






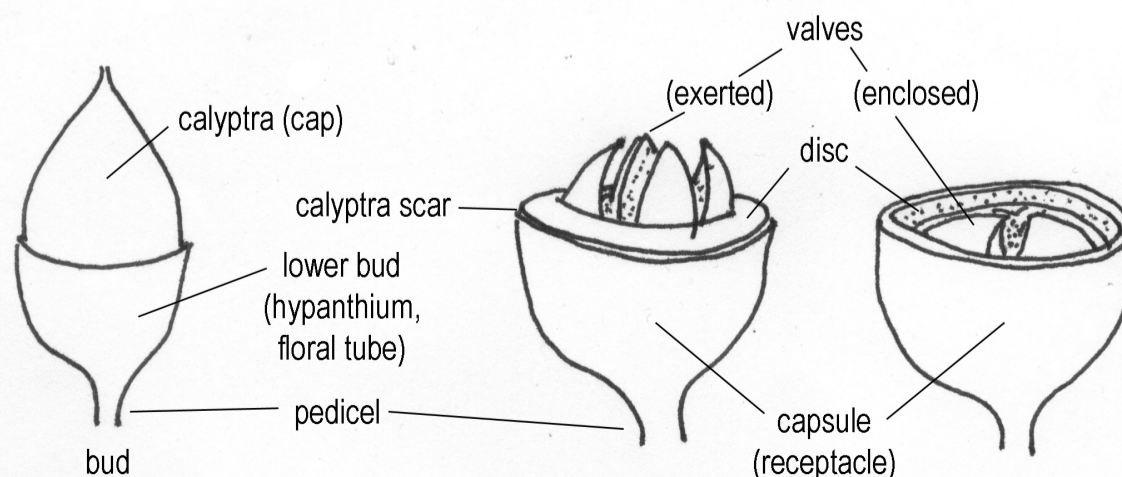


COMMON EUCALYPTS OF THE DORRIGO PLATEAU: TABLE OF RECOGNITION FEATURES










		SPECIES & form	BARK	FRUIT (l x w)	BUDS (l x w)	LEAVES	HABITAT & distribution	CONFUSING SPECIES	
SMOOTH BARKED	VALVES EXEERTED FROM CAPSULE	Sydney Blue Gum <i>Eucalyptus saligna</i> Tall forest tree	Smooth pale blue-grey, shed in short ribbons or flakes. Sometimes persists on lower trunk.	Bell shaped to pear shaped. Valves almost erect or out-curved	Cap conical to beaked.	Alternate green, glossy, paler beneath.	WSF Sea level to 800m, rather frost tolerant. On basalt, granite & meta-sediments	Other smooth barked eucalypts, especially White Gum , but fruits with erect or out-curved valves	
		White Gum (Forest Ribbon Gum) <i>Eucalyptus. nobilis</i> Tall forest tree	Smooth white, pale grey or pale yellow to near base, shedding in long ribbons . Often some rough bark persistent at base of trunk.	Globose or ovoid 4-8mm x 4-9mm disc raised, valves exerted	7 buds per flower cluster, 4-7mm x 3-5mm cap conical	Adult leaves narrow lanceolate, glossy, concolorous Sucker leaves opposite	WSF Mostly 700m-1200m on basalt, granite and metasediment. Most common gum on basalt . Often with mesquite. Often planted in farm woodlots	Dorrigo White Gum has smaller fruits, is seldom on basalt, sheds smaller ribbons & has glaucous sucker leaves which it often retains on mature branches. Ribbon Gum (<i>E. viminalis</i>) is further west, in woodland & has 3 buds per flower cluster	
		Dorrigo White Gum <i>E. dorrigoensis</i> Medium to tall tree	Smooth white or grey, shedding in short ribbons or flakes. Rough bark on lower trunk	Small conical to hemispherical, 4mm x 4mm , disc flat or slightly raised, valves slightly exerted	7 per flower cluster, ovoid, 3-5mm x 2-3mm	Sucker leaves strongly glaucous	WSF, DSF & woodland. usually below 900m, seldom on basalt . Restricted to Dorriggo district	White Gum does not have glaucous sucker leaves, and has larger fruit with a more pronounced raised disc.	
		Cabbage Gum (a red gum) <i>E. amplifolia</i> Moderately tall tree	Smooth white or pale grey to pale brown or greenish, shedding in large plates or flakes	Globose 4-7mm x 4-8mm, disc raised, valves exerted.	7-20 in cluster. Spindle-shaped 4-7mm x 4-8mm Cap long conical	Juvenile & sucker leaves broad ovate to orbicular . adult leaves dull green & concolorous	Limited to a few small woodland patches (e.g. on Tyringham Rd near Nymboida R.)	White Gum & Dorriggo White Gum but has large broad sucker leaves, long, conical cap and conspicuously exerted valves.	
	VALVES ENCLOSED IN CAPSULE	Snow Gum (White Sally) <i>E. pauciflora</i> Small to medium spreading tree	Smooth with white grey, yellowish and pale greenish streaks. Can be scribbly. Shed in ribbons	Broad conical to hemispherical, 6-10mm x 5-9mm	>11 per cluster, cup shaped, 6-9mm x 3-5mm	Leaves 8-14cm x 2-4cm, lanceolate green concolorous, veins almost parallel to midvein	Occurs above 1100m on basalt, trachyte and granite country from Deervale west.	Black Sally has smaller, pointier leaves and tends to be restricted to cold low lying frost pockets Mountain Gum (<i>E. dalympleana</i>) occurs in west of area, has smaller, globular fruit with raised disc and exerted valves, and round glaucous sucker leaves	
