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## Eucalypts as bonsai: a summary of what we know

### Part 1 of 2. Introduction

I was surprised to find an active debate on AusBonsai about whether eucalypts are worth the effort they take to train.

Some posts suggest eucalypts are unsuitable for bonsai and/or not worth the trouble because of their (generally) large leaf size, their habit of dying back as a result of trimming, their tendency to resent having their roots pruned, difficulty with ramification and the difficulty of producing a high-quality bonsai design. Others point to the fact that there are many examples of beautiful eucalypt bonsai (see inset from *Wirrabara* on Peter H's tree winning BCI's 2020 Tree of the Year competition); and that while not all Australian natives will prove to be suitable for bonsai, unless we continue to experiment and learn we will not know which ones to avoid and which ones to use.

If the story of Peter's magnificent *Eucalyptus nicholii* doesn't convince you that eucalypts can be great bonsai material, surely the following information extracted from a brochure by the [Australian National Botanical Gardens](#) provides ample inspiration for bonsai artists to include eucalypts in their collection:

**“eucalypts are a defining feature of much of the Australian landscape and an essential part of Australian culture. They dominate the tree flora of Australia and provide habitat and food for many native animals.**

**Of the over 850 eucalypt species known, almost all are native only to Australia. Some species have a wide geographic distribution; others are extremely restricted in their natural habitat and need conservation.**

**But not all eucalypts are *Eucalyptus*. The term ‘eucalypt’ refers to three closely-related genera of the Myrtaceae family – *Eucalyptus* with 758 species, *Corymbia* with 93 species and *Angophora* with 10 species. Colloquially they are all called ‘gum trees’.”**

### Views posted to AusBonsai

During the latter part of 2019, I trawled through the 1,000-plus posts on [AusBonsai](#) on eucalypts,

extracted a summary and in February 2020 [posted it to AusBonsai](#).

The following information comes largely from that summary but is tailored to the Canberra climate, and draws heavily on posts by CBS members. Three key themes are:

- Bonsai artists strive to grow a tree in a pot that captures the essence of those in nature. This is not easy with eucalypts, but some people have done it well.
- Some traditional bonsai techniques do not appear to suite the growing of eucalypts as bonsai.
- This paper summarises current knowledge and sets a basis for bonsai growers in the Canberra region to extend our knowledge.

#### ***Eucalypt wins BCI Tree of the Year 2020***

On 1 June, Bonsai Clubs International announced the winner of its [2020 Tree of the Year Contest](#) is Peter's *Eucalyptus nicholii*.



The tree is styled as a natural *Eucalyptus*, 90 cm high, in a Pat Kennedy pot.

The tree was found at a Canberra tip in 1995. It was in very little soil and full of mealy bug and sooty mildew disease. Peter nurtured it to health and over the past 20 years has styled it like the gum trees in his local area.

Over the years Peter has had to battle with dieback as it lost some of its original branches.

Doesn't it embody the spirit of the countryside around us? Doesn't it make your heart leap?



The concerns expressed on AusBonsai about the suitability of eucalypts for bonsai are, nonetheless, real. They clearly come from experience. This points to the obvious reality that we have much to learn about the training of eucalypts as bonsai.






### ***Species suitable for bonsai***





It is not known how many species of eucalypt are suitable for bonsai (posts on AusBonsai report over 40 are being worked on) but there is a general view that it is best to grow species that are native to your local area, or at least grow in a climate similar to your own.






The following list (in alphabetical order) records species that are being grown as bonsai in Canberra.






Unless otherwise specified, the accompanying photographs come from: (a) the [Australian National Botanical Gardens](#) image library or (b) [Trees of Stanford](#) (Stanford University). The (somewhat random) snippets come from a range of sources, as shown. Together they show some of the wonderful diversity of Australian eucalypts.





| Botanical name  | Common name   |
|---|---|
| <i>A. costata</i>   | Smooth-barked apple   |
| On display at the NBPCA. Photograph by Leigh Taafe  |  |
| <i>C. nesophila</i> syn. <i>E. nesophila</i>  | Melville Island bloodwood   |
| Endemic to northern Australia. It has rough, tessellated bark, lance-shaped or curved adult leaves. Source: <a href="#">Wikipedia</a> . |  |


