Dumaresq Creek Biodiversity Walk

Walk or pedal the Dumaresq Creek track, and discover some of New England's amazing biodiversity

Introduction

The plantings referred to within this booklet were created with the generous help of the Armidale community and support by the NSW Environmental Trust. They are part of the High Country Urban Biodiversity Project (HiCUB 2009-2012) which was managed by Southern New England Landcare (SNELCC) on behalf of Armidale Dumaresq, Guyra, Uralla and Walcha Councils.

The aim of this part of the project was to establish native plants along Dumaresq Creek in order to increase the health, biodiversity and beauty of our urban riparian environment. Thirteen showcase sites were successfully created with the help of many volunteers and sponsors. The plantings were designed to display some of New England's amazing plants and build upon the wonderful works already undertaken by the Armidale Urban Rivercare Group.

You will discover the plantings are numbered from 1-13, with these numbers relating the information in this booklet. Use this guide to find out more about our interesting native plants as you follow the path along Dumaresq Creek.

Nic Cobcroft
HiCUB Projects Manager
December 2012

High Country Urban Biodiversity Project

Southern New England Landcare

Follow the map in the centre of this booklet

Common questions and answers

Why remove willows from our creeks?

Willows were initially planted in and near waterways to stabilise eroding banks caused from over- clearing. Unfortunately they don't do the job over time and in fact make things worse. Willows are now regarded as one of Australia's most serious wetland weeds because:

- they have dense root mats and a clogging nature which trap silt and debris mid-stream, building up the level of the stream bed and in turn pushing the water to the sides, increasing erosion and flooding. Native vegetation, on the other hand, allows fine sediments to build up on stream banks *preventing* erosion;
- they cast a dense shade in spring and summer and overwhelm most native plants. Massive loads of leaf litter in autumn break down rapidly and cause oxygen loss and poor water quality. Native vegetation remains in a steady state casting similar shade throughout the year and providing a constant trickle of input in leaves and other material that is useful to native fauna; and
- they are highly invasive spreading by seed, branches and even small fragments so that they can totally dominate a waterway. Willows are excluders by providing poor habitat and destroying available habitat. For example they don't often form hollows and when they do they are often damp wet hollows, not very inviting for birds and mammals.

Why plant seedlings so close together?

There are many ideas on how to establish native seedlings. No one idea is perfect for every situation and methods are constantly changing. Dense plantings along Dumaresq Creek have been successful because:

- weeds have become a major problem in establishing seedlings and maintaining them through the first couple of years. Unfortunately it is usually the weed that will fill the gap if there is one. Planting densely reduces the available space for weeds and also results in earlier canopy closure thus outcompeting them;
- plants in nature often germinate in large numbers and grow close together taking advantage of available conditions. They benefit from growing close to one another at early age and will naturally thin out as time goes by; and
- it is much more economical to plant a small area densely than to have to come back and re-plant later.

Armidale Urban Rivercare Group (AURG)

AURG was established in 2001 with the objectives of re-establishing native vegetation along some sections of the Creek and removing areas of woody weeds such as privet, willow and poplars. AURG is a very popular and dedicated group that holds regular working bees that attract between 30–50 community members. Many examples of their work may be seen along the Creek.

ARMIDALE URBAN RIVERCARE GROUP

If you would like to be involved in this sort of work along Dumaresq Creek please contact the AURG via SNELCC 02 6772 9123. www.snelandcare.org.au

① Yellow Box

Eucalyptus melliodora is widespread on the tablelands and is often found growing with Red Gum. The community 'Box Gum Grassy Woodland' occurs on sought after agricultural soils. Clearing for cropping and grazing pressure have contributed to the decline of the community and it has now been listed by the Australian Government as being critically endangered. Most people know the timber as hot slow burning firewood however the tree has many more important uses. Yellow Box trees provide a source of hard durable timber often used for poles, stumps, stockyards and strainer posts. Timber was cut from living trees by aborigines for items such as shields and coolamons leaving behind a scarred but still living tree. Trees were also beautifully carved for burial sites and bora grounds. Yellow Box is a Koala food tree and an important nectar source for honeyeaters and lorikeets. Apiarists look for the trees as they produce an excellent honey. *Melliodora* comes from the Latin words *mel* (honey) and *odor* (smell).

