

# Eucalyptus Study Group Newsletter

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## Eucalyptus in the New Millenium

## The wild sex life of eucalypts

What are the challenges in Eucalyptus as we move into a new millenium? WHAT can the Eucalyptus Study Group do about such challenges?

Perhaps the greatest challenge is the general loss of biodiversity on the planet. Given that eucalypts dominate the vegetation of our continent in a way that has no counterpart around the world, we would have to think that there are many species that need our help if their full range of genetic diversity is to be maintained. As a group we do have the power to collect, grow, and disseminate seed and information regarding this unique genus. Preservation by cultivation is one very positive thing that individuals can do to turn the tide of species extinction generally.

Another challenge is to simply document as much of the variation existing as possible. An ambitious project for the Study Group would be to publish a book on this subject. Such a project would take a number of years but would be a wonderful legacy to leave for future generations.

Classification of the eucalypts also seems certain to change as the botanists uncover new information about the complex relationships between this extremely diverse group of plants. I would like to see the Study Group move towards co-operation with professional botanists to enable a better understanding of the relationships within the genus. Governments generally seem to be going down the road of reducing funding to all sorts of scientific activities and I think it would be a very worthwhile use of the

Study Group's resources to try and complement the work of the botanists. Does this idea hold any interest for our members? Such co-operation could take a number of forms such as collecting specimens, surveying populations and so on.

The horticultural potential of the eucalypts is a particular fascination of mine and I would very much like to see the group take on projects in this regard. This issue contains a couple of articles on species that perhaps we could work on. The success of the new hybrid bloodwoods *Corymbia ficifolia* x *ptychocarpa* 'Summer Beauty' and 'Summer Pink' really demonstrates the potential for improvement of the eucalypts. Could members write to me with any information about dwarf eucalypts that are successful as ornamentals in your local re-

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### What are the challenges in Eucalyptus as we move into a new millenium?

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gion for publication.

Finally, I would like to apologise to our membership for the hiatus in the production of the newsletter over the recent past. Things should now return to normal but I would appeal to you all for contributions to the newsletter. Please continue to offer other suggestions about the group as well.

A report appeared in the Sydney Morning Herald in 1999 on a study of flowering patterns in eucalypts which has been conducted over a number of years by Dr Brad Law, a research scientist with NSW State Forests.

The rather provocative title of the article, written by James Woodford was "*Unpredictable climax to the wild sex life of gum trees*".

Some rather interesting conclusions were drawn from the decade-long study of 20 different eucalypt species. The main conclusion was "that while gum tree flowering patterns exist, some species are about as messy and unpredictable as a pattern can be". Dr Law is quoted, "Australia has got a very unpredictable environment and I am sure that is why gum trees flower so unpredictably. So the animals that depend on them have to be very mobile".

The subject of pollinators of eucalypts was also studied: "Whilst the vast majority of gum trees offer up a sugary free-for-all, millions of years of evolution have also allowed some eucalypts to have a partial say in who they host. Gum trees with red flowers are most attractive to birds, and those with cream coloured blossoms stand out at night and are prized by nocturnal marsupials and bats."

Other interesting conclusions were drawn on flowering patterns: Several species hold buds in hibernation for up to four years before they are allowed to burst into bloom. Some individuals erupt into bursts of colour while their  
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# Rare and Endangered Eucalypts!

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neighbours of the same species remain inexplicably unadorned."

Editors note:

I would like to add my personal experiences to these comments. For the last decade I have been involved in eucalypt production for the cut flower industry. Many species have rather extraordinary potential for their highly ornamental buds, flowers and gumnuts. The reliability of flowering has a very strong genetic element. In other words it is possible to select forms within species that have much more reliable flowering habits. In addition I have found it possible to select seed strains that will flower precociously. For instance I have selected a strain of *Eucalyptus pulverulenta* that produces a high percentage of seedlings that will flower within six to nine months of germination. Perhaps there is a challenge there for Study Group members to identify better forms of eucalypts with respect to flowering performance. Vegetative propagation of eucalypts could be used to perpetuate these forms, particularly aerial layering.

