

PELORUS BRIDGE FIELD TRIP

Introduction

Pelorus Bridge Scenic Reserve is one of the most accessible examples of mature native forest in the Marlborough region. This site is ideal for groups that want to study birds, pests, or rivers and begin learning about forest ecosystems and trees in particular. Some simple plant identification techniques can be taught and there is also potential to talk about the exploration and exploitation of the land by Māori and early European settlers. The river provides swimming and kayaking opportunities.

Skills that are developed at this site:

- Bush studies and revegetation principles.
- Kayaking, orienteering and general outdoor skills.
- Longer tramps and mountain biking nearby.

Site information

Natural history

The forest is mature lowland forest with large mataī, kahikatea, rimu, tōtara and miro trees as well as red, silver, black and hard beech trees. A complete understory exists. It includes kāmahi, tawa, lancewood, hīnau and pigeonwood with many ferns, epiphytes, mosses, lichens and liverworts. Birds that use the area include kererū (NZ wood pigeon), bellbirds (korimako), tūi, grey warblers (riroriro) and fantails (pīwakawaka). Less easily seen but worth keeping an eye out for are brown creepers, parakeets (kākāriki) and kākā. At night, moreporks (ruru) and bats may be heard. Around the river you may see kingfishers (kōtare) and little shags (kawau-paka).

In the river there are native and introduced fish species, although the native species are usually nocturnal and secretive. You may see a trout if the water is clear enough.

Settlement history

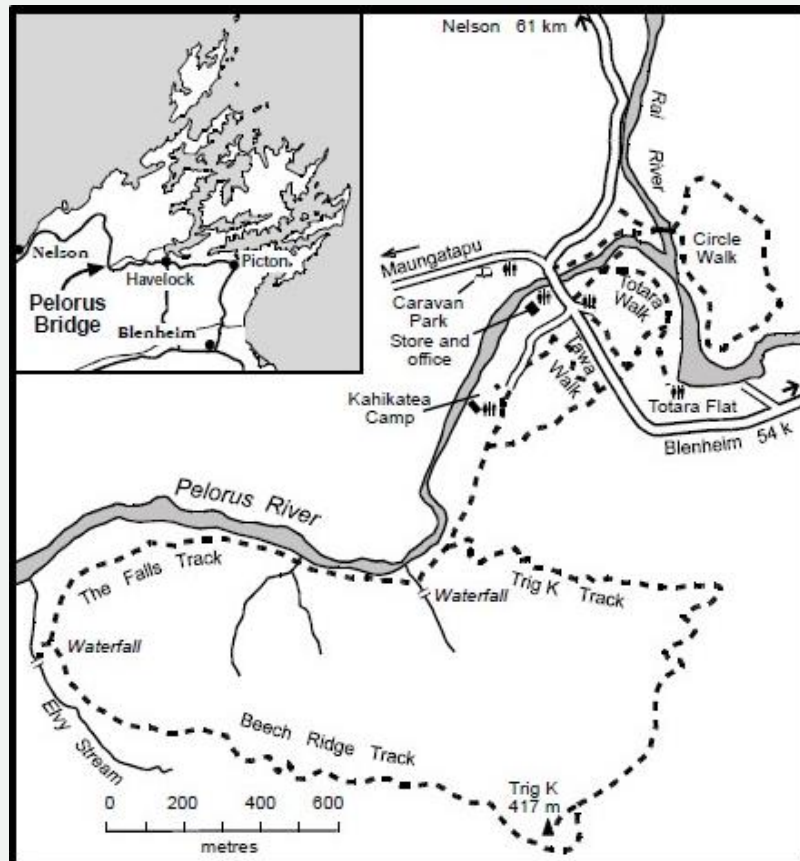
History tells us that several different iwi (tribes) have occupied this area. The first Europeans to arrive in 1834 found a few remaining Māori producing flax for Te Rauparaha. The route to Nelson over the Maungatapu Saddle took travellers past the site and after the Rai Saddle route was discovered, the first

bridge was built around 1860. The present bridge was built in the 1950s and it was intended to be the site of a new township. The plans were deferred, and in the early 1900s, the designation of Pelorus Bridge was changed to preserve the scenic values of the reserve.

How to get there

Pelorus Bridge Scenic Reserve is located 18 km from Havelock on State Highway 6, between Havelock and the township of Rai Valley.

Site map



Site facilities

- Parking – ample space for buses and cars.
- Wheelchair access is good with bush tracks suitable for wheelchairs.
- Toilets are excellent.
- Picnic areas, tearooms and water are available on site.
- A variety of easy tracks and good quality bridges (while the tracks near the bridge are easy and jandals would be adequate, if you are venturing up the more remote tracks sturdy footwear is required).
- Information panels.
- Open spaces for games.