Yellow Box post

① Kangaroo Grass

Themeda australis is a warm season perennial grass and is found in all states of Australia. It is widespread where grazing is light and will proliferate following an autumn fire. It is easily recognised by distinctive long dark awns protruding from reddish, triangular shaped seed heads. Kangaroo grass can be a dominant component of woodland grassy understorey. There are several other grasses at this site. Can you spot Barbed Wire Grass *Cymbopogon refractus* or Wild Sorghum *Sorghum leiocladum?*

Sponsored by SportUNE

② Black She-oak

Allocasuarina littoralis is a smaller "cousin" of the River Oak and is common in the forests east of Armidale. The species was much more widespread with small remnants occurring close to Uralla, Gostwyck and Saumaurez. The timber burns well and was used for making shingles. The tree is nitrogen fixing, fast growing and is an excellent windbreak and habitat tree. Male and female flowers occur on separate plants with the female producing woody cones. The seeds from these cones are a primary food source of Glossy Black Cockatoos.

Kangaroo Grass

② The Glossy Black-Cockatoo

Calyptorhynchus lathami is a black cockatoo with a red panel in the spread tail. This red panel is tinged yellow and finely barred black in females and young birds. Adult females have yellow blotches on the head. The Glossy is often mistaken for the larger, shier and more raucous Red-tailed Black-Cockatoo, which is locally absent. In the Armidale district, Glossy Black-Cockatoos occur around the wooded gorge rims and in the forests to the east. They are closely associated with she-oaks, particularly Black She-oak *Allocasuarina littoralis,* Forest She-oak *Allocasuarina torulosa* and to the west Stringybark She-oak *Allocasuarina inophloia*. They feed exclusively on she-oak seeds. These cockatoos are approachable as they sit quietly in she-oaks, and can be detected by the clicking sounds made as they crunch into she-oak cones that they hold in one foot. They also need large hollows in big old eucalypts as nest sites, usually in forest but also in remnant eucalypts, even dead ones, in grazing land near forest.

Glossy Blacks are listed as being vulnerable under the NSW Threatened Species Conservation Act.

Steve Debus

Glossy Black, photo Steve Tremont

③ Orange Gum

Eucalyptus prava generally grows to a small tree with multiple twisted stems and a diverse range of coloured bark. The trunks and branches shed bark in the spring and the tree can turn a spectacular orange. Orange Gum can be found growing to the west of Armidale in poorer soils frequently amongst rocky outcrops. It often occurs with Black Cypress Pine *Callitris endlicheri* and Tumbledown Red Gum *Eucalyptus dealbata* with a shrubby understorey.

Planted by HiCUB

Orange Gum

Eastern Water Skink

④ Mountain Gum

Eucalyptus dalrympleana is a stately, smooth barked tree that grows in better soils on the tablelands and can reach 40 metres. It starts life with broad, greyish opposite leaves but the adult leaves are green, alternate, long and fairly narrow. Like many other eucalypts a mature tree can produce vast numbers of flowers, each providing nectar and pollen that attracts birds, bats and insects. Various grubs and insects eat the leaves and they in turn can be eaten by birds. Just remember as you look at a tree that you can only see half of it. The other half is hidden in the soil below. The soil may feed the tree but the leaves falling from the tree create another ecosystem in the leaf litter that returns nutrients to the soil.

