

Eucalyptus Study Group Newsletter

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Growing Eucalypts from seed

Source: The Hardy Eucalyptus Page; <http://www.angelfire.com/bc/eucalyptus/seed.html>

Seed propagation is by far the most common way to raise hardy eucs for ornamental purposes. Cuttings are usually very difficult to root, and tissue culture and grafting are seldom used except in forestry operations. So seed is definitely the route to go for most any nurseryman or hobbyist. Eucs are not difficult to raise from seed provided a few simple guidelines are followed.

SEED HARVESTING: (This step can of course be skipped entirely if you order seed from a seed company.) After eucs flower, seed capsules (or "pods") develop in the place of the spent flowers. These take a couple months to ripen before the seed inside is viable. When the capsule is ripe, it should be fully developed so that scars are visible on the face of the capsule. These will open to release the seed. The seed is usually very fine and may be brown, black, tan or orange, often with multiple colours coming from the same capsule (and mixed into the same seed packet). (The entire capsule should not be planted.)

(continued below pictures. . .)



Here are four very close-up photos showing examples of *Eucalyptus* seed. At the upper left is seed of *E. cordata*, showing the variety in the shapes, colors and sizes that can occur in the seed of a single species. At the upper right is *E. paliformis*, which has very uniform seed; and at the lower left is *E. regnans*. The lower right picture (either *E. viminalis* or *E. dalrympleana*) shows the difference in size between the seed and seed capsules of eucs. The seed are really quite small.





More examples of *Eucalyptus* seed capsules: *E. urnigera* (upper left), *E. obliqua* (upper right), *E. camaldulensis* (lower left), and *E. globulus* ssp. *globulus* (lower right).

The seed capsules seldom release their seed when humidity is high and temperatures are cool. In order for them to open, they must be kept in a warm, very dry place (most indoor environments will suffice) for several days. If this does not work, the capsules can be put in a microwave for a minute or two. I would caution against microwaving them longer than that, or they may catch on fire. Because of this risk, use only earthenware containers to hold the seed capsules when microwaving - not plastic. Even after this treatment, the seed may need some encouragement to come out of the capsules using a knife or pen tip, if it doesn't just fall out. Once the seed is out, it can be bagged and stored somewhere cool, and the capsules discarded (although it can be a good idea to keep the capsules in case they are needed to confirm the identity of the parent tree).

When choosing a tree to harvest from, I would strongly suggest making a note of any known provenance information about the parent tree, and recording some of its features, especially if they are noteworthy.

SEED STORAGE: Any seed not sown immediately upon receipt should be stored in a refrigerator at a temperature of 35 - 40°F. Some species will keep for many years, but there are a few that seem to have a much shorter shelf life. Seed kept in a hot greenhouse can lose its viability in a period of just a few months.

SEED STRATIFICATION: Seed of many of the hardier *Eucalyptus* species must be cold-stratified before it will germinate well. Some species will not germinate without stratification, and some will provide a much better germination rate with stratification than without. Many species do not require stratification at all (refer to lists below).

Stratification involves complex chemical processes that I will not go into detail about here. The basic idea behind the whole thing is that the seed must be kept cold and wet for a certain period of time, so that it will "think" it is winter. Once brought back into the warmth again, the seed is more inclined to germinate because it will "think" it is spring. Spring of course is the time of year when plants in general like to start growing, so they can establish as well as possible by the coming winter. The chemical inhibitors that prevent euc seed from being able to germinate at other times of the year (unless stratified) are in place for this reason.

Since there is no easy logical way to tell which species require stratification and which do not, I have compiled a list of the number of weeks for which the seed of each species needs stratification, if it needs it at all. This list has been derived from my own limited experience, and the experience of various seed companies, and will be updated periodically as I find out more. Because the reports of some of my sources and my experience are often contradictory, there are many species I am unsure of. (In any case it would seem that euc seed of some species is not fussy and can be germinated with a variety of treatments. Please

share your experience.) When in doubt, I generally tend to err towards a longer stratification period. It usually does not hurt euc seed to be stratified longer than necessary, or to stratify it if it doesn't need stratification at all.

The grey chart following this paragraph lists stratification times for species that require it. The species that are not listed below do not require stratification. Such species would include *E. acaciiformis*, *E. angophoroides*, *E. barberi*, *E. bridgesiana*, *E. brookeriana*, *E. camaldulensis*, *E. camphora*, *E. cephalocarpa*, *E. cinerea*, *E. cordata*, *E. dunnii*, *E. elata*, *E. goniocalyx*, *E. gunnii*, *E. gunnii* ssp. *archeri*, *E. kitsoniana*, *E. leucoxylon*, *E. macrocarpa*, *E. mannifera* and its subspecies, *E. microtheca*, *E. neglecta*, *E. nicholii*, *E. nova-anglica*, *E. parvula*, *E. polyanthemos*, *E. pryoriana*, *E. pulchella*, *E. risdonii*, *E. scoparia*, *E. urnigera*, and *E. viminalis*. These species will all give good germination without stratification, provided of course the seed is viable. In addition to these, there are also some species excluded from the list because they are rare, and I do not know whether they require stratification or not.

