



Australia's iconic trees – the eucalypts

Eucalypts have been described as the universal Australian. They dominate most Australian landscapes, ranging from the moist tropics in the north to the cool forests and mountains of south-eastern Australia. Only in the very arid interior of Australia do they give way to the more hardy vegetation dominated by acacias. Eucalypts also occur naturally outside the Australian continent — on Timor and in New Guinea, with the rainbow gum *Eucalyptus deglupta* also occurring on New Britain, Sulawesi and even as far north as Mindanao in the Philippines.

Fossils are evidence that eucalypts once lived in other parts of the southern super-continent Gondwana. In South America, superbly preserved fossil fruits and leaves have been dated at 52 million years old, a time when Australia was still connected to Antarctica, indicating that the eucalypts are an ancient group within the largely southern hemisphere plant family Myrtaceae.

Early collections of eucalypts were made by Joseph Banks and Daniel Solander on Captain Cook's first voyage in 1770. But it was on Cook's third voyage that the specimen that would become the type for naming the genus was collected from Bruny island off the south coast of Tasmania. This specimen was taken to London and named there in 1788 by the French botanist Charles L'Héritier – as *Eucalyptus obliqua*. Overland journeys in the mid 1800's by Augustus Gregory and Ferdinand von Mueller led to further collections and discovery of species. In 1905-1906 William Fitzgerald collected species in the remote Kimberley, and since that time other botanists and enthusiastic amateurs have continued to discover and document new species in this richly diverse group of flowering plants.

Through scientific research, including DNA sequencing, we now know that the eucalypts include a number of major evolutionary lineages that diverged over the last 40 million years from rainforest forbears and adapted to drier environments, weathered soils and fire-prone landscapes. Of seven genera that now make up the broad eucalypt group, the genus *Eucalyptus* is the largest with up to 700 species. In Victoria, we have about 138 species of *Eucalyptus*, including the tallest flowering plant in the world, mountain ash or *Eucalyptus regnans*, which can attain a height of more than 100 metres, as well as gums, boxes, stringybarks, ironbarks and shrub forms termed mallees.

The eucalypts are very special to Australians because of their immense utility and economic and ecological importance. A number of species are harvested extensively for wood products, both from natural stands and from plantations established in Australia and elsewhere in the world. Eucalypts are vast resource of hardwood timber, that varies in colour, strength, and durability, and are also used for paper pulp or firewood. Important timber species include mountain ash, blue gum, red gum and shining gum from eastern Australia, and jarrah from Western Australia. In Victoria the leaves of the blue mallee, *Eucalyptus polybractea*, are used in the production of essential oils; yellow box, *Eucalyptus melliodora*, is a valued source of honey; while other species are used in floriculture and horticulture, or planted for shade and shelter. Through research, species and genotypes have been discovered that are salt tolerant and can be planted for land restoration. The amazing ability of many eucalypts to resprout from dormant buds allows them to survive fire and drought and climate change.

The biodiversity benefits of eucalypts are immeasurable as they are critical to the survival of insects, birds, mammals soil organisms, and thus they are key to the healthy functioning of the ecosystems that they dominate.

2010 is globally, the year of biodiversity – a fitting year to acknowledge the importance of the eucalypts through the launch of the Dahl Trust and its support of increasing knowledge and community awareness of eucalypts.

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Speech delivered at the Bjarne K Dahl Trust Launch

Government House, Victoria

Monday 16 August 2010

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