Peter Metcalfe

④ Blady Grass

Imperata cylindrica is a grass native to Australia and eastern Asia. It often grows in dense swards and is poorly regarded by most graziers. The grass spreads by underground rhizomes, often forming dense expanding clumps. These underground rhizomes enable Blady grass to recover quickly following fire and other disturbances. Only new growth of the grass is palatable to livestock. Following European settlement, many areas were burnt each year to encourage new grass growth. This practice favoured Blady grass, which became a dominant grass in many Tableland areas with poor soils derived from granite. Blady grass is still a prominent species in many areas, especially in fire-prone landscapes on the North Coast. Dense swards of Blady grass are often almost devoid of other plant species, but swards within intact woodland are often not dense and may contain a great diversity of native plants. Blady grass is useful in preventing soil erosion. An extract from the plant is used to produce a moisturising skin lotion and some Asian farmers ferment the sugary rhizomes to produce an alcoholic drink.

Chris Nadolny

Trees Planted by Armidale Urban Rivercare Group November 2010. Grass by Duval High Biology Year 11, 2011

⑤ Snow Gum

Eucalyptus pauciflora These trees survive at high altitudes like Ebor plateau and in other cold places like south-facing slopes around Armidale that are most exposed to cold, dry, winter winds. Snow Gum leaves have a thick waxy coat or cuticle which helps them survive cold easily. The cuticle also makes the leaves thicker and harder to eat. Some insects eat the young leaves before the tough cuticle is fully developed. Others penetrate the cuticle with sharp tubes to suck sap from inside a leaf or lay eggs inside so larvae can eat out tunnels under the cuticle. But many snow gum leaves survive for several years. Perhaps the age of leaves is one reason why over 80 species of fungi can be found growing in microscopic colonies on Snow Gum leaves – more than on leaves of most other plants studied. The bark of Snow Gums peels off, sometimes revealing scribbles. The scribbles are made by larvae that have eaten the new bark, fallen to the ground, pupated then turned into delicate moths.

Kate Boyd

Mature Mountain Gum

Snow Gum flowers

Galbaan planting Site 5

⑤ Snow Grass & Tussock Grass

Poa sieberiana & ***Poa labillardieri*** often grow together as planted here however Snow Grass generally prefers the higher ground and Tussock Grass moister lower southern slopes. Tussock Grass is the larger more robust plant with wider flatter leaves whilst the smaller plant with finer leaves is Snow Grass. Tussock forming native grasses such as these provide important habitat and food sources for many animals. Reptiles, frogs, micro-bats and insectivorous birds thrive on the many insects living amongst the tussocks. Many small birds such as thornbills will line their nests with spider webs gathered from between the grasses. Native grasses are an essential part of revegetation work. Apart from the important ecological role they play they also form a fast growing groundcover to outcompete weeds. They can be easily sown directly, planted as seedlings or laid as turf and in the right conditions can self-seed within the first year.

Planted by Galbaan Healing Our Environment Group, December 2010

⑤ Snow Gums Bushland Reserve

From site 5 or 6 a detour may be made up the Markham Street hill to "Snow Gums Bushland Reserve". The vegetation of the reserve consists of naturally occurring grassy woodland dominated by Ribbon Gum *Eucalyptus viminalis*, Snow Gum *Eucalyptus pauciflora* and Blakely's Red Gum *Eucalyptus blakelyi*. Armidale Tree Group's Bush Care volunteers conduct regular bush regeneration working bees at this reserve, and in Drummond Park around Apex lookout. Their aim is to enable the endangered ecological woodland communities to survive. Bush regeneration efforts focus on removing invasive weeds. Work in this area began in the in the mid-1970s revegetating two quarry scars with native plants. Work now concentrates on maintaining the natural bushland areas.

