

24. Ecological communities

Aim

To research two different ecological communities. If the class will be going on excursion to a park, choose ecosystems that occur in that park.

Materials

- Resource sheet 24: Forest ecosystems.
- Reference books, CR ROMS and websites on Victorian ecosystems.

Activities

Parks usually contain a variety of ecosystems.

1. Your teacher will advise you of which Victorian ecosystems to research. For example: Cool Temperate Rainforest, Wet Sclerophyll Forest, Dry Sclerophyll Forest.

2. Research your allocated ecosystem.

3. Compile a brief report on that ecosystem using the template provided below.

4. Team up with a classmate who has researched a different ecosystem and compare your findings. Make a dot point list to summarise the major differences between the two ecosystems.

Photograph or sketch

Topography	Aspect
Name location or briefly describe e.g. Main Ridge; Lower Slopes of Mt	e.g. South East
Vegetation Dominant Species: <ul style="list-style-type: none"> • Canopy • Understorey • Groundcover 	Fauna Common species: <ul style="list-style-type: none"> • Mammals • Birds • Reptiles • Amphibians • Fish Rare <ul style="list-style-type: none"> • Mammals • Birds • Reptiles
Soil Soil Type Soil Characteristics	Climate Rainfall Dew: Common Rare Snow: Infrequent Rare
Draw a cross-section profile of the community	

24. Forest ecosystems

Forest ecosystems include Cool Temperate Rainforest, Wet Sclerophyll Forest and Dry Sclerophyll Forest.

These ecosystems consist of a range of animals and plants that interact to form distinctive communities within a certain physical environment.

Cool Temperate Rainforest

Rainforests are classified according to their structure, the dominant canopy trees, leaf and bark characteristics and the presence of special life forms such as ferns and epiphytes.

Much of the rainforest which existed in Australia 2000 years ago is now gone due to climate change and increased bushfire levels over the millenniums. Since European settlement, rainforest has been further reduced by clearing and through gradual changes to the surrounding environment. Today only isolated rainforest pockets remain in Victoria.

Cool Temperate Rainforest typically occur in gullies and sheltered aspects in areas where rainfall exceeds 1000 mm per annum and is often supplemented by mists.

Cool Temperate Rainforest is distinguished by a dense, green and almost continuous tree canopy of trees such as Blackwood and Southern Sassafras. On the edges of the rainforest, Mountain Ash may emerge above the rainforest canopy.

In a rainforest, the tree canopy filters sunlight, leaving the forest floor in shade. The dense canopy maintains a constant, humid atmosphere within the rainforest and protects the understorey plants from drying winds.

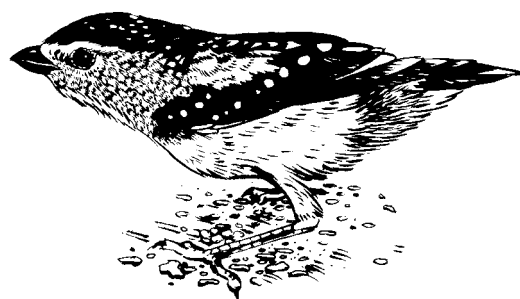
A small variety of shrubs and trees exist below this canopy level. Epiphytes such as filmy ferns and Kangaroo Fern cling to tree branches. Lichens and moss are plentiful in this moist environment. Tree ferns and ground ferns dominate the ground layer.

Numerous decomposers such as fungi, bacteria and many invertebrates break down the leaf litter and decaying matter on the soil surface, releasing nutrients needed for plant growth.

The Superb Lyrebird and Eastern Whipbird feed at ground level within the rainforest, scratching for worms, grubs and insects among the leaf litter, rotting logs and ferns.

In the understorey of the rainforest, birds such as the Golden Whistler, Southern Yellow Robin, Grey Fantail and Grey Shrike Thrush sing and feed on insects. Within the canopy, birds such as Thornbills and Spotted Pardalotes search for invertebrates on leaves and under bark. In the canopy, honeyeaters and rosellas feast on nectar and small fruits.

Mammals are not common within the rainforest but the Bush Rat and Brown and Dusky Antechinus search at night for insects, lizards and decaying plants and animals.



Spotted Pardalote © MT

Wet Sclerophyll Forest

Wet Sclerophyll Forest occurs on mid to higher altitudes of Victoria where deep red soils and high moisture levels are present.

The forest consists mainly of an overstorey of tall smooth-barked eucalypts such as Mountain Ash and Mountain Grey Gum. The forest understorey is dense and multi-layered and may consist of Blackwood and Silver Wattle.

The forest floor is carpeted in leaf litter. At the ground level vegetation is also abundant and includes small shrubs, ferns, groundcover plants, mosses and lichens.

Birdlife is prolific in the forest and includes Eastern Rosella, Southern Yellow Robin, Eastern Spinebill and Sulphur Crested Cockatoos. Bush Wrens and honeyeaters are common in the middle and ground levels, searching for small invertebrates and nectar. Nocturnal birds such as Tawny Frogmouths feed at night in the forest.

Both the Brushtail and Ringtail Possum are common in the tree canopy at night looking for nectar, fruit and small invertebrates. At ground level small nocturnal mammals such as the Long-nosed Bandicoot and the Brown Antechinus search through the leaf litter for food.



Brown Antechinus © MT

Dry Sclerophyll Forest

Dry Sclerophyll Forest is largely confined to the drier, more exposed slopes of Victoria. These forests typically occur on low altitude exposed slopes which are prone to bushfires. The vegetation is adapted to stoney, clay-based soils, exposure to strong winds and temperature extremes. Plants are generally woody with a thick protective bark. Leaves are small and narrow to reduce water loss.

Typical dominant trees include Messmate, Peppermints, Red Stringybark and Long Leaf Box. The understorey is rich in plant species and includes several species of Acacia, Cherry Ballart and Tree Everlasting. The ground is often covered in a variety of native grasses and small shrubs. Common groundcover species include Tussock Grass, Kangaroo Grass, Forest Wire Grass, Ivy Leaf Violet and Common Ground Fern.

As a result of the many plant species present a wide range of fauna exists within Dry Sclerophyll Forest.

Numerous parrots, honeyeaters and wrens search for nectar and invertebrates throughout the forest. The Magpie, Kookaburra and Gang Gang are some of the larger birds found in the area. The Wedge Tail Eagle can be sighted at various times flying through the thermals that sweep up the ridges.

Sugar Gliders and Brushtail Possums are common nocturnal marsupials in the tree canopy in their quest for gum, fruit and leaves.

At night the Common Wombat barrels through the undergrowth looking for succulent grass, tubers and roots. The echidna is active at dawn and dusk as is the Swamp Wallaby which feeds in small forest clearings. Skinks are common in the undergrowth and snakes include the Copperhead and Red-bellied Black Snake.