| Botanical name  | Common name   |
|---|---|
| <i>E. botryoides</i>  | Bangalay, or Southern mahogany  |
| Botrys is Greek for grape and botryoides means like a bunch of grapes. Photograph source shows fruit capsules. (b)                        |    |
| <i>E. bridgesiana</i>   | Apple box   |
| The grey furrowed bark resembles that of the apple tree. <a href="#">Plants of South Eastern New South Wales</a>                          |    |
| <i>E. caesia</i> ssp <i>caesia</i> ; <i>caesia</i> 'Silver Princess'  | Caesia Silver Princess  |
| Has a weeping habit and a silver, white powder substance that covers the branches. Source: (a)  |   |
| <i>E. cinerea</i>   | Argyle apple  |
| It has rough, fibrous bark; juvenile leaves are egg-shaped; white flowers. Source (a) and <a href="#">Wikipedia</a>                       |  |
| <i>E. crebra</i>  | Narrow-leaved ironbark  |
| It has hard, rough "ironbark" from its trunk to small branches and linear to lance-shaped adult leaves. Source: <a href="#">Wikipedia</a> |  |

| Botanical name  | Common name   |
|---|---|
| <p><i>E. crenulata</i></p> <p>Classified as rare because it is only known from two small forest reserves near Buxton, northwest of Melbourne, but is widely cultivated. Source (a) and <a href="http://Austplants.com.au">Austplants.com.au</a></p> | <p>Buxton gum, silver gum or Victorian silver gum</p>  |
| <p><i>E. gunnii</i></p> <p>In the Hobart Town Almanac for 1830 we read that the name 'cider-tree' comes from its extruding of a quantity of "saccharine liquid resembling molasses." Source (a) (b)</p>   | <p>Cider gum</p>                                      |
| <p><i>E. kruseana</i></p> <p>It is one of three or so eucalypts that retain juvenile foliage indefinitely, and it is the only eucalypt with petals. Source: (a) (b)</p>   | <p>Book-leaf mallee</p>                              |
| <p><i>E. mannifera</i></p> <p>Its main attraction is its smooth white trunk, often mottled with patches of grey, which changes to a pink colour in late spring or summer. Source (a)</p>  | <p>Brittle gum</p>                                   |

| Botanical name  | Common name   |
|---|---|
| <p><i>E. melliodora</i></p> <p>Yellow box tends to flower in alternate years. The 'yellow' refers to the sapwood colour and the 'box' to the non-peeling, finely matted bark texture. Source (a) (b)</p>                        | <p>Yellow box</p>                |
| <p><i>E. nicholli</i></p> <p>Peter H's <i>E. nicholli</i> on display at the ANBG in 2005. Source (a)</p>  | <p>Narrow-leaved peppermint</p>  |
| <p><i>E. orbifolia</i></p> <p>A large shrub or small tree. The oval-shaped, grey-green leaves are 25-40 mm long by about 15-40 mm wide. Creamy white flowers 20-25 mm diameter. Source: ANSPA</p>                               | <p>Round-leaved mallee</p>     |
| <p><i>E. parvula</i> Syn. <i>E. parvifolia</i></p> <p>Has attractive, opposite, bluish juvenile leaves 2½ cm long. Adult leaves are narrow and 6 cm long. Source: (a) (b)</p>   | <p>Small-leaved gum</p>        |
| <p><i>E. pauciflora</i> ssp <i>niphophila</i></p> <p>It has smooth bark, glossy green elliptical leaves. Has smaller leaves than other subspecies of <i>E. pauciflora</i>. Source: <a href="http://Wikipedia">Wikipedia</a></p> | <p>Snow gum</p>                |

| Botanical name  | Common name   |
|---|---|
| <i>E. pauciflora</i> ssp<br><i>pauciflora</i>   | Snow gum white sallee   |
| Medium upright tree with smooth white bark, branchlets waxy. Trees in sub-alpine areas have crooked lower branching trunks. Source: (a) <a href="#">Cardinia Shire</a> (Vic)          |    |
| <i>E. polyanthemos</i>  | Red box   |
| Leaves are often coloured blue by a fine wax that cold-climate eucalypts often secrete for protection. Juvenile leaves almost circular; mature leaves are lanceolate. Source: (a) (b) |    |
| <i>E. punctata</i>  | Grey gum  |
| Typically grows to a height of 35 m and forms a lignotuber. It has smooth grey, brown or cream-coloured bark that is shed in patches. Source: (a) <a href="#">Wikipedia</a> .         |  |
| <i>E. robusta</i>   | Swamp mahogany  |
| this tree has rough, fibrous bark, and leaves that are glossy above and paler below. Source: (a) (b)  |  |
| <i>E. rubida</i>  | Candlebark  |
| It has smooth bark, sometimes with rough bark at the base, lance-shaped adult leaves. Juvenile leaves more or less round. Source: (a) <a href="#">Wikipedia</a>                       |  |

