

5 NATIVE VEGETATION

Most of the catchment has been cleared to make way for agriculture. Notable exceptions are reserves in the Pyrene Range, to the north-east of Avoca, to the south-east of Bealiba and between Bealiba and Wehla. These reserves, and trees in road casements and farm shelter belts, help us to ascertain the original structure and floristics of the tallest stratum. The original composition of shrubs and herbs is difficult to determine because of disturbances such as grazing, burning, cultivation and application of fertilisers.

The catchment contains 20 indigenous *Eucalyptus* species. These and other prominent species are listed in Appendix VII.

Based largely on the Forests Commission's maps of vegetative associations in forest reserves, the Land Conservation Council (1978) has recognised broad communities. Prominent in the Avoca catchment are the box-ironbark forests, which characterise the goldfields of northern Victoria generally. Whipstick mallee is scattered through the drier areas, and a messmate-gum association occurs in the humid south. Stringybark forests are found on the poorer soils, and red gum woodlands along the watercourses.

The original communities presumed to characterise the land systems are listed below, arranged into structural forms (Specht 1970) and alliances (Beadle and Costin 1952). Alliances are broad groupings of associations that, in this survey, have been identified by the predominant trees within each land component (see Chapter 7).

Tall open forest

E. macrorhyncha-E. st-johnii and associated species

The most common species are *E. macrorhyncha* and *E. st-johnii*, but *E. obliqua*, *E. polyanthemos* and *E. goniocalyx* are also present. *E. rubida* and *E. melliodora* are confined to the moister drainage lines. The ground flora consists mainly of *Danthonia* spp. and *Themeda australis*, but also includes *Helichrysum obcordatum* and *Epacris impressa*.

These forests occupy the humid Pyrene Range. The western and southern slopes in particular have a wetter climate and here the *E. st-johnii* stands are much denser. *E. st-johnii* occurs as far north as Stuart Mill, but there it is confined to the wetter drainage lines.

The stony soils vary in depth, with only a few centimetres of stony loam between outcropping rock in some places and with pockets of clay 1.0- 1.5 m deep in others.

Open forest

E. viminalis-E. radiata and associated species

These two eucalypts occur on a small granitic area in the very south. *E. rubida*, *Exocarpus cupressiformis* and *Acacia mearnsii* are common associated species. In the ground flora, *Themeda australis* and *Briza maxima* predominate.

The upper slopes with outcropping rocks have soils that vary considerably in texture, depth and profile form. Most of the area has been cleared. The annual rainfall of more than 600 mm is the highest for any cleared area of land in the catchment.

E. macrorhyncha and associated species

Eucalyptus macrorhyncha may occur in pure stands over a small area, but *E. polyanthemos* and *E. goniocalyx* are usually present. This community is confined to shallow stony soils or soils of low fertility in the south, mainly on steep slopes of the Pyrene Range foothills, the metamorphic aureoles and the alluvial aprons of steep hills. The understorey is usually a mixture of native grasses, wattles and heaths.

E. sideroxylon-E. microcarpa and associated species

Eucalyptus sideroxylon occupies gentle hills on Ordovician sandstones and mudstones within the 450 to 550-mm band of annual rainfall. *E. macrorhyncha*, *E. polyanthemos* and *E. sideroxylon* are associated on the stony gradational soils of the ridgelines, but *E. macrorhyncha* and *E. polyanthemos* are less common in the drier northern parts. *E. sideroxylon* and *E. microcarpa* with some *E. leucoxylon* is the usual association in the 450- to 500-mm rainfall zone on the gentler slopes with deeper soils.



An open forest of Eucalyptus sideroxylon near Bealiba.

The soils range from shallow stony soils on the ridges and upper slopes to duplex soils on the lower and mid slopes. The abundance of wildflowers and wattles, particularly in spring, is a special feature of this seemingly harsh bushland. The shrub layer includes *Acacia acinacea*, *A. pycnantha* and *A. diffusa*. The ground flora has the usual *Danthonia* spp. and *Themeda australis*, interesting native orchids and *Helichrysum bracteatum*, *Eriostemon* sp., *Grevillea dryophylla*, *Dillwynia glaberrima* and *Hardenbergia violacea*. These areas are noted for the large variety of flora and bird life.

