

A.5 Native Vegetation

This section gives an outline of the structure, composition and distribution of the major vegetation types in the study area.

The vegetation has been grouped into communities based on the dominant tree stratum, similar to the alliances described by Frankenberg (1971). Structure has been modified from Specht (1970) – see appendix D.2. Botanical names are taken from Willis (1970, 1972) with amendments by Todd (1979)

Common names are listed in appendix D.

Most of the native vegetation had been highly modified since settlement, especially on the gentler slopes most suited to agriculture. The structure and composition of the communities in these areas is largely conjectural and is based on observation of remaining trees in road reserves and farms. The table summarises the major vegetation communities.

The communities

Messmate-peppermint-gum open forest

(*Eucalyptus obliqua*-*E. viminalis*, *E. rubida*)

An open forest II/III of these species grows in the higher-rainfall south-east of the catchment, usually on basaltic or sedimentary parent materials. The most extensive occurrences are on sedimentary rocks in the Wombat State Forest. These forests supply hardwood timbers for general-purpose building construction. *E. obliqua* and *E. radiata* tend to predominate on the better drained slopes and crests, with gums more common on the moister lower slopes. *E. ovata* is restricted to the poorer-drained depressions.

The original forest was probably layered, with wattles such as *Acacia dealbata* and *A. melanoxylon* forming a lower tree layer. The understorey stratum is grassy, shrubby or ferny.



E. obliqua and *E. rubida* in an open forest III formation in the Wombat State Forest.

Manna gum open forest

(*E. viminalis*)

E. viminalis is a common species in the south of the catchment, especially in well-drained areas. Notable examples occupy the granitic peaks of Mount Alexander (with *E. obliqua* occurring in association on the upper slopes) and Mount Beckworth. In these situations it forms a woodland I/II, with grassy, or less commonly ferny, understorey. *E.gonicalyx* is a commonly associated species, and

E. aromaphloia, an uncommon species in the catchment, occurs on the granitic slopes around Mount Beckworth.

Isolated specimens of *E. viminalis* on volcanoes in the south represent remnants of an open forest that probably once covered these well-drained slopes.

Stringybark-box woodland to open forest

(*E. macrorhyncha*-*E. polyanthemos*, *E. microcarpa*, *E. goniocalys*)

This community is generally restricted to harsh, droughty sites on sedimentary or Tertiary gravel parent materials. The soils are frequent stony, shallow, droughty and of low inherent fertility. The common occurrences include the slopes and crests of the metamorphic ridges and the steeper slopes and crests within most of the sedimentary map units, with the exception of the higher rainfall south-east.

The structural form ranges from woodland I on the poorer sites to open forest II. The understorey is often grassy or shrubby.

Red ironbark-grey box-yellow gum woodland open forest

(*E. sideroxylon*-*E. microcarpa*-*E. leucoxylon*)

Ironbark-box gum forests grow extensively throughout the central parts of the catchment on gently undulating sedimentary terrain, corresponding closely to the gold bearing areas of north-central Victoria. *E. microcarpa* occurs in most situations. *E. sideroxylon* is most common on the gentle crests, and in some areas of this community may be absent. *E. melliodora* is a commonly associated tree on the well-drained lower slopes. Structural form varies from woodland II to open forest II, and the understorey is characteristically grassy, or shrubby. Common understorey shrubs include *Acacia pycnantha*, *A. genistifolia*, *A. acinacea*, *Cassinia arcuata* and *Grevillea alpina*.

These forests have been extensively utilised since settlement, originally providing timber to meet the demands of the gold mining population in the 1800s, and now supplying limited sawn timber, as well as fence-posts and firewood. They also provide a valuable resource for apiarists, and for various forms of recreation.

Grey box-yellow box-buloke open woodland and woodland

(*E. microcarpa*-*E. melliodora*-*Casuarina luehmannii*)

This community, once prevalent in the north, has been mostly cleared. It is now represented by isolated trees in road reserves and on farms. It is most common on the better-drained parts of the extensive alluvial plains in the north, on the gentle granitic slopes in western and northern areas, and on basalt plains around Moolort and between Woodstock and Bridgewater. *E. microcarpa* is the dominant species throughout. *E. melliodora* usually occurs on the granitic or basaltic slopes, and *Casuarina luehmannii* is usually restricted to the better-drained sites – for example, on the prior stream levees of the riverine plain.

The original structural form is difficult to determine; it was most likely an open woodland to woodland II, although some areas were probably grasslands with only scattered trees.



Partly cleared E. microcarpa woodland – a common vegetation type in the central and northern areas.

Blakely's red gum

(*E. blakelyi*)

Blakely's red gum, an uncommon species in Victoria, is restricted in this study area to well-drained sites on granite around Mount Kooyoora west of Inglewood. In this situation it forms an open woodland to woodland I/II, with *E. goniocalyx* a commonly associated species. *E. polyanthemos*, *E. microcarpa*, *E. macrorhyncha* and *E. melliodora* also occur occasionally.