Bluebell

⑥ Coast Banksia

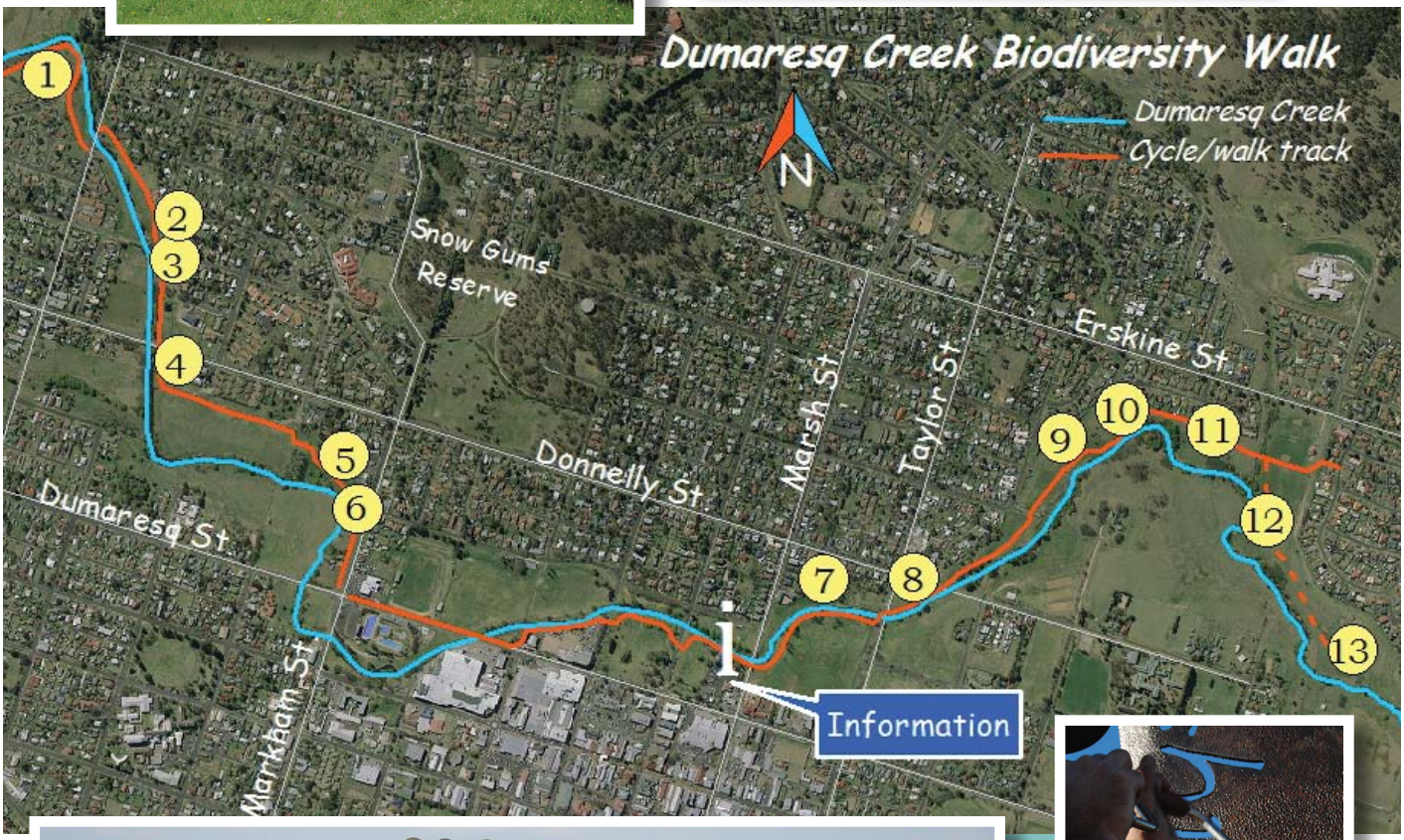
Banksia integrifolia* subsp. *monticola is a highland tree in Eastern Australia and it flowers in autumn and winter, providing a welcome source of nectar for honeyeaters and native insects that pollinate the flowers. The leaves are dull green on top but the undersides are startlingly white. The flower heads are made up of hundreds of small creamy yellow flowers, each with nectar at the base.