Euc Species	Stratification? Period if known
<i>E. alpina</i>	6 weeks
<i>E. aggregata</i>	4 weeks (not crucial)
<i>E. apiculata</i>	recommended
<i>E. approximans</i>	recommended
<i>E. coccifera</i>	6 weeks
<i>E. crenulata</i>	4 weeks
<i>E. cypellocarpa</i>	recommended
<i>E. dalrympleana</i>	4 weeks (not crucial)
<i>E. delegatensis</i>	8 weeks, or all winter
<i>E. denticulata</i>	recommended
<i>E. fastigiata</i>	recommended
<i>E. fraxinoides</i>	3 weeks
<i>E. glaucescens</i>	6 weeks
<i>E. globulus</i>	3 weeks (not crucial)
<i>E. gregsoniana</i>	4 weeks
<i>E. johnstonii</i>	4 weeks
<i>E. kybeanensis</i>	4 weeks
<i>E. lacrimans</i>	6 weeks?
<i>E. laevopinea</i>	recommended
<i>E. lingustrina</i>	recommended
<i>E. macarthurii</i>	4 weeks (not crucial)
<i>E. melliodora</i>	3 weeks (not crucial)
<i>E. mitchelliana</i>	5 weeks
<i>E. moorei</i>	recommended (5 weeks)
<i>E. nitens</i>	4 weeks
<i>E. nitida</i>	6 weeks
<i>E. obliqua</i>	4 weeks
<i>E. olsenii</i>	4 weeks
<i>E. ovata</i>	6 weeks?
<i>E. paliformis</i>	4 weeks (not crucial)
<i>E. pauciflora</i> and subspecies	6 weeks
<i>E. perriniana</i>	4 weeks
<i>E. pulverulenta</i>	4 weeks (not crucial)
<i>E. radiata</i>	possibly recommended

<i>E. regnans</i>	4 weeks
<i>E. rodwayi</i>	4 weeks (not crucial)
<i>E. rubida</i>	4 weeks (not crucial)
<i>E. rupicola</i>	recommended
<i>E. saxitilis</i>	recommended (6 weeks)
<i>E. spectatrix</i>	recommended
<i>E. stellulata</i>	5 weeks
<i>E. stentosoma</i>	recommended
<i>E. strzeleckii</i>	recommended
<i>E. subcrenulata</i>	4 weeks
<i>E. tenuiramis</i>	4 weeks?
<i>E. vernicosa</i>	6 weeks
<i>E. willisii</i>	recommended
<i>E. yarraensis</i>	possibly recommended
<i>E. youmanii</i>	recommended

STRATIFICATION TECHNIQUES: The most common way to stratify the seed is to put it in the refrigerator. It must be kept moist at all times and have some air space. Many people have placed the seed between layers of moist paper towel in a plastic bag, but I have found it difficult to maintain the air space in the bag. And if you don't use a bag, you will likely lose the moisture, which ruins the seed. Another option is to place the already-sown seed, with soil, pots, and all, in the refrigerator. The only drawback to this is that it takes up a lot of precious refrigerator space.

Another alternative is to sow the seed outdoors in the autumn and allow it to undergo stratification naturally from the cool temperatures and wet conditions common to most temperate regions in winter. The seed will then sprout at some point in the spring. It is OK if the seed freezes before it germinates. This technique generally requires less monitoring of the seed to ensure that it is moist, and has the advantage of not taking up any refrigerator space. It is especially effective for species requiring a longer stratification period, such as *E. pauciflora* and its subspecies, *E. coccifera* and especially *E. delegatensis*.

When you are stratifying, remember to time it so that the seed will be ready to germinate and the plants ready to plant at the desired time of the year.

PLANTING THE SEED: Eucs are really quite easy to grow from seed compared to a lot of other woody plants and trees, and not all that fussy. The seed sprouts as readily as that of many common annuals and perennials. It is important to use a light potting mix of relatively neutral pH that will not pack down or get crusty on the top. Beyond that, there is really nothing particularly difficult about it.

The seed should be sown on top of the soil surface, and then covered with a fine layer of sand, just enough to keep the seed from being exposed to the light. (A fine layer of soil can also be used, but the use of sand greatly diminishes the risk of damping off.) Like most other seeds, they need to be kept moist but not wet. Using bottom heat to raise the soil temperature is not necessary, and in fact hinders germination of some of the alpine species. I have had seeds sprout outdoors in March at my home in cool rainy Washington. The ideal germination temperature is around 65°F for the forest species and 60°F for the alpine species. The more tender, showy-flowered species listed on this page from warmer regions of Australia should probably be kept at a temperature of 70°F or so to germinate, and should not be stratified.

It is important that the seedlings be placed in bright light immediately after germination. The seed may be started indoors, but it must be moved outdoors, or into a *very* sunny window, immediately after they begin to sprout. This can present a difficulty for a hobbyist wishing to start the seed in winter.

NURSERY PRACTICE: The seed can be sown individually in pots, but since they are so small and rather difficult to handle, I usually sow a large number of seeds in one small (4" or so) pot. They can then be popped out of the pot all together, separated, and potted up individually. Planting them in larger flats or seed trays also works, so long as your medium is light enough that all the roots come up without breaking off. The time to separate them or prick them out is when the first pair of true leaves (after the cotelydons, which are the first two seedling leaves) have fully expanded and the second is showing. (However it is also OK to wait a little longer than this.) I suggest potting them directly into 1-gallon pots, but smaller pots can also be used so long as they are to be planted out even sooner after that. Do not stake the young trees. The composition of the soil media is not that important; eucs will grow happily in the same media as other woody plants. I suggest that the media should be mixed with the appropriate amount of granular 5-10-10 fertilizer with micronutrients.

