

**FOLLOW  
THE  
BLUE  
MARKERS**

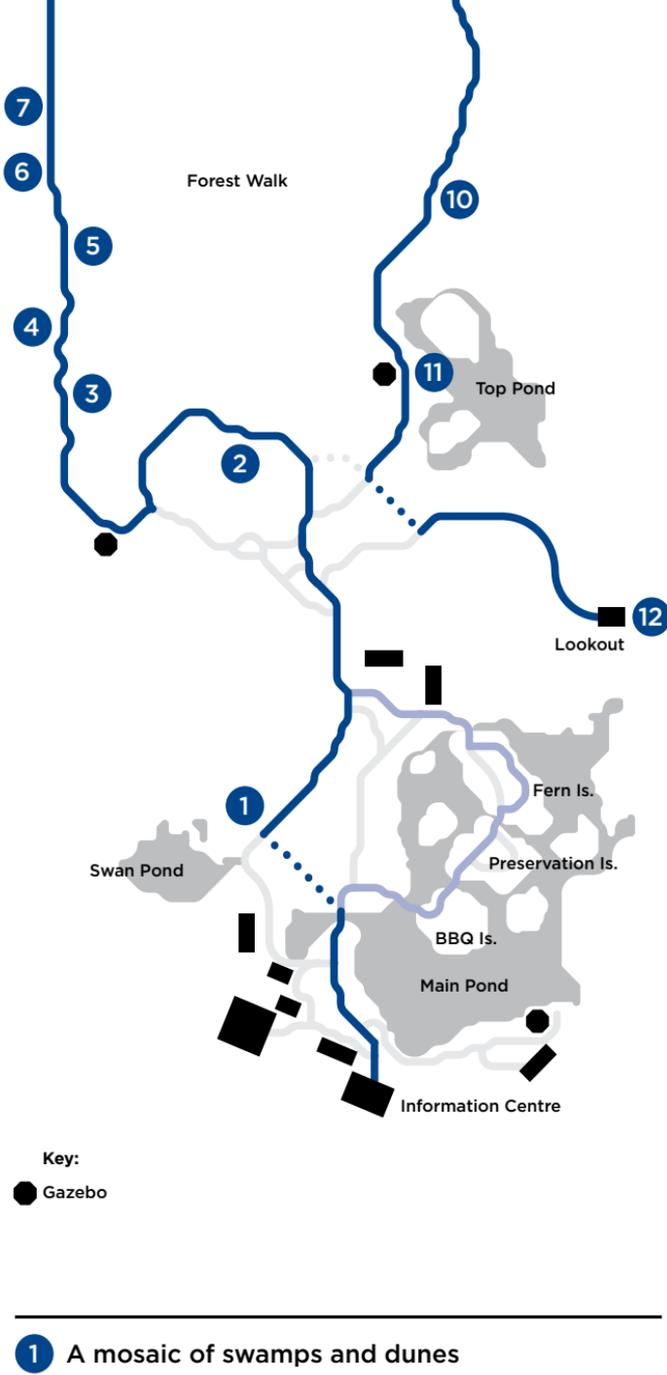
# Humps and Hollows Trail

## Explore Ngā Manu's dunes and swamps



### Humps and Hollows Trail

#### Follow the blue markers



- 1 A mosaic of swamps and dunes**  
As you look across the waves of rautahi/cutty grass (*Carex geminata*) and beyond to the distant bush-clad slopes it is easy to forget that Ngā Manu is an isolated bush remnant. Once, this swamp forest extended the length of the Kāpiti coast, growing in the wet hollows between the dry dunes which cover the land from sea to hills. What you glimpse here are some of the species which have survived – harakeke/flax (*Phormium tenax*), tī kōuka/cabbage tree (*Cordyline australis*), and the tall kahikatea.
- 2 Kohekohe** *Dysoxylum spectabile*  
This is the dominant species of the coastal hills, and is common at Ngā Manu. Kohekohe is unusual among New Zealand species because it produces flowers directly from its trunk and branches. In early winter the forest fills with its delicate vanilla scent.
- 3 Kareao/Supplejack** *Ripogonum scandens*  
As you descend from the ancient dune into the cool damp swamp forest the plant types change. Above you a tangle of black vines – supplejack – climbs up into the canopy; around your feet, the graceful **hen-and-chicken fern/manamana** (*Asplenium bulbiferum*). The ‘chicks’ growing on the fronds of the fern will drop to the ground to become new plants.
- 4 Nīkau** *Rhopalostylis sapida*,  
**Kahikatea** *Dacrydium dacrydioides*  
The nīkau is the world’s most southerly palm and takes 15 to 20 years to develop a trunk. Each circle around its trunk is a scar where the leaf base was attached. The massive trunk behind you belongs to an ancient kahikatea which is estimated to be about 400 years old. Will you touch an older living thing today?
- 5 Kiekie** *Freycinetia banksii*  
Imagine trying to clamber through kiekie – its woody stems and serrated leaves forming a dense tangle across the ground. The vine produces a sweet creamy fruit, and its leaves are highly prized as a weaver’s resource. Below the vines, **brown mudfish** (*Neochanna apoda*) survive in the fluctuating habitat. When it floods the fish swim around and breathe through their gills, but as it dries out, the fish rest in the mud and breathe through their skin.
- 6 Pukatea** *Laurelia novae-zealandiae*  
Like the brown mudfish, pukatea have adapted to a dynamic environment. Sometimes its roots are underwater, sometimes in the dry. To cope with these extremes, pukatea have developed breathing roots which grow above ground to take in air – even when the soil is flooded. You can see one of these roots in the middle of the track. Can you figure out the tree to which it belongs? Behind the seat are some young pukatea with their shiny tooth-edged leaves and square red-black stems.
