

FIELDWORK ACTIVITIES



7. Hardy Gully Nature Trail Activities

Aim

This activity trail helps students make direct observations of the forest communities (Mountain Ash Forest and Cool Temperate Rainforest) found along Hardy Gully Nature Walk, Grants Picnic Ground in Dandenong Ranges National Park. It also allows students to investigate some of the management issues faced by the national park.

Contact the park office prior to your visit to obtain up-to-date information about the Hardy Gully trail.

Materials

- Activity sheet 7: Hardy Gully Nature Trail.

Activities

Walk Length: 700 metres.

Walk Time: 30 minutes.

Select from the following activities those you want your students to undertake along the trail.

Just prior to the commencement of the activity trail, remind students of the following:

- Stay on the track at all times while completing the activity.
- All plants and animals in the park are protected.
- Live plant material should not be picked.
- If rocks or logs are turned over for inspection, they should be returned to the exact position they were found in as they are animal homes.
- All litter should be taken home.



Hardy Gully Nature Trail Activities

Remember to stay on the track at all times while completing this activity.

Different Forest types

Look for a location shortly after starting the trail where you can see two different kinds of forest.

The tall open forests here are Mountain Ash Forest. These grow on the sheltered south to east facing slopes of the Dandenong Ranges, usually on deep loamy soils. Where the Mountain Ash forest borders the creek gullies, pockets of Cool Temperate Rainforest replace the eucalypt forest. Environmental factors such as soil type, elevation, aspect and fire history determine just where each of these two forest communities occur in the Ranges.

As you move from the picnic area into the forest, what differences do you notice:

- Light _____
- Moisture _____
- Temperature _____

Treeferns

Find a tall tree fern.

Tree ferns are unusual in that they have trunks - hence their name. Unlike the trunk of a tree, a treefern's trunk consists of a central core surrounded by varying thickness of matted rootlets which support the canopy of fronds.

Two types of treefern occur in Sherbrooke Forest.

The Soft Treefern has a soft rust brown coloured matting of hairs in the base of the smooth fronds. The frond bases of the Rough Treefern on the other hand are rasp-like to touch, with a course matting of hairs.

Staying on the track, locate at least one Soft Treefern and Rough Treefern.

Draw a diagram of a Soft Treefern and a Rough Treefern. Show the arrangement of fronds, frond butts and matting hairs at the base of the frond.

Soft Treefern

Rough Treefern

Epiphytic Ferns

Look on the trunks of Soft Treeferns to see how many support lots of filmy ferns and mosses. These plants on treeferns' trunks are known as **epiphytes** - plants that live on the trunk of another plant but do not obtain nourishment or moisture from it.

Suggest how the **filmy ferns** and **mosses** on the treefern might gain their nourishment and moisture requirements.

Fallen Log

As you walk along the track, look for large fallen logs. These logs were once giant Mountain Ash trees. Often the tree was dead before it fell and was home to a colony of bats or other native animals that lived in the 'keyholes' along the trunk. A keyhole is formed after a large branch falls from the tree. So the log that now lays on the forest floor was once an upright tree.

The forest can be described as dynamic, that is, always changing.

Suggest ways in which the fallen log may continue to contribute to change at this site.

Blackwood

Find a Blackwood tree growing along the track. Blackwoods are one of the tallest growing wattles in Australia. Some of the Blackwood trees along this track are probably between 80 and 100 years old. The Blackwood is a common understorey tree of Mountain Ash forests but can be the dominant tree in Cool Temperate Rainforests. Blackwoods provide a variety of habitats for a range of animals found in the forest environment. The name 'Blackwood' refers to timber produced from these trees, a beautiful fine grained, dark coloured hardwood used for quality furniture.

List 3 habitats that are likely to be provided by this tree and the associated animals.

1. _____
2. _____
3. _____

Wire Grass

Look for a grass-like plant covering the forest floor and growing up though the undergrowth. Feel its stems and leaves to find a plant called **Wire Grass**. This native grass grows over where more light reaches the forest floor.

Why is this plant given the name Wire Grass?

Suggest why Wire Grass only grows in particular sections of the forest.

Find a very large Mountain Ash

Find a very large old Mountain Ash tree. Mountain Ash is the tallest growing hardwood in the world and can reach heights of 100 metres. Notice that at the base of the tree the bark is rough and dark, while further up the trunk the bark becomes smooth and pale and forms long ribbons.

Trees like this have survived many forest fires and are now some of the oldest in the forest. Most of the Mountain Ash trees in this part of the park grew up after the 1925/26 fires.

Can you see any younger Mountain Ash trees that grew up after the 1925/26 fires? Suggest why there are no young Mountain Ash saplings growing here.

Find a view over the creek gully

Stop and look over the creek gully. Look for the three different layers of vegetation that makes up the forest:

- an upper layer of eucalypts
- a middle layer of Blackwood, hazel and treeferns
- a lower layer of ground ferns and other small plants

Draw a clearly labelled diagram of the forest view to show the distinct vegetation layers. Label each layer with the name of the plants, using the terms ground cover, understory and canopy.

Along the track back to Grants picnic ground

As you walk along the track back to Grants Picnic Ground, look for the following.

Management problems and solutions

Tracks play an important role in allowing visitors access to the forest environment, however they can create management problems for the park.

List 2 management problems you observe along the track.

List 2 management strategies that have been used along the track to minimize the problems you observed.

Vines

Many vine-like plants use other trees and bushes for support, curling their stems around larger branches. Many of these plants have special adaptive features for climbing e.g. rasps or twining stems.

Locate a vine. What features does it have to help it climb?

Suggest a reason why vines climb.

How could vines impact on the plant it grows on?

Lichens

Can you find some trees that have light coloured 'patches' growing on their trunks?

These patches are lichens, a very primitive plant form. Lichens are actually two living organisms in close association - a fungus and an alga. The alga (plural = algae) is a green plant that can make its own food, but the non-green fungus cannot. The fungus uses the food made by the alga. The alga uses water absorbed by the fungus, which also shelters and supports the alga. Such a relationship is known as 'mutualism'.

Count how many different types of lichen you can see on one tree.

Does the lichen harm the tree it grows on? Explain why

Stag trees

Look for large Mountain Ash trees which have lost most of their branches. These types of trees are often referred to as 'stag trees'. These types of trees are often left standing after a forest has been logged because they are important to the survival of a forest and its animals.

Suggest reasons why these types of trees are considered important for the survival of a forest and its animals.

Suggest why there are not many large stag trees within this forest.

Signs of decay and recycling

Look for places where the forest floor is thickly carpeted with decaying leaves and fallen branches.

List 3 factors that may contribute to the decomposition of a log, branch or leaves.

How does this decaying vegetation contribute to the renewal of the forest floor?

Fallen leaves and branches contribute to the continual renewal of the forest, but they can also pose problems for the management of the park.

What problems does decaying forest litter or fallen branches pose for the management of the park?

Around the picnic area

As you approach the picnic area you will notice that this managed area is very different from the natural environment you have just walked through. In managing this area the park rangers try to minimize environmental damage that may occur due to visitor activities.

List 3 problems that may result as a consequence of visitor activities.

List 3 actions taken by park management to minimise the problems.