| Botanical name  | Common name   |
|---|---|
| <i>E. scoparia</i>  | Wallangarra white gum or willow gum   |
| A small to medium-sized tree restricted to a few rocky mountains near the border between NSW and Queensland but is widely cultivated. Source (a) <a href="#">Wikipedia</a>  |    |
| <i>E. sideroxylon</i>   | Red ironbark  |
| Red Ironbark has very hard wood that has been used for heavy construction and railway sleepers. The foliage is dull, greyish-green in colour. Source: (a) <a href="#">ANSPA</a>   |    |
| <i>E. spathulata</i>  | Swamp mallet  |
| <i>E. spathulata</i> is a mallet: a small-tree form of Eucalyptus found in Western Australia. Unlike the mallee, it is single-stemmed and lacks a lignotuber. Source: (a) <a href="#">Wikipedia</a>                                     |  |
| <i>E. stellulata</i>  | Black sallee  |
| A small tree or mallee endemic to higher altitude regions of SE Australia. It has rough bark on the lower part of the trunk and smooth greenish bark above and lance-shaped to elliptical leaves. Source: (a) <a href="#">Wikipedia</a> |  |

| Botanical name   | Common name  |
|--|--------------|
| <i>E. viridis</i>  | Green mallee |
| <p>This plant can either be a shrub or small tree (2 to 9m tall). It has a lignotuber with one to many trunks. The leaves are narrow and about 12cm long.<br/>Source (a)</p> |              |
|   |              |

The following species are all mentioned on AusBonsai and may or may not grow well in Canberra.

*A. bakeri*, *A. floribunda*, *A. hispida*, *C. citriodora*, *C. ficifolia*, *C. maculata*, *E. calygonia*, *E. camaldulensis*, *E. camphora*, *E. coccifera*, *E. curtisii*, *E. dalrympleana*, *E. elata*, *E. maculata*, *E. parramattensis*, *E. pulchella*, *E. saligna*, *E. sclaphora*, *E. tereticornis*, *E. vernicosa*

## Leaves

Many eucalypts tend to have large leaves, so it is no surprise that one of the key issues discussed on AusBonsai is the capacity to reduce leaf size.

According to posts on AusBonsai, species that have naturally small leaves include: *E. archeri*, *E. bridgesiana*, *E. camaldulensis*, *E. crenulata*, *E. crebra*, *E. dalrympleana*, *E. eugenoides*, *E. nicholi*, *E. parvula*, *E. punctata*.

Using techniques described below, posts on AusBonsai report successfully reducing the leaf size of: *C. citriodora*, *C. maculata*, *C. ficifolia*, *E. archeri*, *E. bridgesiana*, *E. crebra*, *E. crenulata*, *E. eugenoides*, *E. nicholi*, *E. punctata*.

Techniques for reducing leaf size include:

- Removing large leaves, leaving the smaller leaves to supply the trees nourishment.
- Removing 90% of leaves (*E. punctata*) then again about 4 or 5 weeks later. This second defoliation appears to keep the next sets of leaves permanently small.
- Pinching out the very first tiny leaflets as they emerge (*C. citriodora*).
- Continuously letting the shoots grow out to about 4 pairs then cutting back to the tiny first pair of leaves (*E. camaldulensis*).

It is not known if any (or all) of these techniques are suitable for all species of eucalypt. Note that one experienced CBS grower says that, in his experience, such techniques won't work with 'all' species, and in some cases, they will work with some individuals of a species but not others.

The different types of leaves are variously, and somewhat inconsistently, defined in the literature, but all use descriptive words that reference the shape of the leaf (e.g. lanceolate: shaped like a lance tip; ovate; alternate; oblong; elliptical etc.). The following photographs show some of the variation in eucalypt leaves.

*E. saligna*  
growing at the  
[ANBG](#).



*E. crenulata*.  
Source  
[Australian Seed](#)

*E. pleurocarpa*.  
Source: [ANBG](#).





*E. polyanthemos*  
Juvenile leaves.  
Source: [ANBG](#)

Because of the tendency for eucalypts to have large leaves, many growers say eucalypts usually look better grown as larger bonsai. Some, however, are training eucalypts as shohin. It clearly depends on the species and the technique being used.

### Juvenile foliage

The juvenile and adult foliage on some eucalypts varies. This is relevant to bonsai in a couple of ways:

- Regularly pruned trees can retain juvenile foliage throughout their lives; if the juvenile leaf is small and attractive that can be a good thing. It is possible, however, for an older eucalypt bonsai to have juvenile foliage and mature bark, which could appear to be a little incongruous. But consider the regrowth on a mature tree with mature bark after a fire: it can be of the immature form, in which case there is no incongruity, just the telling of a different story.
- Identifying seedlings can be difficult. The leaves are often completely different to the adult leaves so checking leaf shape against references of adult leaf shape will prove misleading and usually fruitless. E.g. the adult leaves of *E. globulus* (Blue gum) are very long and green colour while juvenile leaves are blue and rounded. Note that there are books on eucalypts that describe and illustrate both mature and juvenile leaves.