		Black Sally <i>E. stellulata</i> Small spreading tree	Persistent on lower trunk, grey black & fibrous & compact. Smooth grey or green above, shed in short ribbons	Small sessile (ie no stalk) 3-4mm X 4-5mm , narrow disc, valves enclosed	>11 per cluster, spindle-shaped, 5-6mm x 2-3mm	Adult leaves small narrow to broad lanceolate, pointy 5-8cm X 2-3cm	Occurs above 1100m usually on basalt and trachyte in cold frost pockets	Snow Gum has more parallel leaf veins, larger fruit and is more common in area. also has paler bark with little retained rough bark.	
		Shining Top Gum <i>E. nitens</i> Medium to tall straight tree	Persistent fibrous flaky on lower trunk, grey to grey-brown. Smooth whitish, pale grey or cream above, shed in long ribbons	Sessile, cylindrical or ovoid 4-7mm x 4-6mm disc depressed valves enclosed or at rim level.	7 per cluster 5-7mm x 3-4mm	Sucker leaves opposite for many pairs, broad, sessile, glaucous, stems 4-sided . Adult leaves green-glossy concolorous	Wet forest & rainforest margins, only on high basalt escarpment rim . Commonly planted in farm woodlots	Superficially like White Gum. Restricted distribution	

Glossary

Alternate	Of leaves – arising singly from different points on the stem (cf. opposite). Also called disjunct.
Calyptra/cap	Cap-like covering of the flower, formed from fused petals and/or sepals, and shed when the flower opens
Concolorous	Of leaves – similar in colour and texture on both sides.
Disc	Ring around the opening of the capsule (receptacle) inside the calyptra scar; may be flat, domed, ascending, or descending.
Discolorous	Of leaves – different in colour on either side, having a distinct upper and lower surface.
DSF	Dry Sclerophyll Forest. Open forest of medium (<30m, usually <20m) height, dominant trees usually branching at less than half their height
Glaucous	Dull blue-green to pale grey colour
Gum	In the broad sense all eucalypts, bloodwoods and angophoras; in the narrow sense only smooth-barked eucalypts
Opposite	Of leaves – arising from the same level, on opposing sides of the stem (cf. alternate)
Rainforest (Rf)	Forests dominated by soft-leaved trees with a foliage canopy cover > 70%
Sclerophyll forest	Forest dominated by hard-leaved trees such as eucalypts with a foliage canopy cover of 30%- 70%
Sessile	Without a stalk
Valve	Segment of the top of the fruit that opens to release seed.
Woodland	Vegetation dominated by scattered medium to large trees (15-30m tall, usually branching from about half their height) and with a total canopy cover of <30%. Often grassy groundcover.
WSF	Wet Sclerophyll Forest. Tall (>30m) moist forest in which dominant trees are usually unbranched for most of the length of their trunks. Shrubby or ferny understoreys