E. microcarpa-E. leucoxyton

Eucalyptus microcarpa and *E. leucoxyton* form the most common association throughout the catchment, growing on a wide range of soils and topographical positions. In the south they occur on the middle and lower slopes of hills on Ordovician sediments, on the alluvial terraces at Natte Yallock and Logan, the granitic areas of Dunluce and Gowar, the basaltic plains of Wareek, the alluvial aprons near Rathscar, Percydale and Dalynong and the lower slopes formed on Tertiary river gravel deposits near Carapooee.

Woodland

E. microcarpa-E. leucoxyton

In the north, stands of *E. microcarpa* and *E. leucoxyton* occur in woodland form on the steep metamorphic aureoles and on the steep granitic outcrops of Yowang Hill and Mount Buckrabanyule.

E. microcarpa-E. largiflorens-Casuarina luehmannii

This association occurs on the eastern edge of the Wimmera clay plains and on the northern riverine plains with duplex soils. *Casuarina luehmannii* and *E. microcarpa* predominate on the slopes and better drained duplex soils. *E. largiflorens* is dominant in the depressions.

E. camaldulensis

Eucalyptus camaldulensis occurs on the annually flooded plains of the Avoca River and its major tributaries, where the young soils vary from clay loams to sandy loams with little profile development. The trees are confined to the watercourses meandering across the alluvial plains.

E. blakelyi

Eucalyptus blakelyi favours the gently sloping country on the Mount Kooyoora granodiorite where the grey duplex soils have an impeding hardpan at approximately 1 m depth. Seepage from up slope, together with winter rains, fulfils the requirement of this species for seasonally wet conditions.

E. camaldulensis-E. rubida

On the granitic area south of Amphitheatre the rainfall is higher and *E. camaldulensis* is found together with *E. rubida* on the moister lower slopes with duplex soils. The annual rainfall exceeds 600 mm and the duplex soils are wet for several months of the year.

Low woodland

E. polyanthemos-E. goniocalyx

In the south *E. polyanthemos* and *E. goniocalyx* occur together on the isolated but common Tertiary gravelly fluvial deposits. This straggly low woodland has a heathy understorey of *Brachyloma daphnoides*, *B. ericoides*, *Hakea* spp. and *Grevillea* spp. growing on soils with deep sandy A horizons, an impermeable siliceous hardpan within 1 m of the surface and a low nutrient status.



A woodland of Eucalyptus microcarpa and E. leucoxyton near Archdale.



Eucalyptus camaldulensis woodland on the banks of the Avoca River



Low woodland of E macrorhyncha, E polyanthemos, E. goniocalyx and heath spp. near Archdale.

Scrub

E. viridis-E. polybractea-E. behriana

Whipstick mallee, which comprises these three mallee eucalypts, is restricted to two areas on Ordovician sediments, one near St Arnaud and the other near Wedderburn. The term “whipstick” originated because of the severe backlash by the springy slender stems arising from the mallee root when early settlers rolled the scrub in clearing operations. Shallow, stony soils predominate, but deeper sodic: duplex soils do occur.

Although the species grow in mixed stands, *E. viridis* tends to dominate the steeper hill crests, *E. polybractea* the gentler slopes and *E. behriana* the lower slopes and depressions. The area north-east of St Arnaud carries almost pure *E. polybractea*.

The areas of whipstick mallee are usually clearly defined and occur adjacent to but higher than stands of *E. sideroxylon*, *E. polyanthemos* and *E. microcarpa*. The understorey is either sparsely populated with acacias, various orchids and perennial herbs, or nonexistent, with only twigs and leaf litter as ground cover.



Open scrub country near St Arnaud, dominated by E. polybractea.



A woodland of Casuarina luehmannii near Charlton (above) contrasts with one of Eucalyptus microcarpa, E. leucoylon and C. luehmannii near Archdale (below).