(continued below pictures. . .)



A typical example of a *Eucalyptus* seedling. The first set of leaves, which have now fully expanded, are the cotelydons, and the second set of leaves is starting to develop. The cotelydons may be of a somewhat different shape than this in many species. This picture is magnified almost 2X life size - the seedlings are very small when they first appear.



These seedlings of *Eucalyptus vernicosa* have been sown in a 4" pot. A couple sets of leaves are showing, so they are ready to be separated and potted on.



These *Eucalyptus perriniana* have been sown in a large flat. Although they are very overdue for potting on (3-5 sets of leaves have expanded), they might still make suitable plants if they can be separated without too much root breakage.



Eucs being grown in "D4" pots - these are about 4" across and 6" deep - at Steamboat Island Nursery, Olympia, WA. This picture was taken in late spring and the sides of the greenhouse have been opened up to prevent it from getting too hot.



Eucalyptus glaucescens in a 1-gallon pot. This plant is just slightly larger than would be ideal for planting out or selling.

If they are grown in the spring, they should be ready for planting out (10 - 14" tall) in about 10 - 18 weeks from when the seed is sown. Plan on about 12 - 14 weeks for most species. This is important to know so

that you can have plants ready at the right time of the year. (These time periods do not apply if sowing the seed in the autumn, as noted below.)

If larger plants (16 - 20" tall) are desired, pot them into 2 gallon pots when they reach about 5 - 6" tall, taking care to straighten any roots that have reached the edge of the pot and grown sideways. Once they reach about 20 - 24" tall they should be planted immediately, or their growth will be set back. (It may be heartbreaking for the nurseryman to compost trees that get too large, when money could still be made off of them from customers who don't know any better than to plant large eucs. However I consider this to be the integritous practice in euc growing. Perhaps this means the nurseryman needs to work on promotion so they all sell on time!)

I have mentioned that it is possible to grow eucs somewhat larger and not have problems with their growth being set back. But the buyer (and hopefully the nurseryman/grower) must be cautious about this. One way to encourage the development of a strong root system for the size of the top growth is to use less nitrogen than would be used on most other woody plants. The potted euc should not be staked, and should be very sturdy with a large root system compared to the top of the plant. If it grows into a top-heavy thing that starts to lose a lot of its lower leaves, or if the trunk is weak, then it has grown too large to be suitable for planting.

Their water and temperature needs are relatively undemanding. In most temperate climates, they are grown in a cool greenhouse for late fall, winter, and early spring, and moved out of doors for the rest of the year. Temperature is really surprisingly unimportant; although it affects their growth rate (and temperature control can be a means of adjusting the timing of when the plants are ready), you are likely to get healthy eucs no matter what temperature you grow them at - so long as you don't let them freeze too hard while in pots. The only quirk to remember with watering is that although many euc species are very drought tolerant once established, they are not very drought tolerant in pots. If they are allowed to dry to the point of wilting, they usually die outright - the leaves cannot be restored and the entire plant often dies.

THE IMPORTANCE OF TIMING: The seed is commonly sown (or stratification finished) in February or March, so that the plants can be planted out and sold in late spring and early summer. However, I have also had success sowing the seed in early autumn. With the decreasing light levels, they grow much more slowly than they would in the spring. They can then be potted on in the greenhouse at some point over the winter, and be ready to go into the ground in early to mid spring, and thus get very large by the next fall.

If you are raising a large number of eucs to be grown in a cold winter climate where their hardiness will be put to the test, I strongly recommend timing stratification and sowing the seed so that they will be ready to plant in the ground about two weeks before the average date of the last spring frost. Doing so will allow the eucs to establish as well as possible and grow as large as possible before the next winter, so they will be better able to stand up to the cold temperatures. However, if you are willing to take a chance and hope for a mild winter, then it is OK to plant eucs at other times of the year.

Eucalyptus: the tallest and most productive trees on Earth...

By Celso Foelkel

We all know very well the great ability of the eucalyptus trees to grow in volume. After all, they are world leaders in forest productivity, when cultivated in plantations. By luck, but not incidentally, due to our technical expertise, these trees have elected the Brazilian lands for growing so fast and so efficiently. Here, they have found favorable ecosystems and appropriate conditions for growing: soils, climate, forest technology, research & development, and many enthusiastic people about them. All these factors were important to allow eucalyptus growth rates to reach averages of 40 – 50 m³/ha.year, with harvests from plantation ages 6 to 8 years. There are also improved commercial forests growing close to 60 m³/ha.year. In these cases, they are top genetically upgraded trees, with excellent silvicultural management.