**COMMON EUCALYPTS OF THE DORRIGO PLATEAU:
TABLE OF RECOGNITION FEATURES**

	SPECIES & form	BARK	FRUIT (l x w)	BUDS (l x w)	LEAVES	HABITAT & distribution	CONFUSING SPECIES	
STRINGY OR SUB-STRINGY BARK	Messmate <i>E. obliqua</i> Moderately tall to tall tree	Persistent to smaller branches (below wrist thick), reddish brown, medium long fibrous to stringy.	Globose-ovoid or urn-shaped, 8-9mm X 8-9mm disc depressed valves enclosed or at rim level	>11 per cluster club shaped 4-7mm x 2-4mm	Large broad lanceolate, very oblique at base, green glossy concolorous, crown dark	WSF or grassy forest above 900m on basalt, trachyte & granite. Deervale, Ebor, Point Lookout	Brown Barrel has similar appearance and range but its rough bark does not extend to branches that are less than wrist thickness. It also has smaller fruit.	
	Brown Barrel <i>E. fastigata</i> Moderately tall to tall tree	Persistent on trunk and larger branches, not extending below wrist size , red brown to grey brown, shortly fibrous to stringy, above pale grey & shedding in long ribbons	Conical or pear-shaped, 6-7mm x 5-7mm disc slightly raised to flat, valves at rim level or slightly exerted	11-15 per cluster, club shaped 4-6mm x 2-3mm	Medium sized lanceolate, moderately oblique, green glossy discoloured to concolorous, crown not very dark	WSF on high basalt and trachyte , Deervale, Ebor, Point Lookout	Messmate has similar appearance and range, but its rough bark extends to branches that are less than wrist-thick, and it has larger, urn-shaped fruit.	
	New England Stringybark <i>E. caliginosa</i> Medium to large tree	Persistent grey to red-brown and long stringy .	Hemispherical 5-8mm x 7-10mm, disc flat or slightly raised, valve tips slightly exerted.	> 7 per cluster, ovoid or shortly spindle-shaped 3-5mm X 2-3mm	Broad lanceolate 6-12cm X 1.5-4cm, green, semi-glossy, concolorous	DSF or grassy forest and woodland. A New England tableland species so occurs in west of plateau , usually on metasediments & granite	Diehard Stringybark is more widespread on the plateau. and its fruits form more dense clusters	
	Diehard Stringybark <i>E. cameronii</i> Medium to large tree	Grey to orange brown & long stringy	Sessile & crowded into dense heads , hemispherical or flattened globose 4-6mm X 4-6mm disc small, depressed valve slightly exerted.	7-11 or more per head sessile, shortly spindle-shaped 4-5mm x 2-2.5mm	Juvenile leaves scabrous margins undulate & toothed , adult lanceolate green glossy concolorous or slightly discoloured.	WSF, DSF & Woodland on granite & metasediments	New England Stringybark (see above)	
	Tallowwood <i>E. microcorys</i> Tall tree	Orange brown, soft in longitudinal, stringy slabs with horizontal breaks occurring in thin micaceous plates . Persistent to small branches.	Conical to pear shaped. Disc descending. Valves 3. Pale & not very woody	Cap hemispherical with fine ribs. 7-11 per cluster	Glossy green, paler beneath. Open looped venation.	WSF & Rf margins, in warmer areas below 750m , tolerant of poor soils but prefers moist rich forest loam.	Fruit paler & less woody than other eucalypts, and usually prolific. Horizontal breaks in thin plates of the bark are distinctive.	
	New England Blackbutt <i>E. campanulata</i> Tall tree	Bark persistent on trunk & larger branches, grey to grey brown, shortly fibrous (peppermint-type) Smooth above shedding in long ribbons	Conical to bell-shaped 5-6mm x 5-6mm disc flat, valves enclosed	>11 pr cluster club-shaped 3-5mm x 3-4mm, 7-11 per cluster.	Juvenile leaves ovate, grey-green. Adult leaves lanceolate green glossy to semi-glossy, concolorous.	WSF & DSF at intermediate altitudes (500m-1000m) More common on granite than basalt. Also on metasediment.	Somewhat like Messmate & Brown Barrel , but they are at higher altitudes, seldom if ever in the eastern & northern part of plateau, and have stringier bark. NE Blackbutt has a thin crown when viewed from beneath	