Precocious flowering in eucalypts is not uncommon in my experience with raising and planting various species and I would be interested in members' experiences in this subject.

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## Endangered eucalypts. *Eucalyptus copulans* an interesting case study

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A rather interesting report appeared last year in a Sydney newspaper about the plight of a rare eucalypt in Sydney's Blue Mountains. The report, written by Simon Benson details the NSW state government's efforts to save *Eucalyptus copulans* from extinction. I quote:

"The NSW Government has issued identikit "wanted" posters in an attempt to hunt down what is believed to be the

world's rarest tree.

*Eucalyptus copulans* was thought to be extinct but one has been discovered at Wentworth Falls and a state-wide search has now begun to locate any relatives of the spectacular native.

"About 18 months ago the only known survivor, discovered clinging to the edge of a railway culvert, was uprooted and almost swept away in a violent storm," Environment Minister Pam Allan said.

Posters asking people to contact the National Parks and Wildlife Service if they suspect they have seen one, are being pinned to less endangered trees throughout the Blue Mountains.

NPWS Sydney zone manager Russell Couch said a specimen, believed to be a *copulans*, had since been discovered in the Blue Mountains. Genetic material was taken from the tree in a bid to propa-

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## Eucalyptus On-line

Brian Walters is a familiar name to members of the Australian Plants Society, particularly in NSW.

Brian has let me know that he has developed an extensive bank of information that can be found on the World Wide Web - (for those of you who are interested in combining the natural world with that of cyberspace). I personally have a great love of the internet and the eclectic range of information that can be found and Brian's efforts are to be commended as the information is first class.

For those interested in viewing the site the address is as follows,

<http://farrer.riv.csu.edu.au/ASGAP/eucalypt.html>. Please have a look at the site as Brian has asked for feedback on this. It has been there for a few years now so there may be information that we, as a group, might like to add to it.

Brian Walters email address is as follows: [brianwal@pnc.com.au](mailto:brianwal@pnc.com.au).

For those of you into email please feel free to reach me at [jades@ozemail.com.au](mailto:jades@ozemail.com.au).

gate the species.

There was also good news for the ailing railside specimen. After declaring it dead, parks offices noticed it had actually sprouted new roots in a sort of rebirth.

The search for *copulans* is being partly funded through the Federal Government's Natural Heritage Trust. Mr Couch said various organisations were involved in the search for the tree, which was classified as extinct in the 1950's.

"As for *Eucalyptus copulans*, State Rail is funding the identikit, the Commonwealth is involved, while Mt Annan Botanic gardens are liaising with the Blue Mountains City Council," Mr Couch said.

"And now the wider community is being asked to take part." Mr Couch said that with the help of the community there was hope for the rebirth of this species.

"The total numbers are such that these species are on the brink of extinction unless we can develop effective recovery plans as soon as possible."

The tree, which has been described as a malle-style eucalypt, grows to about 10 metres and has smooth bark varying in colour from pink to a grey blue.

The search is also on for two other eucalypt species - the Camden White Gum and an unnamed species merely called 55 Howe's.

**Editor's Note:** This fascinating story appeared about twelve months ago. I have been unable to find any recent information on the results of this project. Have any members seen or heard anything of this project.

The documentation and preservation by cultivation of such endangered species would seem to be an ideal project for our Study Group. Are any members interested in taking on a role co-ordinating such activities. It would perhaps require liaison with National Parks and Wildlife Service as well as the Royal Botanic Gardens and Mt Annan in particular. I have spoken to the Horticultural Development Officer at Mt Annan, Peter Cuneo in the past about such collaboration and he is keen. **Volunteers please.**

# Eucalypts around the world

A recent trip took your leader to Israel and California where eucalypts have become an important part of the landscape. The capacity of our eucalypts to adapt to the arid climates around the world has led to their widespread introduction

## Israel

The use of Eucalyptus in Israel dates back to the late 19th Century when Jewish settlements planted them to dry malaria-infested swamps for arable farmland. After the nation of Israel was created in 1948 a massive tree planting programme was embarked upon and eucalypts were widely planted along with a number of conifer species. Apparently Israel's founding Prime Minister Ben Gurion recognised the great potential for eucalypts in Israel and ordered them to be planted around post-independence army camps and garrisons as camouflage. These plantings can be seen as mature specimens all over the country now, a stark reminder of the fragile nature of peace in the Middle East.