### Defoliation

It is safe to defoliate eucalypts, but as always, follow the general advice (see the article 'Defoliation' in the CBS Knowledgebase).

Advice about the appropriate timing for defoliation varies from region to region. As a general rule, however, you should not defoliate until the leaves have hardened off and there should be a good 6 weeks left in the growing season to allow the new leaves to mature.

### Fertilising

Eucalypts do not produce proteoid roots, so they should be fertilised normally. See the article 'Fertilising' in the CBS Knowledgebase for advice on fertilising.

### Re-potting

Some, but not all, experienced growers are happy to re-pot and do heavy pruning in the same year. One grower who does re-pot every year and prune hard at the same time, acknowledges that his trees are all younger than 10 years and growing strongly. It is possible that this may not work for an older tree. Another gap in our knowledge!

But remember that it is common for natives to be developed by 'slip potting': just extract the entire root ball, keeping it as intact as possible (losing some mix does not usually cause problems) from the existing pot and place it into a new, larger pot then top up with the required amount of mix. Because it does not involve cutting roots you can slip pot any plant any time of year.

Although growers in warmer climates indicate that it is safe to re-pot eucalypts at any time throughout the year, experienced CBS growers unanimously recommend re-potting in the hotter months in the Canberra climate when the day temperature is between 25-30 degrees C.

Most agree that re-potting from late spring to early summer (November - December) is best, but some also report safely re-potting eucalypts through to mid-January.

The warmer temperatures seem to help grow new roots. Re-potting in autumn does not give the trees enough time to establish a strong root system and a good foliage cover for winter, which can stress the tree.

Re-potting in winter is not recommended in Canberra. However, some observations of root growth in Canberra eucalypts growing in bonsai pots, showed that root growth varied between individuals of the same species. Some grew strongly in winter, while in the next pot, the same species did not grow roots in winter. Another area where we need more observations.

One post from a CBS member says it is a good idea to take cues from nature: 'I take note of the flowering and bark-peel stages of the natural tree of

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the species I am training as bonsai and do my re-potting after flowering and I avoid re-potting or punning while the tree is going through its bark-peel stage.' Others do not time their re-potting to these cues.

Multiple posts on AusBonsai from growers experienced with eucalypts dispute the idea that they resent having their roots trimmed. This is not a unanimous view, however, as one grower with about 30 years of growing eucalypts says it is not unusual for a eucalypt to react adversely to root interference.

This inconsistent advice points to another gap in our knowledge. e.g.: Does the problem occur in a particular species? Were the 'problem' species native to the grower's local area? Did those who report problems with root-pruning eucalypts follow appropriate re-potting techniques and provide good after-care?

In the case of tube stock, make sure there are plenty of fibrous roots before removing the taproot. They need the fibrous roots to feed themselves.

Plants in forestry tubes will need more drastic root reduction than those in wider pots because it is usually hard to separate roots to get some horizontal roots in the tube seedlings. Trees in wider pots usually have some lateral roots that can be left on.

One post on AusBonsai says that once a eucalypt has a trunk diameter of about 1cm or more, it is very hard to kill it by root removal.

Another post says that, as with other species younger eucalypts can be cut harder than older ones.

Some growers report removing  $\frac{3}{4}$  of the roots from some eucalypts with no ill effect.

One grower removed all roots from an *E. camaldulensis* just leaving the lignotuber and it survived.

Multiple posts on AusBonsai report no problems with reducing eucalypt roots by half.

How much you take off and how you do it will be dictated by what you find in that root ball. If there is only one long root coiled around you will need to think carefully, but it is still best to cut it, re-pot (and keep your fingers crossed).

Try to remove thicker roots and any vertical ones and leave laterals and feeder roots.

Multiple posts from experienced growers indicate that eucalypts can be bare-rooted.


### After-care

The general rules for after-care apply to eucalypts, but a notable theme of AusBonsai posts is that a eucalypt must be well watered following a root-prune.

Multiple posts say eucalypts must remain wet for 3-6 weeks after re-potting.

Some do this by watering more than once a day. Others sit the re-potted tree in a shallow water bath that fully evaporates every day. Plenty of water but not water-logged.

*End of part 1 of Eucalypts as bonsai. Part 2 will be published next month.*

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