The understorey is usually open and grassy, although thickets of *Acacia camalifolia* frequently occur.

River Red gum woodland to open forest

(*E. camaldulensis*)

River red gum is a common tree in the northern half of the study area, lining the banks of the Loddon River and extending up the valleys of the larger creeks. It also grows on some poorer-drained parts of the alluvial plain, but where drainage is severely impeded it is usually replaced by *E. largiflorens*.

When mature it forms a woodland II with a grassy understorey, although an open forest formation is also common. The understorey, which is usually grazed and highly modified, is typically grassy. *E. melliodora* is an associated species in some of the narrower alluvial valleys.

Periodic waterlogging is necessary for the growth of *E. camaldulensis*, and a dry, warm summer period also seems to be a requirement, as in the cooler southern parts of the catchment *E. camaldulensis* is replaced by *E. ovata*.

Black box woodland II

(*E. largiflorens*)

This community is restricted to poorly drained, open or closed depressions in the northern plains with heavy grey cracking soils. The soil and site conditions are generally unsuitable for agricultural plant growth and consequently this community is often the only substantially unmodified native vegetation on the riverine plain.

The community is usually very limited in extent, and *E. camaldulensis* is frequently associated. The understorey is mainly grassy, although the tangled shrub, Lignum (*Muehlenbeckia cunninghamii*) occurs in some areas.

Mallee opens forest I and open scrub

(*E. behriana*-*E. viridis*-*E. polybractea*)

Mallee scrub occurs on highly weathered sedimentary terrain in the north of the study area. It usually occupies the drier crests and slopes with shallow, stony soils of low water-holding capacity and low

inherent fertility. Major tracts are found in the Whipstick north of Bendigo, to the west of Inglewood, and north of Wedderburn.

E. polybractea and *E. viridis* predominate on the drier crests, with *E. behriana* more common in depressions. *E. froggattii* is an uncommon species in the northern parts of the Whipstick, and small stands of *E. foecunda* occur to the west of Inglewood. One wattle of note, *Acacia williamsonii*, is restricted mainly to the Whipstick area near Bendigo.

The difficult soil and site conditions have resulted in most of the mallee community remaining uncleared. The cleared areas provide marginal grazing country and some areas are reverting to native scrub.



A mosaic of recently harvested mallee, uncut mallee and taller non-mallee eucalypts near Kamarooka.

Summary of the major vegetation communities

Community	Dominant species	Associated species	Structure	Main occurrences in catchment
Messmate peppermint gum	<i>E. obliqua</i> <i>E. viminiflora</i> <i>E. rubida</i> <i>E. radiata</i>	<i>E. ovata</i> <i>E. dives</i>	Open forest II/III	Wombat State Forest Basaltic rises and volcanoes in the south-east
Manna gum	<i>E. viminalis</i>	<i>E. aromaphloia</i> <i>E. ovata</i> (poorly drained areas) <i>E. rubida</i> <i>E. obliqua</i>	Woodland I/II Open forest II	Granitic peaks – Mount Alexander Mount Beckworth Widespread in south on basalt, sedimentary rocks and alluvium
Stingybark-bos	<i>E. macrorhyncha</i> <i>E. polyanthemos</i> <i>E. microcarpa</i> <i>E. goniocalyx</i>		Woodland I to open forest II	Tertiary gravel areas in central and northern areas; steep hills on sedimentary rocks throughout excepting south-east
Red ironbark- Grey box- Yellow gum	<i>E. sideroxylon</i> <i>E. microcarpa</i> <i>E. leucoxylon</i>		Woodland II to open forest II	Gentle to moderate slopes on sedimentary rocks in central areas
Grey box- Yellow Box- Buloke	<i>E. microcarpa</i> <i>E. melliodora</i> <i>Casuarina</i> <i>Luehmanni</i>	<i>E. melliodora</i> <i>E. albens</i> (west of Bendigo)	Open woodland II and to woodland II	Rise and plains on granitic, basaltic and sedimentary rock in northern and central areas; alluvial plains in north
Blakely's red gum	<i>E. blakelyi</i>	<i>E. leucoxylon</i>	Woodland I/II	Granitic hill around Mount Kooyoora and Mount Korong

Community	Dominant species	Associated species	Structure	Main occurrences in catchment
River red gum	<i>E.camaldulensis</i>	<i>E.meliadora</i> <i>E.largiflorens</i> (poorly drained areas)	Woodland II	Floodplains and alluvial terraces in north
Black box	<i>E.largiflorens</i>	<i>E.camaldulensis</i>	Woodland II	Depressions in northern alluvial plains
Mallee	<i>E.behriana</i> <i>E.virdis</i> <i>E.polybractea</i>	<i>E.froggattii</i> <i>E.foecunda</i>	Open scrub to open forest I	Sedimentary rises north of Bendigo (the Whipstick); Inglewood, Wedderburn