

Araucariaceae: Australia's magnificent native pines

by David McMinn

The family Araucariaceae contains the most spectacular native Australian conifers - Hoop Pine, Bunya Pine, the Kauris and, of course, the enigmatic Wollemi Pine. Stretching the term native, the Norfolk Island Pine has also been included. They are an ancient lineage of conifers, which were a dominant feature of the flora during the Jurassic and Cretaceous eras over 200 - 65 million years ago. With the rise of the flowering plants, Araucarias have declined in importance. They used to have a worldwide distribution, but are now only found in South America, Australasia and South East Asia.

Araucariaceae species are only suitable for large blocks and farms, as they grow very large - to 20m to 40m tall. They should never be planted near houses or in small gardens, as their roots may wreck foundations and the trees can blow over in a strong wind. A few months ago the Lismore Transit Centre was wrecked after a mature Bunya Pine was blown over during a storm. I have seen several large Hoop Pines, which have had their tops blown off. So take care siting these trees and consider the long term implications.

All Araucariaceae species may be slow to establish as small trees, but after several

years they will experience moderate to fast growth depending on conditions. Their distinctive shapes make them excellent to grow as a skyline tree, as they make a very attractive silhouette. They are suitable as a pot plant and can be used each year as a Xmas tree. Plant them out when they get too large for the container.

Some species of Araucariaceae are valued for timber production and large scale plantations of Hoop Pine have been established in south east Queensland. The softwood timber is a pale colour, used for furniture and house interiors.

The Species

South Queensland

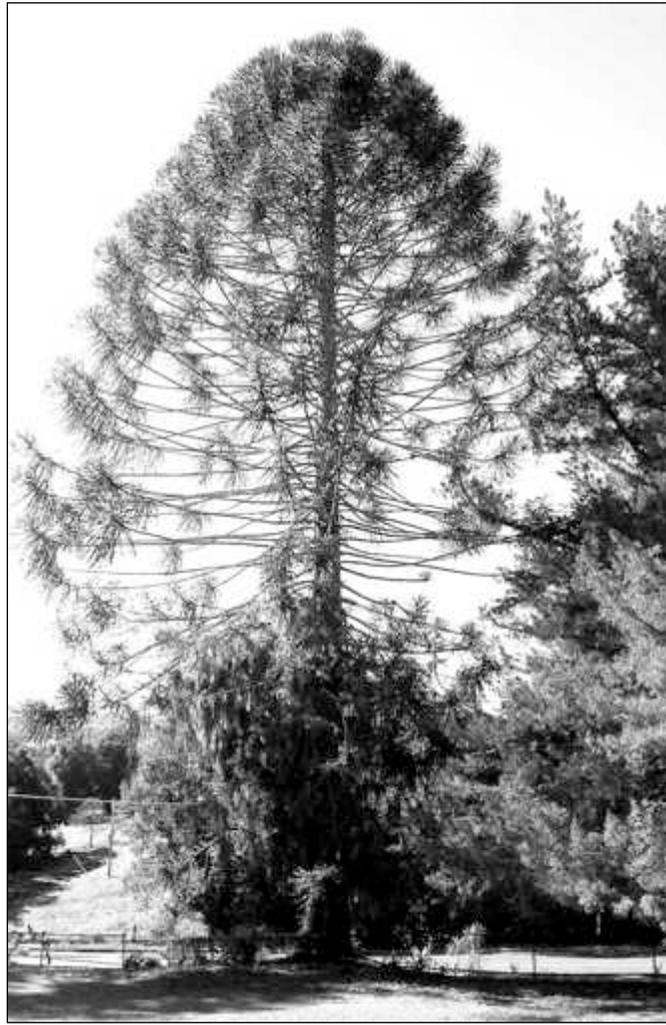
Kauri (*Agathis robusta*) is found on the sand dunes of Fraser Island, with its range extending inland to the Seaview Range west of Maryborough. New leaves are a pinkish - copper colour, which turn to glossy green on the upper surface with a lighter underside. It is typically an upright symmetrical tree growing to 40m. It needs lots of moisture and rich soils to do well. A large beautiful Kauri can be seen at the back of the Nimbin Catholic Church in Cullen Street. It was planted in 1953 by one of the Cullen sisters after she won the seedling in a raffle. Another two *Agathis* species are native to north - east Queensland.

Bunya Pine (*Araucaria*

bidwillii) is native to the subtropical rainforests of the Bunya Mountains - Gympie region of south east Queensland, with small isolated populations in the north east of that state. It is debatable whether Kooris introduced the species into north eastern NSW before European settlement. Mature trees have a distinctive rounded top with few side branches along the lower half of the trunk. A distinctive feature are the large cones weighing 5 kg or more, containing large edible seeds used in bush food cooking.