	Narrow-leaved Peppermint <i>E. radiata</i> Medium to tall tree	Persistent to larger branches, grey to grey-brown, shortly fibrous. Smooth above & shed in long ribbons	Hemispherical or pear-shaped 4-6mm 4-6mm, disc flat, valves enclosed	8-20 per cluster club shaped, 3-6mm x 2-4mm	Juveniles narrow lanceolate & opposite. Adult narrow lanceolate green glossy or semi-glossy & concolorous	Forest & woodland in granite country from Ebor west	Similar to New England Blackbutt but occurs on higher granite country in west of plateau (e.g Cathedral Rocks)	
	Acacia-leaved Peppermint <i>E. acaciaformis</i> Small to medium tree	Persistent on trunk and larger branches, grey to grey-brown, thick, shortly fibrous. Smooth grey above, shed in short ribbons	Hemispherical or bell shaped, small 3-5mm x 3-5mm, thin capsule with thin flat disc, valves level with rim or slightly exerted	7 per cluster ovoid or shortly spindle-shaped 3-5mm X 2-3mm	Juvenile leaves lanceolate, short (<5cm), dull grey with shallow, rounded teeth . Adult leaves narrow lanceolate, dull concolorous 5-12cm x 1-1.5cm	Forest & woodland in granite country from Ebor west . Can tolerate edges of montane wet heaths	Distinctive small to medium sized peppermint of granite country with distinctively toothed juvenile leaves	
	New England Peppermint <i>E. nova-anglica</i> Small to medium tree	Persistent on trunk and larger branches, grey to grey-brown, thick, shortly fibrous. Smooth above & shed in short ribbons	Conical with disc raised, 4-5mm x 4-5mm, valves exerted	4-5 per cluster, ovoid or shortly spindle-shaped, glaucous 4-5mm x 3-4mm	Sucker leaves broad heart-shaped, very glaucous, very aromatic . Adult leaves lanceolate 10-14cm, rather thin green or slightly glaucous to semi-glossy	Grassy woodland especially at higher altitudes near Ebor on broad, cold frosty flats . On both basalt and granite.	The conspicuous glaucous juvenile leaves and the restricted habitat makes this species distinctive	
	BOX	Coastal White Box <i>E. quadrangulata</i> Tall tree	Box-type bark (finely fibrous & flaky) persistent on trunk & branches. Grey with pale-grey to whitish patches . Above shedding in long ribbons	Conical or bell shaped 5-7mm x 4-6mm disc flat valves exerted	5-7 per cluster, ovoid or spindle shaped, 5-8mm x 3-4mm	Narrow-lanceolate, with irregularly toothed margins and marginal glands	WSF, mostly just below the rim of the escarpment (around 600m) e.g between the two escarpment waterfalls on Waterall Way	Toothed adult leaves and box bark are distinctive. Yellow Box , which occurs in woodland on western edge of area, does not retain box bark on as much trunk

EUCALYPT RECOGNITION

Key Features

There are a number of key features to look for when distinguishing one species of eucalypt from another:

Bark: Is the bark smooth or rough? Smooth barked eucalypts shed their bark each year (usually in summer). Is it shed in long ribbons or small patches? Is some rough bark retained at the base of the trunk? What colour and texture is the smooth bark. Rough barked eucalypts retain their bark. Is the rough bark stringy, shortly fibrous, or box-like (i.e. finely flaky-fibrous)? What colour is it? Does it extend as far as the smallest branches, or are the extremities smooth?