The thing that struck me driving around the countryside was the great success of the Israelis in adapting species from all over the world to create these thriving man-made forests. Species such as *Eucalyptus camaldulensis* (River Red Gum) were prominent in many areas and had grown into mature specimens. In other areas, such as the Negev Desert

## Dr Ben Dov's collection includes some 400 eucalypt species.

in the south, the eucalypts were the only species that had survived. In many areas the wind-blown sands of the desert were covering the trunks and threatening the survival of the trees.

A newspaper article in The Canberra Times in August 1997 by Yehonathan Tommer describes the work of Israeli scientist Dr Yossi Ben-Dov at Ben Gurion University of the Negev. Ben-Dov

has written a detailed Hebrew language register entitled *Adaptation of Plants to Arid and Semi-Arid Conditions and Use of Saline Water*.

"It spans 30 years of research and development and monitors more than 1000 laboriously gathered species of trees, tall growing shrubs and creepers originating from South America, the US, South Africa, India and Australia and adapted to Israeli saline soil and water conditions."

"Species are listed by their Latin names with their defining 'halophyte' (saline-suited) characteristics, and topographical, water and climatic needs. Optimal growth locations for each species are also listed, as is a useful inventory of their appropriate consumer goals (floral fillers, medicinal herbs, cosmetics, honey manufacturing, industrial timber

## Eucalypts in the Holy Land

and municipal landscaping) and ecological function for reclaiming marginal land, halting eroded gullies, reducing wind velocities over cultivated fields and orchards and rolling back encroaching sand dunes."

"Dr Ben Dov's collection includes some 400 eucalypt species. These grow near Beersheba at Sde Teiman (Yemenite Field), a 50 hectare enclosure created in the late 1950's."

"Many species were brought to Israel in 1994-5 with the permission of appropriate Australian wildlife and flora authorities following a year's sabbatical that Dr Ben Dov spent at Australia's principal botanical gardens, visiting especially Perth and Adelaide and their outback environs and lecturing to university specialists. In exchange, the Australians received all the relevant research findings of their acclimatisation in Israel."

"Despite warm professional relations with Australian researchers, no joint ventures have emerged with the universities or government bodies."

## California

Eucalypts have become so familiar in the Californian landscape that they are often mistaken as being indigenous to the area. In fact species such as *E. globulus* (Tasmanian Blue Gum) have become so successfully naturalised that they are now regarded as environmental weeds. This species had been introduced in the late 1800's as a fast growing timber tree. Unfortunately it was a poor choice as it is by no means the best species for wood production. Some very interesting genetic variants have been selected through the long history of eucalypt cultivation in California.

The semi-arid granite boulder covered hills of southern California are regularly punctuated by swathes of gorgeous blue from the eucalypts grown for the cut foliage industry. One type in particular dominates the industry. This is *Eucalyptus pulverulenta* 'Baby Blue', a stunning small leaved form of the silverleaved Mountain Gum. The great irony of the situation is that this species is endangered in its natural habitat with only two known localities, one near Lithgow above the Cox's River and the other in the Bredbo region. I have seen the Lithgow population and running through the middle of it is a plantation of *Pinus radiata*. The irony is that the Monterey Pine is a native tree of California that itself has a limited distribution in the central coastal region of California.

A number of Western Australian species have achieved great popularity as street trees and also in the cut flower industry. *Corymbia ficifolia*, red flowering gum does particularly well in the San Diego area and there seem to be dwarf forms that have maybe been selected as seed strains. Other species were *E. macrandra*, *erythrocorys*, *spathulata*, *tetraptera*, *youngiana*, *cinerea*, *diversicolor*, *polyanthemos*, *nicholii*, and many others.