⑥ Hairpin Banksia

Banksia spinulosa subsp. spinulosa is a shrubby species with narrow leaves that are white underneath. It also flowers in winter like the large *Banksia integrifolia* but the flower heads are a striking golden to coppery colour. The taller bent styles are dark red to almost black; giving rise to the common name of "Hairpin Banksia". When pollinated Banksias flowers produce a woody fruit, each protecting two winged seeds until the fruits open after a bush fire. Black cockatoos have strong beaks and can crack open the fruits to get the seeds. Banksias have tough leaves that are harsh to the touch. The genus name celebrates Joseph Banks who was the botanist sailing on Cook's voyage to Australia.

Peter Metcalfe

Banksia Cone
Sponsored by Greenscene Landscapes


Dumaresq Creek Biodiversity Walk
Dumaresq Creek
Cycle/walk track
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Snow Gums Reserve
Erskine St
Marsh St
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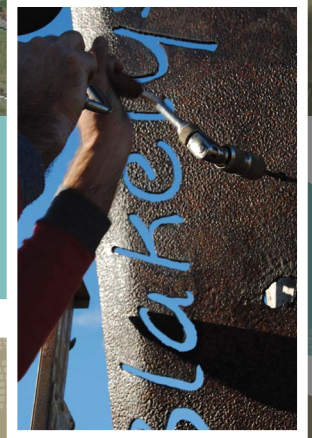


⑦ Warra Swamp Mallee

Eucalyptus camphora subsp. relicta is listed as endangered in NSW as it is only found in a couple of tiny stands east of Guyra in Warra National Park and north east of Deepwater. It grows in sandy swamps in thick groves of up to five trees per square metre. It can be single stemmed but mostly forms a mallee tree with multiple stems, possibly due to frequent fire.

⑦ Tall Sedge

Carex appressa forms dense tussocks to 1m tall with arching green to yellowish-green leaves. The inconspicuous but attractive wind-pollinated flowers are formed at the tips of its flowering stems. Both stems and leaves are tough and quite rough to the touch (caution: can cause skin cuts) and are not readily grazed by stock. Tall Sedge is common in swampy places on the tablelands and slopes, where it grows in a wide range of damp situations such as along creeks, in riverbeds and in rainforest. More importantly, Tall Sedge is one of the dominant species in Carex Sedgeland communities especially towards the west of the tablelands and on the western slopes. These sedgelands are listed as an Endangered Ecological Community under the NSW Threatened Species Conservation Act and are at risk from draining and heavy grazing and trampling.

In Carex Sedgelands, tussocks provide habitat for frogs and invertebrates; spaces between the largest tussocks provide grazing, shelter and protection for animals such as Swamp Wallabies. The leaves of this plant were also used for basket-making by aborigines. Tall Sedge has been used as a biofilter in artificial wetlands to remove pollutants from stormwater.

Another native plant of interest at this site is Water Couch *Paspalum distichum*. It can be seen growing in the main channel during summer and dying off through the winter.

Dorothy Bell

⑧ New England Peppermint

Eucalyptus nova-anglica is a tree of the deeper soils on the lower slopes and along Creeks. The early settlers cleared these better soils and this species was greatly reduced. It was not a useful tree for the pioneers as the wood is soft and not valuable for building or as firewood but it does play an important role in the New England ecosystem. Many different insects eat the silvery leaves and many insectivorous birds rely on the food chain based on this handsome tree.

Being a fast growing species New England Peppermint develops hollows much earlier than the harder eucalypt species. Many birds, bats, frogs and lizards use the holes in living and dead peppermints for nests and homes. The "New England Dieback" episode in the 70s wiped out big areas of this distinctive tree. One bird, the Fuscous Honeyeater seems to particularly like New England Peppermint and their numbers declined as the peppermint was decimated. Their numbers have recovered in recent years as peppermints regenerate across New England.