Fruit. Also called *receptacles*, capsules or 'gum nuts'. After the buds open and flower (see below) the base of the flower thickens and hardens to form the woody capsule. Is the fruit large or small? Note: sometimes the buds don't flower properly and if they remain on the branch they can be mistaken for smaller versions of the fruit. Do the little valves that open on the top to release the seeds stick out above the rim of the capsule (*exserted*) or are they enclosed within the rim of the capsule? Does the rim slope up (ascending) or down into the capsule (*descending*)? Is the fruit hemispherical, bell-shaped, urn-shaped or conical?

Location & Habitat: Where a eucalypt grows is very important for recognition. Of the 700-800 species only about 30 or so grow naturally on the Dorrigo Plateau. Species from other areas that have been planted are very difficult to distinguish. Each local species also has its preferred soil and tolerance of cold conditions. A table of species and their requisite soil-types and altitudes is included on the front of the guide.

Buds: The buds consist of a base (the floral tube) and a cap (*calyptra*) that falls off to reveal the stamens. What shape is the cap? Is it long and conical like a dunce's cap, rounded and peaked like a minaret or like one of Bib & Bub's caps? How many buds per flowering cluster (*umbellaster*).

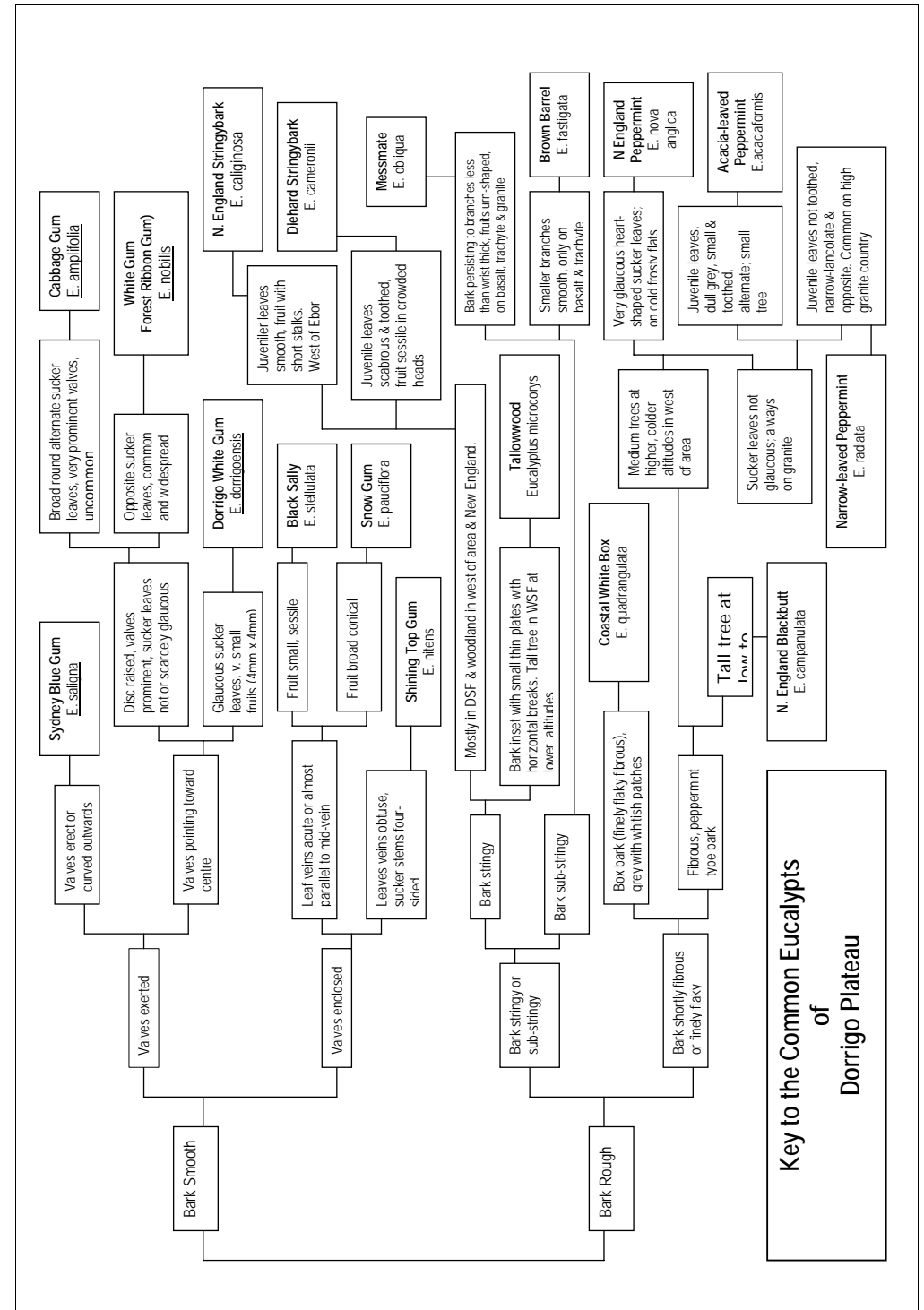
Leaves: Are the leaves the same on both sides (*concolourous*) or darker on top and paler below (*discolourous*)? Concolourous leaves are adapted to dry or cold conditions. Most local species are concolourous. Are the leaves opposite one another? Juvenile or sucker leaves are often opposite; adult leaves are alternate. Adult trees of some species may retain some juvenile leaves (e.g. Dorrigo White Gum). Are the veins evenly spaced? What angle do they make with the mid-vein? Are the leaves glaucous (i.e. waxy grey-blue on the surface). Juvenile leaves are often glaucous.