However, few people are aware about the fact that the eucalyptus trees are also regarded as the tallest trees on Earth. Usually, when we talk about giant trees, immediately it comes to our minds, the images of the California redwoods (*Sequoia sempervirens*) or the Oregon Douglas-firs (*Pseudotsuga menziesii*). These trees are well known because they are protected in excellent American natural parks, and they have become important tourist attractions. Nevertheless, the tallest trees in the world are no longer alive, but they were eucalyptus trees. There are, and there were, fantastic giant trees in Australia, mainly in Tasmania. Some of the today's still alive giant trees, are threatened by their fragile health or because the harvest by humans, wondering to expand the agricultural frontier, or to export wood chips. Fortunately, the Australian government is taking strong measures to protect these trees, a world's natural heritage. The most common examples of the gigantic eucalyptus are those growing at the Styx, Florentine and Arve valleys, in Tasmania. The tallest trees are *Eucalyptus regnans*, *E.delegatensis*, *E.globulus*, *E.obliqua* and *E.viminalis*. In the Tasmanian valleys, there are still many healthy trees, with over 300 years of age, and over 80 meters in height. There are proven evidences that some of the eucalyptus giant trees were over 130 meters high. Two of them, (both *E.regnans*), are very famous, because they are considered to be the tallest trees ever measured by the man. One is known as "Ferguson tree", which died due to a forest fire. It was over 150 meters in height and the diameter was about 5.5 meters. Something unbelievable. Another example is the "Robinson tree", with 143 meters high. Today, we no longer have in Australia trees as high as these two. But, some "small giants", from 80 – 100 meters may be still found in the Australian continent.

To know more about these giant trees, to see incredible pictures, and to read some interesting articles, please, go to visit the indicated websites. I strongly suggest to you to visit all of them, because each one is going to surprise you, mainly with amazing and unexpected images of these trees.

http://engraved-on-his-hands.home.att.net/Stromata/Lganimal/Plants/Eucalyptus_regnans/OlderPhotos.htm

<http://members.optusnet.com.au/mruhsam>

<http://www.wilderness.org.au/campaigns/forests/tasmania/styx>

http://www.csir.co.za/plsql/ptl0002/PTL0002_PGE100_LOOSE_CONTENT?LOOSE_PAGE_NO=7010803#Tallest%20Tree%20Ever

http://weblog.greenpeace.org/tasmania/styx_background.html

http://www.forestrytas.com.au/forestrytas/pdf_files/tall_trees_survey_report.pdf

Corymbia maculata (Spotted Gum)

Source: Euclid, Eucalypts of Southern Australia, 2nd edition,
MIH Brooker, AV Slee, JR Connors, SM Duffy,
Centre for Plant Biodiversity Research. Australia

Eucalyptus maculata Hook., *Icon. Pl.* 7: 619 (1844).

Corymbia maculata (Hook.) K.D.Hill & L.A.S.Johnson, *Telopea* 6: 393 (1995). T: Maitland, N.S.W., *J.Backhouse* 37: syn: K, NSW; New Holland, *C.Fraser s.n.*; syn: K; Liverpool, N.S.W., *collector unknown*; syn: MEL; Newcastle, N.S.W., *?L.Leichhardt s.n.*; syn: MEL.

Tree to 45 m tall. Forming a lignotuber.

Bark smooth, mottled cream, yellow, blue-grey, pink-grey, to green-grey or brown, sometimes becoming granular with age.

Juvenile growth (coppice or field seedlings to 50 cm): stem rounded in cross-section; juvenile leaves always petiolate, opposite for 2 or 3 pairs then alternate, broadly ovate to lanceolate, 7-20 cm long, 3-7.5 cm wide, peltate for many nodes, base rounded at first, later tapering to petiole, green; stem, petiole and leaf scabrid until node 6-8.

Adult leaves alternate, petiole 1-2.5 cm long; blade lanceolate to falcate, 8-21 cm long, 1.2-3 cm wide, base tapering to petiole, concolorous, slightly glossy or dull, green, strongly pinnate-veined, densely to very densely reticulate, intramarginal vein parallel to and just within margin, oil glands island.

Inflorescences axillary compound, peduncles 0.3-2 cm long; buds 3, rarely 7, pedicellate, ovoid to pyriform to clavate, green to creamy, usually smooth, scar present or absent (outer operculum held to or almost to flowering, operculum scar therefore obvious only at late bud development if at all), operculum rounded to conical or beaked, stamens inflexed, anthers cuboid or cuneate, versatile, dorsifixed, dehiscent by longitudinal slits (non-confluent), style long, stigma blunt or mop-like, locules 3 or 4, the placentae each with 5 vertical ovule rows (sometimes indistinct); flowers white.

Fruit pedicellate, urceolate or barrel-shaped, 0.9-1.3 cm wide, disc descending, valves 3 or 4, enclosed.

Seed reddish black, 2-6 mm long, boat-shaped, dorsal surface smooth, not winged, hilum ventral.

Cultivated seedlings (measured at ca node 10): cotyledons reniform to orbicular; stems rounded in cross-section, scabrid; leaves always petiolate, peltate for at least 7 or 8 nodes, opposite for 3 nodes then alternate, ovate to broadly lanceolate, 5-16 cm long, 3.5-8 cm wide, base becoming rounded to tapering, more or less concolorous, dull, green. Leaves scabrid on underside and petiole until ca node 8.

NOTES

Eucalyptus maculata (Latin *maculatus*, spotted, from the characteristic bark).

A medium-sized to tall erect tree widespread along the coastal plains and hills of New South Wales, often on shales and slates, extending as far north as Coffs Harbour; also one stand in far eastern Victoria in the Mottle Range north-west of Orbost. Of the bloodwood group, it is easily recognised in the field by the erect trunks, smooth mottled bark and green crowns, often occurring in more or less pure stands. Inflorescences are in 3s along elongated, axillary rachises. Fruit are relatively large. Seeds are wingless, flattish, red-black, shiny and often with cracked seed coat.