Site safety

- Deep flowing river water – all necessary precautions should be taken when near the water.
- Wasps – Particularly during the summer months and further away from the main visitor area. It is advised to carry antihistamines.
- The main road and bridge – the bridge is heavily used and single lane. Take extreme care when crossing the main highway.
- Swing footbridge crossing the Rai River – do not allow intentional bouncing. Jumping off either bridge is not permitted.
- This is a high-use public area. Ensure you have adequate supervision.

Activities

Pre-trip classroom preparation

As an introduction to your visit to Pelorus Bridge you might like to get the students learning about forests, reading simple maps, and doing observational drawings.

To learn about widespread New Zealand native trees, use our “[Experience native trees in your green space](#)” resource.



4. EXPERIENCE NATIVE TREES IN YOUR GREEN SPACE
Explore and investigate plants and trees in your green space using the  **Experiencing native trees in your green space resource**

Things to bring (all activities):

- Paper and pencils for sound map drawings.
- PVA glue and black paper (for leaf pictures activity).
- Enough blindfolds for one between two.
- Some examples of real estate advertising jargon (e.g., Property Press).
- Tree identification books.

Sound map (from Cornell)

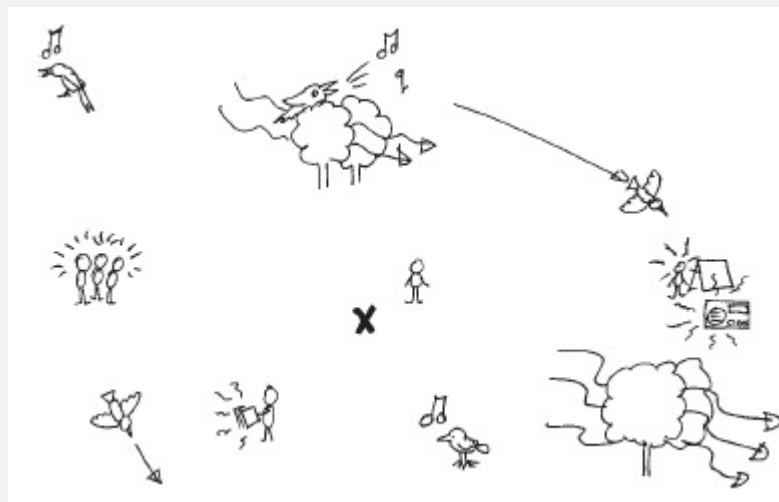
You will need a piece of paper or card and a pencil for each person. This activity works well when arriving in a new area and before the group has their bearings. It can also be used as a comparison between sites.

Most people are familiar with ordinary maps that graphically represent reality mapped on two-dimensional paper. In this activity we want you to “map the sounds” you hear in the area. Of course there are no firm conventions to use

when creating a sound map – so encourage inventiveness. A birdcall might be drawn as a musical note, or it might be a picture of the bird. Traffic noise could be drawn as a series of wobbly lines or as a vehicle and some arrows to show the direction of movement.

Begin by sitting everybody down in a comfortable spot or allowing them to spread out and find a quiet spot of their own. The students will need to be silent and focus on listening.

Start by placing a cross (x) in the centre of the paper (this is your position). Try to place each sound on the sheet relative to that fixed position. Distant noises need to be drawn further from the centre. Listen for the sounds of the river, other visitors, and the breeze – which way is it blowing? Can you hear which tree is tallest? Allow 5 minutes for listening and drawing, then ask members of the group to share their maps. Try to work out how many different life forms the class has heard altogether. This activity is useful because it allows children to locate various sound sources prior to heading deeper into the bush, and lessens the sense of fear of getting lost that some children experience.



Example of a sound map

Leaf pictures (from Leisure Crafts)

On a smooth piece of ground or a sheet of paper, children can create a picture using leaves gathered from the forest floor. Please emphasise that no live plant material is to be picked for the creation of these artworks. For this activity, it helps to give younger children a theme like “leaf birds” or “leaf fish”. Encourage the children to think about colours and textures, and if they are inventing a new type of animal, what sound might it make if it were alive? Encourage the work to be finished off with a frame of sticks, patterned leaves or bark. If the children are working on paper, you may like to have a squeeze

bottle of PVA to glue down particularly fine masterpieces. You may like to collect up some pretty leaves of your own to award as exhibition prizes.

Use the “[Experiencing native plants in your green space](#)” resource to learn about plants (pages 11-13 focus on leaf features and leaf art).



4. EXPERIENCING NATIVE PLANTS IN YOUR GREEN SPACE

Explore and investigate native plants in your green space using the  [Experiencing native plants in your green space resource](#)

IN THE ENVIRONMENT

The tree game (from Cornell)



This is a drama activity to help children understand how a tree works.