Bunya Pines are very tough being able to cope with frost and drought. However, under adverse conditions, the trees will develop a pronounced tapering of the trunk. They must be sited sensibly away from car parks, houses and pathways, as large cones falling from 40m may cause damage and worse - they could kill. Always be careful walking under Bunya Pines around February when the cones drop to the ground.

A majestic old specimen can be seen on Cullen Street in the grounds of the Catholic Church (pictured). **Hoop Pine** (*Araucaria cunninghamii*) is native to eastern Australia from the mid north coast to north east Queensland. It has outward or upswept branches with foliage in tufts on the ends. It is a common species found in all rainforest types, especially in areas with poor and rocky



soils. In dry rainforests, it is often an emergent, towering above the other trees. It is quite adaptable and will also occur in the water logged soils of riverine rainforests. It was quite often planted by the original Nimbin farmers and a number of old trees can be seen in the valley. **Norfolk Island Pine** (*Araucaria heterophylla*) is only found on the small Norfolk Island, offshore from the Australian mainland. It is columnar with branches radiating

in whorls from the trunk producing a very attractive layered effect. Norfolk Island Pine is suited to growing in seaside locations as it can cope with salt laden sea spray. Hence it is widely planted on the Gold Coast, as well as Byron Bay. **Wollemi Pine** (*Wollemia nobilis*) was only recently discovered in 1994. Previously, it was only known from fossils, the youngest being dated at 70 million years old. This pine was found only in a few

small populations in the Wollemi National Park 200 km inland from Sydney. Less than 100 adult trees exist in the wild, some of which are known to be 1000 years old. It has the columnar upright shape of the Bunya and Hoop Pines and a very unusual bubble texturing on the trunk. Strangely, all trees are genetically identical, which poses a problem explaining how these trees were able to survive with zero biodiversity. The tree may reach 40m with a trunk one metre in diameter. It will become commercially available in 2006, which will be something to look forward to.

If you have a large block, you should consider planting at least some of the Araucariaceae as a major feature. A friend planted out his Mesozoic forest garden complete with ferns, cycads, Araucarias, podocarpus species and primitive flowering plants. Quite impressive!

Araucariaceae should be included in any rainforest plantings. Cabinet timber forestry on private land is another viable option over the long term, especially for Hoop Pine and South Queensland Kauri.

Nimbin Aquarius Land Care

Meetings held 4th Friday of the month, 11am at The Community Gardens.

New report confirms genetically engineered crops use more pesticide

When genetically engineered (GE) crops first came on the market in 1996, proponents claimed that they would need far less pesticide than conventional crops. Most genetically engineered crops are modified to either tolerate the herbicide glyphosate (HT crops) or to produce their own insecticide (Bt crops), so in theory, fewer applications of pesticide on GE fields would be sufficient to take care of pests.

For the first three years of use, this was

true. However, a new report by agricultural economist Dr. Charles Benbrook, Genetically Engineered Crops and Pesticide Use in the United States, shows that farmers now use more pesticide on the top three GE crops — corn, soybeans, and cotton — than on conventional varieties.

Report at Union of Concerned Scientists http://www.ucsusa.org/food_and_environment/biotechnology/page.cfm?pageID=1542.

Teacher tripping

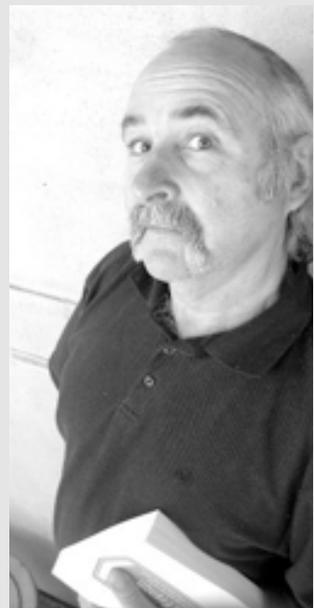
Kevin Cousins (pictured), who has been on the Science staff at Nimbin Central School for eight years, has won a Premier's Award, to study teaching methods in environmental science.

The award, in the form of a \$15,000 Macquarie Bank scholarship to study at an overseas university, was open to all teachers across NSW, and it is a great credit to Kevin

that his application was successful.

Kevin has chosen to go to Warwick University in the UK for five weeks, and will leave in April next year.

"This is an exciting opportunity for me. Curriculum and methodology need constant review and renewal," he said. "This Award will help my teaching, particularly with thematic studies, back at Nimbin."



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54 Cullen Street, Nimbin Phone 6689-1529
ABN 56 823 670 797 email - dianar@mullum.com.au



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