

Discover TŌTARA PARK SELF-GUIDED WALK

NAU MAI HARAE MAI

This self-guided walk starts from the entrance to Tōtara Park at the end of Wairere Road, following a looping path along part of the Puhinui Stream Forest Trail.

The numbered points on the map are associated with suggested activities and the following notes.

Please remember to
'Take nothing but memories, leave nothing but footprints'
'Haria ko ngā maharatanga anake, waiho ko ngā tapuae anake'.

1. On the seats under the large tōtara tree

This is a great place to think about why trees and forests are so important for people and wildlife. The 'FORESTS' mnemonic is a handy way to discuss ideas: F: Forests provide food for people and animals for example seeds, berries, nectar and leaves for birds and insects; forest plants and animals become part of food chains that form complex food webs. O: Forests are often called 'the lungs of the earth', releasing oxygen required by other living things. R: Forests are an important part of the water cycle, absorbing water through their roots, releasing it through their leaves, recycling it back into the atmosphere. E: There are lots of ways that people enjoy forests e.g. walking and cycling through them and climbing trees! S: Forests provide a shady habitat for plants and animals to live. T: Forests provide people with a number of useful things including materials for building and medicine. S: Tree roots stop soil erosion, this helps to prevent slips and keep waterways clean.

2. In the grove of young tōtara trees

Tōtara are dioecious, they have separate male and female trees. In autumn, the female trees produce a green seed that sits in a juicy red base, this was a valued food source for Māori. You might spot birds feeding on the fruit in between March and May, and bees collecting pollen from the cones of trees between September and October. Spiders make their home in amongst the flaky bark and a 2cm long horn beetle is sometimes found on dead and dying twigs.

3. Under the larger tōtara trees

Mature tōtara take over 100 years to reach 30m tall. A tree that had been carefully selected to make a waka would have been felled using stone axes with the help of small fires set near the base of the trunk. The huge log was hollowed out with stone tools and fire, before being further shaped and carved using greenstone chisels. The forest was a spiritual place for Māori. A special ceremony would have been performed before removing a tree to give thanks to Tāne, the god of the forest.

Tōtara e tū whakahirahira nei, Ko koe I tohia mai, Hei rākau mahi I o mātou waka nui, Kia whakareireia koe ki te whakairo, Ko tō hiako hei kete pupuri kai, Ka mihi atu.

Tōtara so tall and strong, You were chosen as the log from which we will make our great canoe, May your wood be dressed with elaborate carving, And your bark be fashioned into receptacles in which we will keep food, Thank you.

4. Next to the rimu, before entering the forest track

Rākau Rangatira

Tū Teitei I te Wao Nui

Ki te Kore Koutou

Mā Wai e Mihi te Rā

Chiefly Trees

Standing Tall in the Forest

Without you

Who will greet the Sun

The wood of tōtara, rimu, miro, mataī, kahikatea and kauri was highly valued by European settlers to make furniture, fence posts, building supports, railway sleepers, telegraph poles and much more. Traditional uses by Māori include: the soot of kahikatea heartwood used in tāmoko (traditional tattooing); the inner bark of rimu pulped and applied to burns; the gum from miro used to stop bleeding and heal ulcers; and timber from mataī and kauri used for carving.

5. Before and after you enter the forest

Asking students to notice the differences they feel between standing in the more open park environment and when under the forest canopy is a great sensory activity. The forest may feel cooler or more humid depending on the wind; they may notice the noises made by birds and rustling leaves; there will be a difference in light as it's filtered through forest layers; and the air may have a fresh smell about it.

6. On the bank of the Puhinui Stream

This is a good spot to stand quietly and look to see if you can see anything living in the stream for example tuna (eels). The plants growing on the bank of the stream and the forest canopy above help to keep the stream shaded and cool, and their roots help prevent soil erosion and silt building up in the water. Stream-dwelling animals need cool, clear, clean water to survive. Murky or polluted water can clog up the gills of freshwater insects and fish.

7. At the end of the track next to the stream

The small waterfalls and rocky pools provide safe access to dip your hands or toes into the water to feel its temperature. Cool flowing water has more oxygen dissolved in it, which is beneficial to the animals living in it.

Climb up the steps (count how many there are!) before taking a rest at the top...