Eucalyptus maculata belongs in *Eucalyptus* subgenus *Corymbia* section *Politaria* because cotyledons are orbicular, seedling and juvenile leaves have bristle glands, inflorescences are compound, buds retain the outer operculum until (or almost until) flowering and fruit have a broad descending disc and enclosed valves. Section *Politaria* consists of only three closely related species of forest tree – *E. maculata*, *E. citriodora* and *E. henryi*.

E. maculata is weakly separated from *E. citriodora* subsp. *variegata* which occurs north from Lismore in New South Wales to Maryborough, Chinchilla and the Carnarvon Range in Queensland. *E. maculata* has a more mottled trunk, often has slightly broader crown leaves and juvenile growth that is scabrid only on the lower leaves. *E. citriodora* subsp. *variegata* remains scabrid on comparatively taller regrowth. *E. maculata* differs from the more northerly *E. citriodora* subsp. *citriodora* (beyond the scope of this edition of EUCLID) most noticeably in the absence of lemon-scented volatile leaf oil.

The third species in the group, *E. henryi*, has comparatively coarse leaves, buds and fruit, and occurs within the range of *E. citriodora* subsp. *variegata*, from Whiporie, New South Wales to Helidon, Queensland. It has leaves to 4.5 cm wide and fruit to 1.5 cm wide.

USES

E. maculata is an important forest tree providing timber for heavy construction, pit props, housing, flooring, bent work, tool handles, preservative-treated poles, plywood and pulp. It flowers in winter and is important for winter honey production and maintenance of healthy hives. It is also grown as an ornamental.



Bark; *Corymbia maculata*



Flower, bud and leaves; *Corymbia maculata*

Largest Spotted Gum in the world; “Old Blotchy”

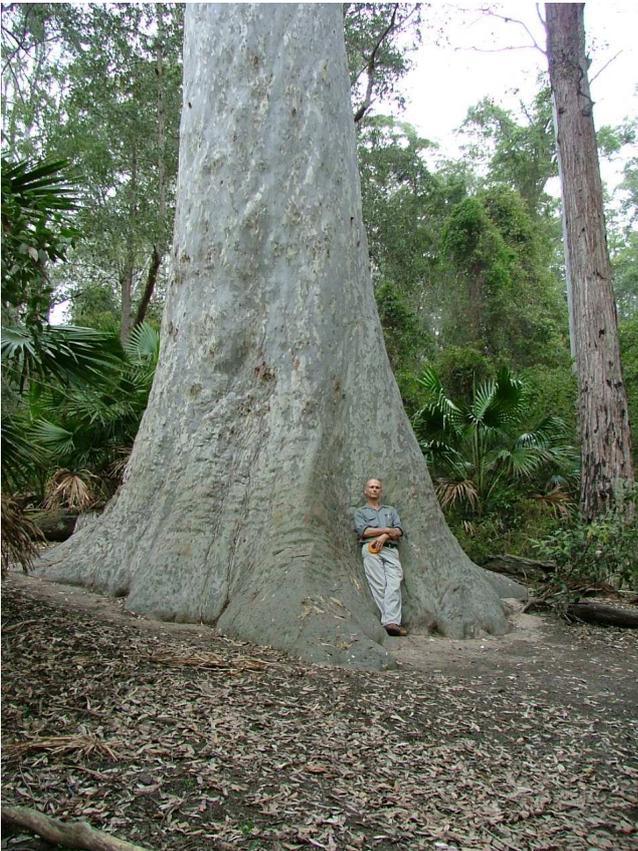
By Warwick Varley

Located within a State forestry reserve at Termeil, between Ulladulla and Batemans Bay on the south coast of NSW (and only 5 minutes of the Princes Hwy), the State Government has announced a decision to incorporate this tree (Old Blotchy) into the Murramarang National Park. This tree is estimated to be in excess of 400 years old, and is still within optimal condition and vigour. This tree has been listed on the ‘National Register of Big Trees’¹, and is well known throughout the local district having been named “Old Blotchy”. The tree has been measured as 59m high, with a crown spread of 30m and a stem circumference of 10.7m or 3.4m in diameter (as of 2008). Of most interest is not only the sheer size of the primary limbs that start at 30m above the ground, but the diameter that ranges up to 1m and the extent of inosculation (self grafting between the limbs) of these limbs. It is surprising that few cavities openings(hollows) appear to exist within a tree of such age, however the height and mass of the crown could surely contain more that are obscured from the ground.