Before beginning this learning experience, ensure the students are familiar with the basic parts of a tree by showing our [New Zealand trees slideshow](#).

Begin by finding some dry ground and place one tall and fairly strong child in the centre. This person represents the **heartwood** of a tree. Although heartwood is strong and the hardest and most durable

part of a tree, it is also dead.

Around the outside of this core is the **xylem**, which are the water pipes that take the water from the roots up to the top of the tree. Four or five children now take on the role of xylem and their job is to transport water up the tree with an appropriate noise (“Glug, glug, glug”). Trees usually grow a new set of xylem each year, giving the annual rings you can age a tree by.

Connected to the bottom of the xylem are the **roots**, which take up water and nutrients from the ground water. Four or five people preferably with long hair lie on the ground with their feet into the centre and head outermost. The hair represents the root hairs which absorb the water from the soil. The roots need to be making some sort of slurping noise to show they are sucking up water.

Around the outside of the xylem is the **phloem** (pronounced “flow’em”). This area is made up of the tubes that bring the sugary food (made by the leaves) down the tree. This sugary fluid is sometimes called **sap**, and it’s what supplies all the living parts of the tree with energy. Another circle of people need to take their place to act as the phloem to bring the food down the tree,

taking care not to tread on the roots! They should use their arms and sounds to represent catching the food from the sun and pushing it down the tree.

The last layer to go on is the **bark**. Bark is tough, tastes revolting, and is full of nasty chemicals. Bark is there for protecting the tree from insects and browsing animals so they don't tap into the food supplies under the bark. The final group of people need to be linking arms, ready to ward off any attacking insects, and need to be saying a threatening "bark, bark, bark".

And so the tree is complete – get the xylem, phloem, roots and bark all doing their bit to make up the tree.

* As a bit of extra fun have one of the adults pretend to be a bark-boring insect that tries (gently) to attack the tree to get a drink of tasty sap.

Make friends with a tree (from Myers and Cornell)



WARNING! This activity involves leading blindfolded people and requires care. Talk the person being blindfolded through the process – e.g., “step over a small branch, now we're going down a slope, bend your head for a branch at chin height...” etc. A blindfolded person is completely dependent on their guide. Being a guide is serious business – children should be at least eight years old to do this adequately.

Wasps are another problem to check for BEFORE the blindfolded person reaches them. Be especially careful of any tree trunks covered in black sooty mould, as there is likely to be honeydew which wasps feed on.

This activity is carried out in pairs and in an open area, where there are a variety of trees in clear sight. One of the pair is blindfolded (or they can simply close their eyes) and is led by the guide person to a tree.

The blindfolded person then feels the tree. This is their special tree, and without seeing it they must get to know it so that they can recognise it again later. Get to know it by feeling the bark, the roots, and the branches if they are low enough. What do the leaves feel like? Can you reach around the trunk? What does it smell like?

After about two minutes of getting to know the tree, the guides lead the blindfolded partners back to where they began. After removing the blindfold, the “tree friends” have to re-find ‘their’ tree based on the features they remember about it.

Cathie Macfie says in her book “In Touch”, “Few children ever make a mistake and the possessiveness of their jubilant cry ‘here is MY tree’ is immensely satisfying.”



On track

Many overseas visitors comment on the beauty of the ground-covering plants in our forests. It is a special living carpet!

How many different types of ground cover plants can you see within a metre either side of the track?

Can you see places where people have gone off the main track and worn away new tracks?

What would happen if increasing numbers of visitors kept doing this?

Epiphyte fight

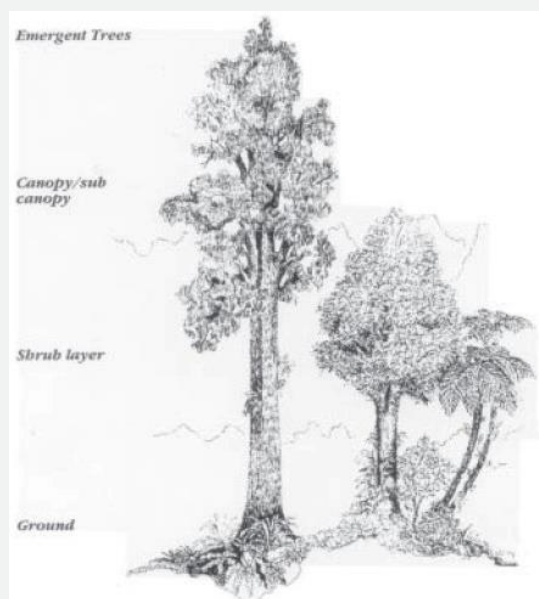
Find a tree with a heavy burden of epiphytes (plants growing on it). How many different plants are growing on the bark and branches of this tree?