8. Listen for birds at the clearing on the left at the top of the steps

This is a lovely spot to catch your breath and sit quietly to observe and listen for birds. You may hear the noisy chattering of eastern rosella or rainbow lorikeets. Although pretty to look at and fun to watch, these are non-native birds, originally from Australia. They are a threat to our native birds as they compete with them for food and nest sites. Visit doc.govt.nz/nature/native-animals/birds to listen to birdcalls, and nzbirdsonline.org.nz is a great online tool for helping identify what you see.

9. Along the track on the left is a large pūriri tree to investigate

The holes in the branches and trunk are created by the pūriri moth caterpillar. Adult moths may emerge at any time of year, but the most common season is October–December. The tree flowers and fruits throughout the year, but particularly in winter, providing an important food source for birds. The fruit is popular with kererū, tūi and kākā, with smaller native birds and insects visiting the flowers for nectar. Māori used the infusions of the leaves to bathe aches and sprains and to treat ulcers and sore throats. A yellow dye was extracted from the bark to colour weaving. The wood is extremely strong and durable and was used for piles, fencing, bridges and railway sleepers. To grow from seed, soften the coating with boiling water and soak overnight before planting.

10. In the clearing next to the sign for the taraire trees on your right

Taraire is a common tree in the park and can reach 20m tall. In autumn, the large purple fruits are enjoyed by kererū. The fruit kernels are edible but take a lot of processing, Māori used to cook them for a few days in a hāngi. If you are looking for creatures in the leaf litter use a guide to help e.g. Andrew Crowe's Life-Size Guide to Insects and Other Invertebrates.

11. In the nīkau grove on your right

The nīkau grove is a great place to study forest layers and the ways in which plants find sunlight. Light is needed by plants to photosynthesize, the process by which plants make their own food using light energy, water and carbon dioxide. Plants that find an opening in the canopy and receive more sunlight can grow faster than others. Epiphytes are plants that 'piggy back' onto the trunks and branches of tall trees so that they can absorb sunlight efficiently. For information more on the structure of conifer-broadleaf forests visit teara.govt.nz/en/conifer-broadleaf-forests.

12. At the T-junction and en route back to the park entrance

The walk back to the park entrance takes about 15 minutes from here. You might like to stop and reflect on the things you've discovered and discussed on your walk today, including how people can help to protect the biodiversity of forest and stream ecosystems. One important way to protect and increase the number of our native species is to control pests including possums, rats, ferrets, weasels, stoats and hedgehogs because they cause havoc in forest ecosystems by eating leaves, berries, flowers, insects, eggs, chicks and even adult birds. Forests with good pest control have higher populations of native animals and a greater diversity of plants. Visit predatorfreenz.org or pestdetective.org.nz to find out how you could help control pests in your own backyard or join a local group to help.