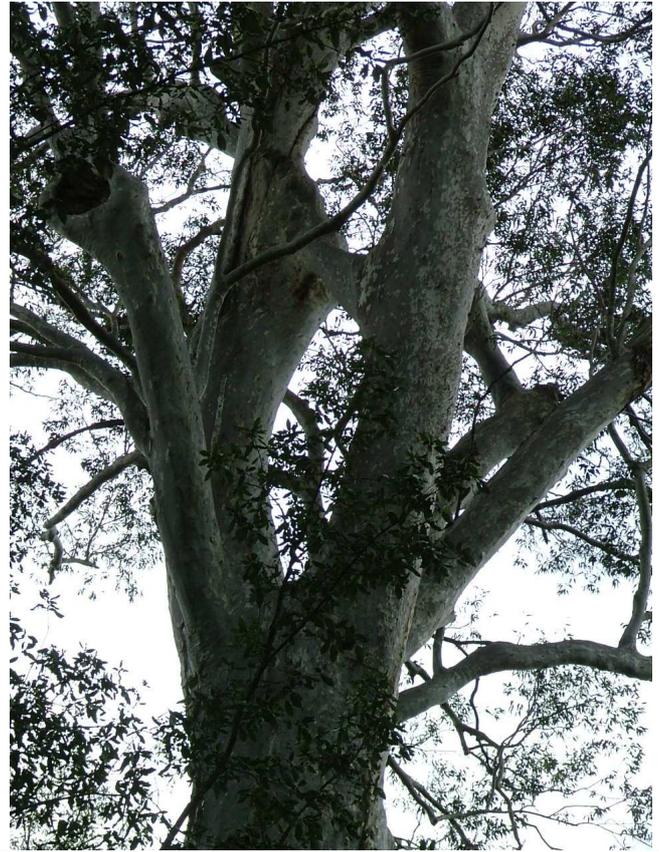
Photo 1 illustrates the scale of the trees girth (author standing at base)

Photo 2 provides the stem and crown

Photos 3 and 4 offer some examples of the limb inosculation



¹ http://www.nationalregisterofbigtrees.com.au/listing_view.php?listing_id=548



***Corymbia maculata* (Spotted Gum) Cultivars**

C/- *Speciality Trees*, Narre Warren East Victoria, <http://www.specialitytrees.com.au/>

***Corymbia maculata* 'Lowanna'**

A special selection from Sale in Victoria. A denser version of straight maculata and smaller in height distinctive feature bark. She spotted trunk that his cream and grey. The foliage is dark green it forms dense canopy. St has a small white flowers that clustered together.

Family: Myrtaceae

Mature size (Height x width): 10 x 7m

Form: Oval

Categories: Evergreen, native, shade tree, signature trees, specimen

Uses: great for streetscapes and all size garden, it is also used in parks and makes a great shade tree. Great habitat for native fauna.

Position and soil: can grow in infertile soils and dry sites but can also tolerate most all types.

Finally we have a traditional Australian selection truly local to our climate and guarantee to perform. *Corymbia maculata* 'Lowanna' is a grafted compact spotted gum that is worthy of fresh consideration. Unlike for Australian trade mark tree which grows to 30 meters, this newly discovered an improved selection grows conservatively to 10 m making it highly suitable for residential projects and larger suburban gardens.

Currently *Corymbia maculata* is used extensively as a Street tree, in car parks and in parks. It is highly sought after for its tough performance in a wide range of conditions and little nutrition is required to produce an excellent tree. It is highly adaptable in the urban environment being tolerant of soil compaction and pollution, but is often thought to be too large for residential planting. However the discovery of *Corymbia maculata* 'Lowanna' changes all that. And advanced material is available today.

The original 'Lowanna' selection was made in Gippsland Victoria. In maturity it exhibits excellent colour, intense flowering and a great compact form with a dense crown. Branch attachment is perfect. Specialty Trees grow 'Lowanna' in two different ways. Firstly, as a premium product through the grafting process, we can ensure a highly uniform clonal product ideal for high profile landscapes where assured plant performance is required. The second form is through seed which we have harvested from the parent tree and grown on to preserve the genetics of the original species.

In both cases the result is a highly improved tree with all the outstanding performance attributes of a straight *Corymbia maculata* but with compact height form. With attractive greenish grey pendulous leaves and a full and portly stature, 'Lowanna' has great spunk. It also has that magnificent to two toned pattern on its trunk so characteristic of a spotted gum.

Another cultivar of *Corymbia maculata* produced by Speciality Trees is listed below.

***Corymbia maculata* 'Toombah'**

compared to 'Lowanna', 'Toombah' is a much larger tree but full with good form. It has a spotted trunk that his cream and grey. The foliage is dark green that forms a dense canopy. Adult leaves are 10 to 20 cm long and lanceolate shape. It has small white flowers that clustered together.

Common name: Spotted gum

Mature size (Height x width): 30 x 10m

Form: Oval

Categories: Evergreen, native, shade tree, specimen

Uses: it is a large tree so prefers open streetscapes and larger gardens. It is also used in parks and makes a great shade tree. Great habitat for native fauna.

Position and soil: can grow in infertile soils and dry sites but can also tolerate most all types but must be will drain. Prefers a full sun position. Drought tolerant once established

Plant Profile; *Eucalyptus scoparia*

By Tony Popovich

***Eucalyptus scoparia*; H.Maiden(named and published)**

Common name: Wallangara White Gum, Willow Gum

Family: Myrtaceae

A very popular tree accompanying *Eucalyptus nicholii* at the time, as a popular native tree planted around the 1970's through to the 1980's. Due to its quick growing rate, its' shape, a small to mid - sized ornamental Eucalypt and its adaptability in various soil types and climates. A favourite as a street tree planting, in schools as a small native shade tree, used in confined spaces, massed planting and courtyards.