# Eucalypts I have known and loved.

I would like to set aside a section of the newsletter to talk about members' experiences in cultivating eucalypts. I will get the ball rolling with some of my own observations. Contributions please.

## Eucalypts for cut foliage:

Many species of eucs are used around the world for their ornamental appearance in the vase. Perhaps the best of all is the silver leaved mountain gum *E. pulverulenta* referred to in the article on eucs in California elsewhere in this newsletter. The thick layer of wax on the leaf surface gives it a wonderful silvery appearance. It is best grown in climates that have lower humidity as my experience in the coastal region of Sydney is that it is particularly prone to fungal leaf spot diseases. My suggestion to anyone wanting to grow it is to take advantage of its potential as a malle and prune it back hard whenever it starts to become a little bit leggy. In this way you can

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**What are your favourite eucalypts in cultivation. Please give me some thoughts to pass on to your fellow members.**

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effectively keep it as an informal shrub or even as a hedge plant. *E. cinerea* (argyle Apple) can also be treated in similar fashion.

*E. parvifolia* (small-leaved gum) is an unusual eucalypt restricted to above 1000m altitude in a small part of the Great Dividing Range near Cooma in south-eastern

NSW. It grows on flat or gently sloping country in shallow to fairly deep loams. The grey-green mature leaves are only about 4cm long by 0.5 cm wide and they give the tree's crown a very distinctive texture. It is an extremely frost hardy species that has adapted extremely well to the humid climate of the coastal region near Sydney. It is popular in Europe as a cut foliage, being grown in Italy and sold in the flower markets of Holland such as Aalsmeer.

*Eucalyptus albida* (White-leaved malle or rattle gum). This species occurs on the wheatbelt plains of Western Australia in open heathland or shrub-

land near Moora and extends southeast to Lake King. It grows on yellow sand which often has lateritic gravel overlying clay. It has perhaps the most silvery of all euc foliage and the tough leathery leaves give a distinct "rattling" sound when shaken which has led to Sydney florists christening it as rattle gum. It does not like the humidity of the Sydney region and is best suited to the drier climates of Australia, perhaps more in the interior.

*Eucalyptus polyanthemos* (red box) This species is incredibly popular as a cut foliage in the USA where it has earned the common name 'Silver Dollar' perhaps leading to the perception in some that money does truly grow on trees in the USA. This species grows naturally from the Central Tablelands of NSW to central and southern Victoria where it is particularly common. It frequently grows in poor stony shallow soils. The leathery greyish rounded foliage has the advantage of being able to be readily preserved through the uptake of glycerine solution into the stem. This is a significant industry in California where this preserved eucalypt foliage is used to create very distinctive Christmas wreaths. I have found this species grows well in the Sydney region but is very prone to fungal leaf spot which ruins the leaves for commercial cut foliage. It is best grown in drier climates.

*Eucalyptus gunnii* (cider gum) This fascinating species from the plains and slopes of the central highlands of Tasmania occurs between the altitudes of 600 and 1100m. It grows in poorly drained humus-rich soils overlying rock. The common name cider gum apparently comes from the belief that Aborigines fermented the sap before drinking it. It is a very frost tolerant species and the rounded silvery juvenile leaves have long been popular around the world as a cut foliage. A similar and closely related species that also has great foliage is the alpine cider gum (*E. archeri*) which is found at altitudes between 1100 and 1400m. Both species are best grown in drier, cooler climates such as Canberra.

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## Feedback from our members

I would like to include this as a regular section of feedback from our members. Please give me your eucalypt gossip to share with other members.

Jeff Irons, the honorary secretary of the Australasian Plant Society in Wirral England wrote to ask of details of two Eucalyptus species grown by members of his society. These are *E. lasophila* and *E. tenella*. Apparently *E. lasophila* is similar to *E. stricta*. Editors note: I have not heard of either species. Can anyone shed any light? Jeff also adds that two of his members hold the National Collections of eucalypts.

Werner Kutsche in South Australia has amassed an impressive array of species on his 13 acre property, average rainfall 250 mm and an alkaline (pH 8.5+) sandy loam with perfect drainage. He has 26 South Australian species amongst others.