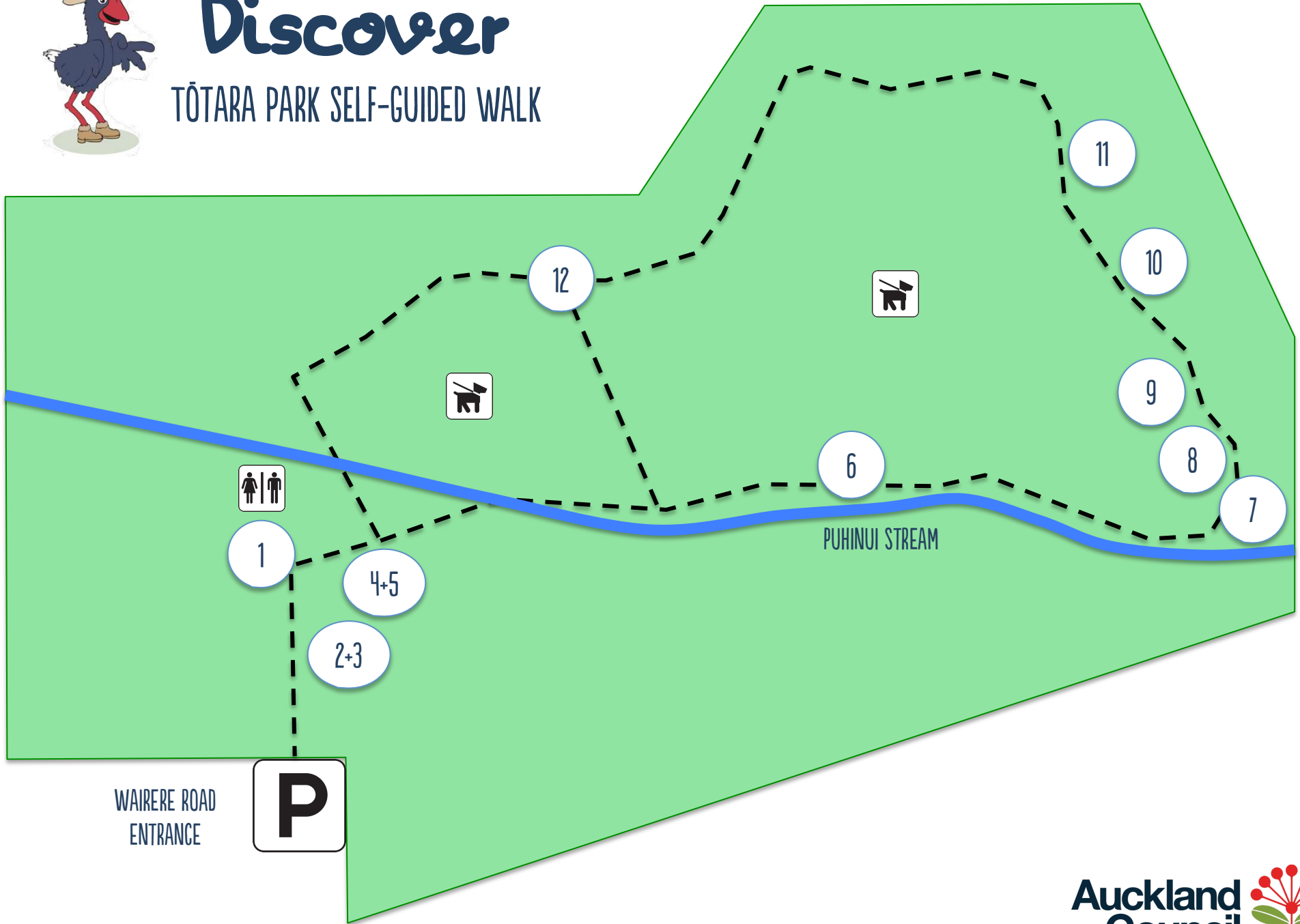
TOP TIPS FOR VISITING

- This self-guided walk has been designed to take 2 hours at a moderate pace.
- Bring a wildlife guide to help you identify what you see.
- Insect repellent could be handy to avoid mosquito bites.
- There is a lot to see and experience in the park, for example mountain bike tracks, the free outdoor pool in the summer months and the adventure playgrounds. Find out more: visit aucklandcouncil.govt.nz
- To find out how to get involved with projects led by the Friends of Tōtara Park please email: mylocalpark@aucklandcouncil.govt.nz
- To report a problem please go to aucklandcouncil.govt.nz/report-it or call 09 301 0101.



Discover

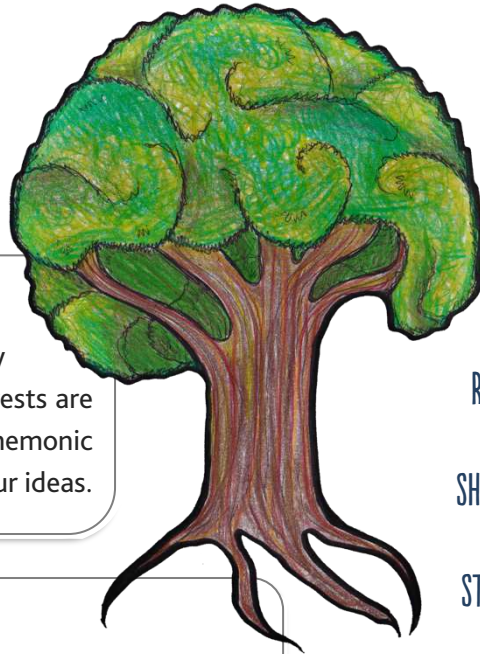
TŌTARA PARK SELF-GUIDED WALK



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The native bush at Tōtara Park is an example of the rich variety of vegetation that once covered South Auckland. On your walk today you'll learn more about the importance of forest ecosystems, visit the Puhinui Stream and find out about the special plants and animals that live here.