Origin

Eucalyptus scoparia a rare and endangered evergreen tree originates on very dry, well drained, granite, gravelly soils in clefts of granite outcrops on hills/mountain tops along the border between Queensland and NSW in the Wallangarra area eg. Girrawween National Park and a few other high peaks in the Wallangarra and Amiens areas

Eucalyptus scoparia is found within "The vegetation of granitic outcrop communities on the New England Batholith of eastern Australia"² often as scattered trees in open forest and woodland. Associated with

² The vegetation of granitic outcrop communities on the New England Batholith of eastern Australia. Cunninghamia 5 (3): 547-618.

species such as *Eucalyptus codonocarpa*, *E. prava*, *E. banksii*, *E. andrewsii*, *E. radiata* and *Callitris endlicheri*

The Granite hills/mountains are “further distinguished by its elevation, which makes it the coolest part of Queensland with its relatively low rainfall. Winter months can be very cold and night-time frost is very common. Bleak overcast conditions on rare occasions bring hail, sleet and snow”³.

“Compared to the rest of Australia, Wallangarra experiences far below average wind speed. Daytime temperatures, overnight temperatures, humidity levels, numbers of cloudy days and numbers of clear days are below average. Rainfall is average.

Summer in Wallangarra is between December and February and maximum daily temperatures average between 25.2 and 26.5°C with overnight minimums averaging between 13.3 and 14.7°C. Summer days are balmy, averaging around 26.5 °C in the hottest months.

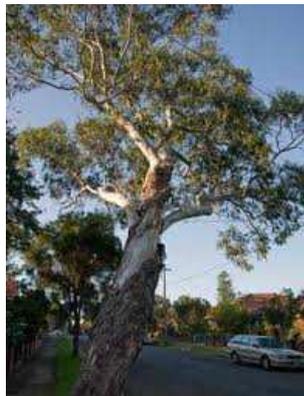
Winter is between June and August and maximum daily temperatures average between 13.9 and 15.3°C with overnight minimums averaging between 2 and 3°C. Winter days in Wallangarra are moderately cold but can be chilly if windy, dropping to around 13.9 °C.”⁴

Typical habit

A small to mid-sized Australian native tree, known for its slender branch habit and graceful willowy foliage. Ranging from 9m up to 20m in height x around 6m to 16m in width. 30m specimens have been recorded from Roberts Range where the trees naturally occur in the northern part of NSW.



A well formed street tree with no power lines and room to grow



Tree in stressed state with over head wires requiring pruning



Trees in their natural habitat

The trees' age span in the Sydney urban area appears to be 40 years plus based on known local street plantings carried out in the Burwood area around the 1970's. Some of these trees still thrive while some mature trees have died from what appears based on personal observations, have been due to the combination of physical and environmental factors eg. root damage due to nearby service trenching and path replacement, ongoing pruning beneath over head power lines and a poor growing environment (confined growing space). The decline of many trees recently in the area has been due to the Winter Bronzing Bug (*Thaumasticoris sp.*). Where the tree has been attacked by the insect in successive years and

³ http://en.wikipedia.org/wiki/Granite_Belt

⁴ <http://bonzle.com/c/a?a=p&p=410&wetgr=h&d=w&cmd=sp&c=1&x=151.92816&y=-28.92389&w=40000&mpsec=0>

has caused the tree to weaken resulting in dieback and death. The tree has known to be “unreliable without known causes”⁵.

Tree description

The name *scoparia* meaning “broom like” a reference to the slender habit is an evergreen, with an extremely attractive white to grey mottling smooth bark continues throughout the tree, with blue and pink stains prior to decorticating. As the tree decorticates the bark from the base of the tree up to 2 to 3m tends to hold on a little longer for older trees. The trunk diameter of a good mature tree is around 500mm. (based on referenced books refer to appendix and own my site experiences and local trees within the Croydon Park area).



Bark of *Eucalyptus scoparia* notice the pink stain.

The foliage is lush (glossy green), but the shade is not dense as the crown is quite spreading.



The lush (glossy green) leaves.

The juvenile leaves are sessile, opposite for several pairs, with a distinctive tapering to the petiole rather than being rounded at the base.

The adult leaves are alternately arranged, linear to narrow-lanceolate and pendulous/ willowly glossy green on both sides.

A monoecious tree with small creamy white flowers arranged in clusters (inflorescence) of 7 - flowered, during November to December (summer time). The small flower buds have a beaked or conical operculum and the fruit ovoid shaped, 5–7 mm long to 5–8 mm diam. with a prominent raised hemispherical disc, with slightly exerted broadly based valves.

Uses

⁵ Holliday, I and Watton, G (1980) A Gardener's Guide To Eucalypts, Rigby Publishers, Australia.

Eucalyptus scoparia is a very adaptable and tolerant of most conditions. Highly tolerant of dry, hot conditions, and will tolerate most urban compaction well. Will tolerate a wide range and well-drained soils, although there is no data to support its tolerance to waterlogging.

Tree best used on broad streets/ streetscapes, home gardens, carparks, in avenues or in parks and schools. A good ornamental and specimen tree.

“On the Tilligerry Peninsula in Port Stephens the preferred choice of Koala food is:

- Swamp Mahogany (*Eucalyptus robusta*)
- Small Leaf Peppermint (*Eucalyptus nicholii*)
- Broad Leaf Paperbark (*Melaleuca quinquenervia*)
- Bangalay (*Eucalyptus botryoides*)
- Scribbly Gum (*Eucalyptus haemastoma*)
- Willow Gum (*Eucalyptus scoparia*)”⁶

Known pests and diseases

Eucalyptus scoparia is somewhat troubled by the Winter Bronzing Bug and also troubled by lerps (psyllids) in particular the psyllid, *Glycaspis baileyi* or the Bell bird (miner) psyllid is the main species associated with Bell Miner Associated Dieback (BMAD).