- 7 Whekī** *Dicksonia squarrosa*  
A whekī grove is a network of underground roots with each new tree fern connected to its community. You can see this connection here, at the side of the track edge, where the shared root of three whekī is revealed. Whekī is sometimes referred to as ‘rough tree fern’, its coarse trunk being a great place for seeds of other plants to become lodged and start their own lives.
- 8 Kānuka** *Kunzea ericoides*  
No-one knows why the trunk of this old kānuka is so twisted, but maybe its contorted form is the clue as to why it has survived – such warped timber would be very hard to cut. Kānuka is valued as a nursery species because it is one of the first to re-establish itself after a fire or grazing. It also offers protection for other slower-growing species.
- 9 Akapuka** *Griselinia lucida*  
Over hundreds of years the landform features which the forest is growing upon have lost their definition – the high dunes have flattened out and the swampy depressions have been in-filled. Here we are standing on an ancient dune and the tree species reflect this. The canopy is dominated by kohekohe and tawa (*Beilschmiedia tawa*). At the track edge is a kohekohe with a mammoth akapuka living in its branches. The fissured cables of the akapuka roots twist around the kohekohe trunk down to the earth.
- 10 Maire Tawake/Swamp Maire** *Syzygium maire*  
Maire tawake is endangered because it is dependent on the water-logged soils typical of lowland swamp forest – an increasingly rare habitat. But this species is now facing an even more pressing threat from myrtle rust disease, which was first recorded in New Zealand in May 2017. This fungal disease has the potential to wipe the species out. Like the pukatea, it has evolved breathing roots which stick up out of the wet ground and enable it to take in oxygen.
- 11 Retoreto/Azolla** *Azolla rubra*  
This tiny red floating plant is not an algae but a floating fern called azolla, which starts out green and turns red in the sun. There are two species on our pond. The native retoreto/azolla rubra can form, when conditions are favourable, a dense carpet in a very short space of time.
- 12 Lookout Tower – the overview**  
During the last great sea level rise, water covered this land. When the sea receded, pumice sand from volcanic eruptions was blown ashore to form dry sandy dunes with swamps between. From here, you can get an overview of the Ngā Manu forest within the wider landscape of humps and hollows. Our forest remnant is only four hectares, but its ecological significance is recognised nationally. The persistence of this precious remnant is reliant on the underground flows of water ...but that’s another story!

The Humps and Hollows Trail ends here – you can wander along other forest paths or head back to the Information Centre (turn left just after red Station 12).