A handy forest mnemonic

FOOD
OXYGEN
RECYCLING WATER
ENJOYMENT
SHADY PLACE TO LIVE
THINGS TO USE
STOPS SOIL EROSION

1 – WHY ARE TREES AND FORESTS SO IMPORTANT?

The seating under the large tōtara tree is a lovely place to stop and think about why trees and forests are so important to people and wildlife. Use the mnemonic in the middle of this page to help you discuss your ideas.

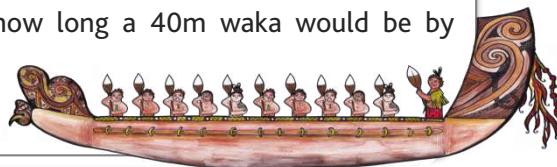
2 – INVESTIGATING TŌTARA TREES

Take a closer look at the young tōtara at the entrance to the park. What do their leaves and bark feel like? Can you spot any animals living on the trunk or visiting the trees? Look for bright red fruit in autumn, they are safe and tasty to eat and attract birds such as tūi.

3 – TŌTARA TIMBER

Huge Māori waka taua (war canoes) up to 40m long and capable of carrying 100 warriors were hollowed out from a single tōtara log. Imagine trying to cut down a tree without electrical or metal tools – how do you think it would have been done? Can you estimate how long a 40m waka would be by stepping out using large paces?

Can you see any trees that tall nearby?



4 – GIANTS OF THE FOREST

The types of conifer that include tōtara, rimu, miro, mataī and kahikatea (our tallest species of native tree) are called podocarps. The timber of many of these trees was highly valued by Māori and European settlers. What do you think they used the wood for? Can you identify any podocarp species growing nearby?

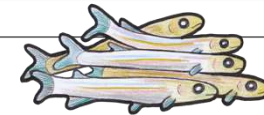
Did YOU KNOW? You can comb your hair with a rimu leaf? Find a leaf strand from the floor, hold both ends firmly then stroke it through your hair!



5 – FEEL THE DIFFERENCE

Before you enter the forest, take a moment to notice the environment around you. Compare the difference in sunlight, temperature, noise and wind before and after you enter the forest. Close your eyes and take a long deep breath through your nose. Does the air smell different in the forest than outside of it? What other differences can you feel?

6 & 7 – WHAT'S LIVING IN THE PUHINUI STREAM?



The Puhinui Stream is about 12km long, running from its source in Tōtara Park, then through the Botanic Gardens before winding its way down to the Manukau Harbour. You might spot tuna (short or long-finned eels), inagna (whitebait/juvenile fish), common and red-finned bully, banded kokapu and kōura (freshwater crayfish). These animals need the water to be clean, clear and cool to survive. How do you think the surrounding forest helps to keep the stream clear and cool? What could you do to help keep our waterways clean?

Did YOU KNOW? Young eels (elvers) migrate upstream to find suitable adult habitat. After many years they return to the Pacific Ocean to breed and die.

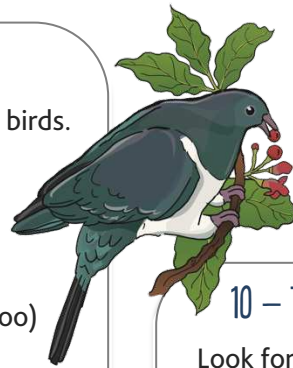


8 – TE TAUTU MANŪ – BIRD SPOTTING

Have a rest at the top of the steps and take 5 minutes to look and listen for birds. Close your eyes and each time you hear a new bird call hold up a finger. How many different native birds can you identify?

- | | |
|--|--|
| <input type="checkbox"/> tauhou (silvereeye) | <input type="checkbox"/> kererū (wood pigeon) |
| <input type="checkbox"/> riroriro (grey warbler) | <input type="checkbox"/> pīpīwharauoa (shining cuckoo) |
| <input type="checkbox"/> pīwakawaka (fantail) | <input type="checkbox"/> kākā <input type="checkbox"/> tūi |

Which bird could you probably hear calling in the forest at night?