Trees can also be infested lightly with Scale insects and followed by Sooty Mould, especially noticed on younger plants and trees.

Stressed or wounded trees are also susceptible to borer activity and fungal fruiting bodies eg. Bracket fungus.

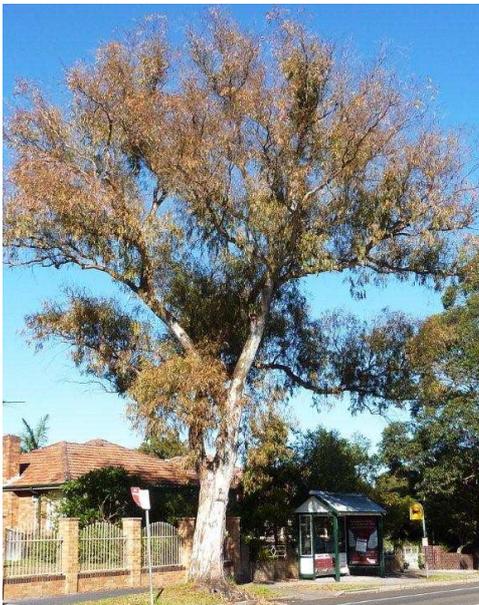
Winter Bronzing Bug (*Thaumasticoris* sp.)

The family *Thaumastocoris* has had a devastating impact on many Eucalypt species in the Sydney metropolitan area. The host range of this bug has increased from two eucalypt species, *Eucalyptus scoparia* and *Eucalyptus nicholii*, to other common eucalypts throughout Sydney’s urban forest.

A sap sucking insect giving the trees the appearance of turning red-yellow or appear to be dying off, within the cooler months followed by leaf drop. Severely infested trees are usually removed unless early detection and treatment is implemented.

Preventative and curative control is possible with tree injection methods used being the most environmental and cost effective way to achieve insect control.

⁶ <http://www.hunterkoala.com/koala-food.html>



Close up of a *Thaumasticoris* bug 2mm long and pale brown in colour, with a distinctive 'X' on the upper body. To the left the red – bronzing of the leaves with defoliation evident.

Eucalyptus scoparia - endangered species listing

NSW Scientific Committee - final determination

"The Scientific Committee, established by the Threatened Species Conservation Act, has made a Final Determination to list the tree *Eucalyptus scoparia* Maiden as an ENDANGERED species in Part 1 of Schedule 1 of the Act. Listing of endangered species is provided for by Part 2 of the Act.

The Scientific Committee has found that":

"5. In view of the above the Scientific Committee is of the opinion that *Eucalyptus scoparia* is likely to become extinct in nature in New South Wales unless the circumstances and factors threatening its survival or evolutionary development cease to operate."⁷

SUBSCRIPTION TIME

Subscriptions are now due, so if you wish to be continue being part of the Eucalyptus Study group and receive the Eucalyptus newsletter, please forward your subs through to Sue Guymer.

Thank you to the following members who have already paid:

Clive Bott, Dorothy Cassidy, LJ Daniels, Ian Evans, Phil Hempel, Colleen Keena, Christina Leiblich, Don and Lorraine Mathews, Warren and Gloria Sheather, SGAP Queensland, APS Maroondah, APS Tasmania, APS Victoria, APS SA, APS Keilor Plains, ANPS Canberra, APS Blue Mountains (paid to June 2014), and the Menai Wildflower Group.

Also, thanks to SGAP Queensland and APS Maroondah for their additional donations.

And a warm welcome to our newest member Takanobu Yajima from Japan.

Could other members please send subs to Sue, or let Sue or Warwick know if they have decided not to continue their membership."

⁷ <http://www.environment.nsw.gov.au/threatenedspecies/> *Eucalyptus scoparia* threatened species

Articles and questions are most welcomed (actually they are wanted).
Please send all correspondence to my;
email address; tallowwood@hotmail.com
or postal; PO Box 456, Wollongong 2520

Membership

New members wishing to subscribe to the *Eucalyptus Study Group*, please fill out the following application and forward to Sue Guymer at;

Email: aitchguy@gmail.com

Postal: No. 13 Conos Court, DONVALE, VICTORIA. 3111

Annual membership costs are;

- \$A 10 per year national members, newsletter mailed(black and white).
- \$A 20 per year international members, newsletter mailed(black and white).
- \$A 5 per year, national and international, newsletter emailed, full colour PDF.

All subscriptions can be mailed via a cheque (made out to the *Eucalyptus Study Group*) or payment made via direct deposit into the account listed below. For payments made via direct deposit, please add your name as reference.

Post address; Eucalyptus Study Group c/- 13 Conos Court, DONVALE, VICTORIA 3111

Bank details:

BSB No: **033-044**

Account No: **289 847**

Account name: **ASAGP Euc. Study Group**

Application for membership to the *Eucalyptus Study Group*

Date:

Name:.....

Postal address: post code.....

Contact Phone number:.....

Email:

Payment method: Cheque Direct Deposit

