangehange *(Geniostoma ligustrifolium)*, and tree ferns. The forest floor is dominated by numerous species of ferns.

Birds and insects, like the plants, also live in different layers of the forest. Kererū, tūī and tīwaiwaka can often be seen in this area.

Leaf litter and rotting logs carpet the forest floor. Many organisms make this decaying plant material their home. In moist weather, fungi such as toadstools or puffballs can be seen among the leaf litter and bracket fungi spread on the logs. These fungi or "saprophytes" do not need sunlight to make food. They obtain their food from plant litter, breaking it down or decomposing it, and slowly returning the nutrients to the forest trees.

Continue uphill and follow the Nature Trail sign posts to Post 10.

You will pass through the Ponga Frondage and enter the 38 Degrees Garden. This area under tall forest trees was badly damaged in the Wahine storm in 1968 and also in 2013.

The destruction of many trees here from the storm damage created an opportunity to turn the understory into gardens. You can still see where some of the tall trees were damaged by the storm.

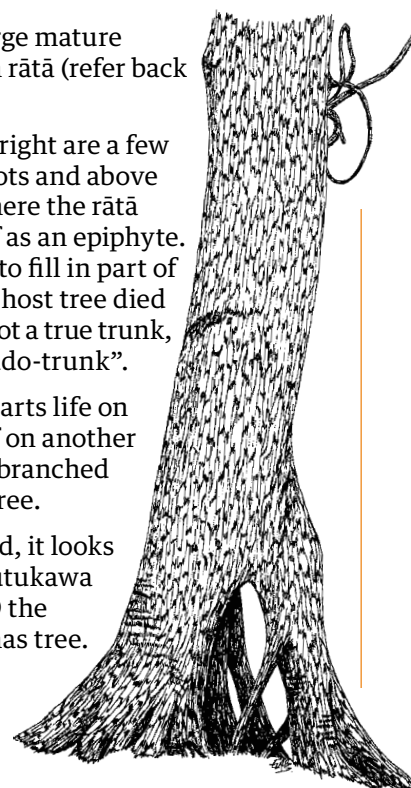
10

Here you can see a large mature specimen of northern rātā (refer back to Post 8).

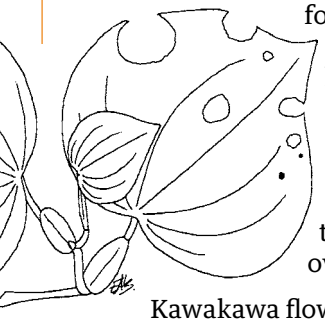
Look up. High on the right are a few spindly secondary roots and above them on the left is where the rātā first established itself as an epiphyte. The roots have fused to fill in part of the gap left when the host tree died and decayed. This is not a true trunk, it is known as a "pseudo-trunk".

If the northern rātā starts life on the ground instead of on another tree, it forms a multi-branched large shrub or small tree.

Growing in the ground, it looks somewhat like a pōhutukawa *(Metrosideros excelsa)* the New Zealand Christmas tree.



11



Kawakawa is a common plant found in lowland forest areas. Notice that the leaves are riddled with holes caused by small, native looper caterpillars. They usually feed at night, but can often be found in the late afternoon or on an overcast day.

Kawakawa flowers are small and inconspicuous. Some native plants have highly scented flowers. A great example of this is toropapa (*Alseuosmia spp.*) which can be found planted nearby.

Pollination can occur by wind. *Coprosma* species, as well as grasses and other plants, have flower parts that hang in the wind. Conifers like rimu and mataī are also wind pollinated. Plants with coloured flowers and/or nectar, such as bright red rātā, are mostly pollinated by birds and bees.

Turn left onto the broad main path and follow the Nature Trail sign posts past the Alpine Garden and back toward Tāne Whakapiripiri, our Visitor Centre.

12

Post 12 is located on the timber fence on the right. The tōtara to the left of Post 12 is one of the many New Zealand conifers planted in this area. Conifer means “cone bearing”. Pollen from small male cones is dispersed by wind to pollinate the larger female cones.

Conifer seeds generally develop between the woody scales that make up the cones. Kauri has prominent, round cones similar to northern hemisphere pines.

In contrast to kauri, the unusual feature of many New Zealand conifers is that the female cone is not prominent. Instead their seeds develop with a berry-like structure.

This adaptation is a globally rare strategy that has evolved in conifers to attract birds to the seeds. Birds swallow the seeds along with the berry-like structure and deposit the seed elsewhere. Rimu, miro, mataī, tōtara and kahikatea are examples of conifers with this strategy. All these trees can be seen here in the Conifer Grove.

Another feature of conifers is their distinctive leaves, often small and needle-like or scale-like, apparent on many of the trees in this area.

Birds

During your walk here, we hope you have seen and heard a variety of birds. A healthy and diverse bird population is an indicator of a healthy forest environment. Birds you might have seen include:

Native birds

- tīwaiwaka
- tauhou
- kererū
- tūī
- kākā
- korimako
- kākāriki
- kārearea
- kōtare
- pūtangitangi
- pīpīwharauroa

We hope you enjoyed your visit.

Each time you visit, you are likely to see something you missed the time before.

It’s one of the pleasures of returning. Come again soon!

Haere rā, ka kite anō!

Ōtari-Wilton's Bush
Nature Trail
Te Ara Koukouoro

Wellington Gardens

Absolutely Positively **Wellington** City Council
Me Heke Ki Pōneke