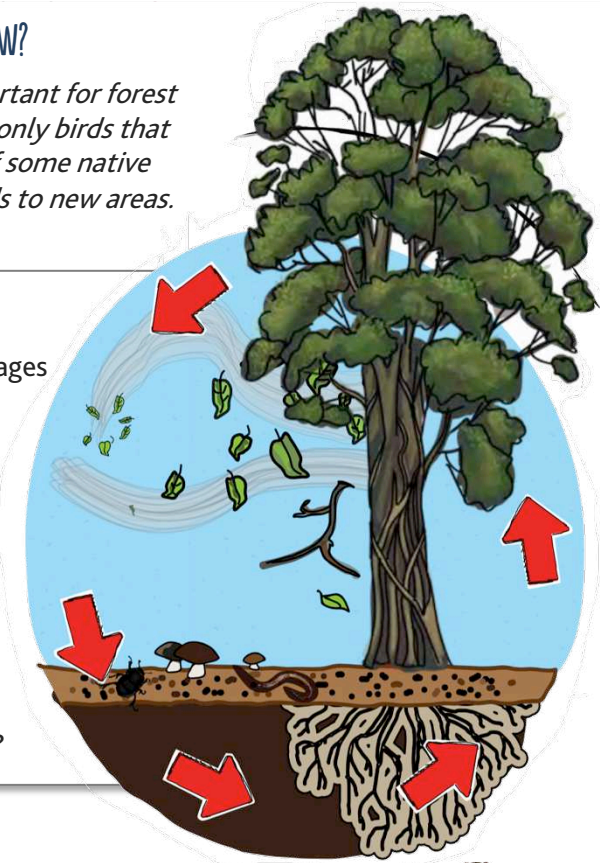


Did YOU KNOW?

Kererū are especially important for forest ecosystems, they are the only birds that can eat the large fruit of some native trees, spreading their seeds to new areas.

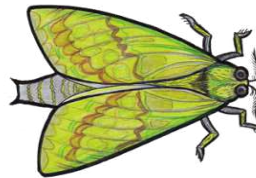
10 – THE LIFE CYCLE OF A LEAF

Look for taraire leaves at different stages of decomposition. Find a green one that's recently dropped, a brown one and one that is very decomposed. Decomposers including millipedes, slaters, worms and beetles break down the leaf litter, turning it into rich soil that can be used to help forest plants grow. Can you find any decomposers living under the leaves?



9 – INVESTIGATING A PŪRIRI TREE

A little further along the track you'll find a large pūriri tree. Tūi and kererū visit to feed on its flowers and fruit. The trunk and branches are riddled with holes made by ngutara (pūriri moth caterpillars) that live inside for up to 7 years before emerging as large green moths.



Did YOU KNOW?

Pūriri moths can have a wingspan of 15cm!

11 – FINDING LIGHT IN THE FOREST

The nīkau grove is a great place to observe different forest layers and the ways that plants compete for space and light to grow.

Look for nīkau seedlings on the forest floor in patches of light where they can grow faster than others. Use your body to create the shapes of a seed, seedling, young plant and a tall nīkau palm.

Did YOU KNOW? It takes nearly 100 years for a nīkau palm to reach 10-15m.



12 – BECOME A PEST DETECTIVE

Look out for coloured tags on trees that help park rangers and volunteers identify where they've placed tracking tunnels and traps to identify and catch pests including rats, possums, and ferrets. Why do you think it's important that pests are controlled?

You can become a pest detective by visiting pestdetective.org.nz where there are lots of fun activities and resources to download.



The tree is a habitat for lots of other animals, For example, can you see any spiders on the trunk?

Look on the ground for fallen flowers, leaves and seeds. The seeds look like small black stones. You could take some home to grow, you'll need to be patient though as seeds can take 6 months to germinate in warm weather.

Use these words to play a game of Te Rākau I-Spy.

- | | |
|-------------------|-------------------|
| hua – berry | pakiaka – roots |
| kākano – seed | putiputi – flower |
| kiri rākau – bark | rākau – tree |
| manga – branch | rau – leaf |
| ngahere – forest | tinana – trunk |