How to use the Table and Key.

This recognition guide gives two tools for eucalypt recognition: a table and a key. Both treat the bark as the primary feature. The table lists several features for each species. Prominent features are in bold type. The key is used by making a choice at each branching point in the 'tree', and following the chosen branch to the next branching point until you arrive at the identification. Note: Not all the Dorrigo Plateau species are included. Only the most common. The table and key will not work in the case of planted species from other regions.

Other Local Species not included: Silvertop Stringybark (*E. laevopinia*) in ranges in west of region at low to medium altitudes; Round-leaved Gum (*E. brunnea*) in ranges in west of area; Barren Mountain Mallee (*E. approximans*) only on trachyte on escarpment rim at high altitude; Brushbox (*Lophostemon confertus*), not strictly a eucalypt, occurs in WSF at lower altitudes.

Species Commonly Planted on Plateau: White Gum (*E. nobilis*), Shining Top Gum (*E. nitens*)
Dunn's White Gum (*E. dunnii*) State Forest plantations at lower altitudes.



Ecology & Distribution

One of the most important considerations in eucalypt recognition on the Dorrigo Plateau is location. This determines soil type and altitude, and eucalypt distribution is strongly determined by soil type & geology, altitude & temperature, and rainfall.

The volcanic basalt landscape and the associated ferrosols (red soil) is notable among Australian landscapes for being dominated by rainforest. Only small areas of eucalypt forest occur on this kind of geology and the most common species is White Gum (or Forest Ribbon Gum) *E. nobilis*. Blue Gum also occurs on this soil as well. Less fertile volcanic soils derived from tuffaceous basalt and trachyte support White Gum and sometimes N.E. Blackbutt. Dorrigo White Gum. At higher, colder altitudes several other eucalypts occur, as shown in the table below.

Permian metasediments occur on the Eastern Dorrigo and the eastern fall of the escarpment, the upper reaches of the Little Murray, and west of Dundurrabin. Blue Gum, Tallowwood, N.E. Blackbutt, White Gum and Dorrigo White Gum, all occur on this type of country.