Why are they growing on another tree where there is no soil and where it must sometimes dry out badly?

What defences do some trees have that keeps them relatively free of epiphytes?

Stratification – the layered look

Look at the vertical layers of life in this forest. Draw a sketch of the different plants that you can see from your viewpoint and then compare them to the diagram below:



Find some foliage that has fallen from the canopy or emergent layer and compare it to the leaves of trees in the shrub or ground layer. What do you think caused the differences?

Feel the forest

Record your thoughts and feelings about this type of forest. How does it look, smell and feel to you?

It has been called lowland forest, rain forest, native forest, the bush and the realm of Tane. What name would you give it?

ABOUT THE ENVIRONMENT

Explorer naturalists (adapted from Bert McConnell and Barry Law)

Pretend the group is discovering this forest for the first time. Maybe they sailed out here with Captain Cook and have at last arrived to see this new land for the first time. As a naturalist we have to find out as much as we can about the plants and animals around us.

Each student must go out and find a plant and remove one leaf (ideally each person takes leaf from a different plant). Using paper and pencil, they are to draw the leaf and annotate the picture. The notes should include the leaf colour, size, growth form (is it clustered or paired?), texture, any hairiness, and any smell – it's best not to encourage taste just in case the plant is poisonous! Everyone should come up with a name for their plant, it could be simple "Sally's tree" or a descriptive scientific name like "*pricklebushi horrendous*". Once they have finished, collect the sheets and shuffle them around a bit before handing them back out. They should all get a page belonging to someone else. Now they have to use the picture and description to go and find the plant that the leaf came from. The activity emphasises the need for accuracy when making observations.

Use plant guides to find the common and scientific names and compare notes.

Forest houses

A forest can be likened to a house with walls, a roof and floor. Discuss what the floor is made out of, is it carpet or vinyl? Do the walls have wallpaper and is there any artwork on the walls? What is the roof made from? Are there any exposed beams holding the roof up? The water supply may seem a bit rough when it's raining, but the drainage is usually adequate! How good is the

lighting, is it enough for the “indoor” plants? What colour is the roof, is it flat or pitched and does it have skylights? Are there any pets that come with the house? Explore the children’s ideas.

If they were real estate agents who were advertising this forest house for sale, how would they do it? The children could draw up a “for sale” poster for the house in a way similar to a real estate advertisement. They could lead each other through in twos or threes as though it was an “open home”. Use the ‘Property Press’ to help with ideas.

Sustainable production

Older students could work out the theoretical sustainability of milling trees in the reserve. Since it takes about 150 years for a native tree like rimu or mataī to become big enough to mill, one tree out of every 150 could be removed each year. How many could be removed each year from this reserve? You will need to count the number of large trees in a defined area of the reserve.

FOR THE ENVIRONMENT

Dream forest recipe

Forests such as the one found in Pelorus once covered most of lowland New Zealand. Today these forests are rare. The re-establishment of a forest goes through the process of “succession”, starting with pioneer species (which have relatively short but productive lives), followed by more permanent understory species, which in turn become gradually overtopped by the big canopy trees. A revegetation (planting) project is often planned to mimic this sequential pattern.

Make up a recipe for a dream forest. Starting with a flat piece of land we want to ‘make a dream forest’. Like a cooking recipe you want the list of the basic ingredients, the method and the time needed. Which are the first plants to add, and which plants would follow? If we made the forest 100 x 100 m (1 hectare, or 10,000m²), how many plants would we need of the different sizes? You might need to work out how many trees there are per square metre. How much water do we add? How long will it take to make it mature? It is interesting to think that this is almost exactly what the designers of Te Papa had to do on the Wellington waterfront!



Revegetation project

This project requires research. Plan a revegetation project for an area near where you live. Using the principles of succession to help you plan your approach. Which species you identified today would grow naturally back in your hometown? In what order are the plants going to have to be planted? Present your work as a timeline showing when each stage would need to be carried out.

Weed scene

This activity would work well as a comparison with other bush areas closer to your school. It relies on some good weed identification skills.

On a sketch map of your study area, mark in areas where plants are growing that shouldn't be there. These might be small weeds, or trees and shrubs that aren't native. From the map and what you know about the weeds, what are the sorts of places most at risk of weed invasions? What would be the best ways to control them? Make a list of questions that you could ask a DOC staff member who is responsible for weed control.

Old man's beard is a serious threat to lowland forests like at Pelorus Bridge, where it is controlled by DOC. Learn to identify it and look out for it in the bush at Pelorus Bridge.



Old man's beard