Granite occurs in two main areas, one at lower altitudes near Dundurrabin & Bostobrick and another at high altitudes near Ebor & Cathedral Rocks. The lower altitude granite shares many of its species with the metasediments. The high altitude granites have quite a distinctive suite of species including Narrow-leaved Peppermint and Acacia-leaved Peppermint.

Altitude	Basalt & Trachyte	Granite	Metasediments
600m-900m	White Gum, Blue Gum, N.E. Blackbutt e.g. Dorrigo, North Dorrigo, Fernbrook	N.E. Blackbutt, Tallowwood, White Gum, Dorrigo White Gum, Blue Gum, Cabbage Gum, Diehard Stringybark e.g. Dundurrabin-Bostobrick	N.E. Blackbutt, Tallowwood, White Gum, Dorrigo White Gum, Blue Gum e.g. Dangar Falls to Cascade and Lowanna
900m-1200m	Messmate, Brown Barrel, White Gum e.g. west from Nash's Rd near Deervale.	Not applicable	NE Stringybark e.g. west of Ebor to Armidale & Guyra
1200m-1500m	Messmate, Brown Barrel, White Gum, Snow Gum, Black Sally, NE Peppermint, Shining Top Gum. e.g. West from Deervale at higher altitudes	Narrow-leaved Peppermint, Acacia-leaved Peppermint, Messmate, NE Stringybark Youman's Stringybark, Snow Gum, Black Sally e.g. Ebor Falls & Cathedral Rocks	NE Stringybark e.g. west of Ebor to Armidale & Guyra

Further Reading

Bale, C.L. 1998 *Eucalypts and Angophoras of the North Coast of NSW*. (4th printing). Armidale, NSW: Botany Department, University of New England
 Florence, R.G. 1996. *Ecology & Silviculture of Eucalypt Forest*. Collingwood, Victoria: CSIRO Publishing
 Hall, Norman, Johnson R.D, Chippendale, G.M. 1975, *Forest Trees of Australia*. Canberra 1975: Australian Government Publishing Service
 Harden, Gwen J. 1991. *Flora of NSW* (Vol 2), Kensington, NSW: NSW University Press
 Hay, Ashley. 2002. *Gum: the story of eucalypts and their champions*. Sydney: Duffy & Snellgrove.
 Williams, Jann E., & Woinarski, John C. Z. (eds). 1997. *Eucalypt Ecology: Individuals to Ecosystems*. Cambridge: Cambridge University Press

This information booklet was prepared by Ross Macleay & Jan Parkin with the assistance of Northern Rivers Catchment Management Authority. & Bellinger Landcare.



EUCALYPTS OF THE DORRIGO PLATEAU

A guide to their recognition

What is a Eucalypt?

The word eucalypt, in its broad sense, refers to several similar and closely related groups (or genera) of trees. As well as the *Eucalyptus* genus, these include the Bloodwoods (*Corymbia*), the Angophoras (*Angophora*), Brush Box (*Lophostemon*) and Turpentine (*Syncarpia*). The term 'gum' is also applied to all of these, although it is also used more narrowly to refer to smooth-barked eucalypts.

The name *Eucalyptus* comes from the Greek meaning 'well capped' (*eu* - *calypt*). It refers to the little caps or *calyptas* that are shed from the buds to reveal the stamens. Only *Eucalyptus*, in the strict sense, and the Bloodwoods have this feature. Even so, Bloodwoods are believed to be more closely related to the *Angophora* than to the *Eucalyptus*. Only *Eucalyptus* and one species of *Lophostemon* occur on the Dorrigo Plateau. Bloodwoods tend to be tropical They occur on lower sites on the coast and also further inland. Angophoras occur on the coast but one species (*A. floribunda*) is on the tablelands.

Scope of This Guide

In its narrowest sense the term Dorrigo Plateau refers to the areas of volcanic soil around Dorrigo & North Dorrigo. This guide covers an area extending from Ebor & Cathedral Rocks in the southwest, Dundurrabin in the north west and Lowanna in the east.