Peter Metcalfe

⑧ Spiny-headed Mat-rush

Lomandra longifolia is frequently used in landscaping and revegetation works as it is serves multiple purposes. It is very hardy, easy to grow, and is perfect for erosion control with its dense strong roots and flexible leaves. When planted closely it forms an almost impenetrable and attractive border. It can be cut back severely and will reshoot vigorously often producing more flower spikes. It produces an abundant source of nectar for beetles and other insects and is great habitat for frogs and other small animals. It occurs naturally and is common throughout most of eastern Australia in most situations from coastal forests right up to mountain tops.

Planted by Galbaan Healing Our Environment Group

⑨ Alpine Bottlebrush

Callistemon pityoides grows at high altitudes along Creeks and in sphagnum bogs, swamps and heathland. It will often form almost impenetrable thickets that can be up to 3m in height. It has narrow sharp pointed leaves and dense cream flower spikes.

⑨ Apple Box

Eucalyptus bridgesiana looks a bit like a cross between Rough-barked Apple *Angophora floribunda* and Yellow Box. It is an excellent habitat tree sometimes with a huge spreading crown and is often found along Creeks and gullies.

⑨ Blackthorn

Bursaria spinosa supports a wide variety of insects including important parasitic wasps. It can be very long lived high wildlife value, as a habitat for birds and as a nectar source

⑨ Blakely's Red Gum

Eucalyptus blakelyi named by botanist Joseph Maiden after William F. Blakely (1872–1951) who worked closely with him botanising and collecting. The tree often grows with Yellow Box and can be recognised by its smooth grey blotchy trunk and graceful curves.

⑨ Blueberry Lily

Dianella longifolia is a clumping lily with varied forms. This variety comes from near Bendemeer and forms large clumps with long flower spikes.

Pink Kunzea can usually be found growing in clumps in damp granitic soils to the west.

⑨ Dagger Wattle

Acacia siculiformis scattered throughout woodland across the tablelands and especially common along the Gara River where it grows with Blackthorn and River Bottlebrush.

⑨ River Bottlebrush

Callistemon sieberi is widespread across the northern tablelands and common along many watercourses such as Salisbury Waters.

⑨ Small-fruit Hakea

Hakea microcarpa occurs in high altitude wetlands such as swamps, sub-alpine bogs and along creeks. The leaves can be long needle shaped or flatter causing some confusion in identification. It has small woody fruits opening when mature.

⑨ Spiny-headed Mat-rush

Lomandra longifolia see site 8.

⑨ Tantoon Tea-tree

Leptospermum polygalifolium is the Tea-tree you see growing in most watercourses locally. It produces masses of white flowers and forms great cover for small birds.

Other Tea-trees ***Leptospermum gregarium*** grows in high-altitude swampy areas and may sometimes be seen on roadsides growing with Small-fruit Hakea.

Leptospermum minutifolium is a small shrub with very small leaves that grows in high altitude swamps and along mountain creeks.

⑨ Tree Violet

Melicytus dentatus can grow up to 4m high and forms a dense spikey safe refuge for small birds. It was common around rocky Basalt hills.

Tantoon Tea-tree

⑩ Slender Tea-tree

Leptospermum brevipes certainly has slender stems at an early age however given another 50 or so years (if these small trees are still here) they will be anything but slender. Imagine a tree with several thickened gnarly twisted branches 30-40cm in diameter at the base each projecting up to 4 or 5m and resting on the ground. The total area covered by a single tree can be as much as 50 m². One tree could easily cover one of the smaller circles.

⑪ Black Sallee

Eucalyptus stellulata occurs in the colder environments such as frost hollows and at high altitudes. It can be seen growing further up Dumaresq Creek towards Dumaresq dam along with New England Peppermint. The trunk and branches are often twisted, deformed and fluted and the tree has the habit of looking half dead and falling over. The shiny bark is often coloured a stunning olive green and grey.

Black Sallee fruit buds

⑪ Common Rush

Juncus usitaus is commonly found in damp places, around farm dams, and streams. It usually occurs close to the water's edge where it provides important habitat for many small animals such as insects, snails and frogs. Yabbies will eat the fresh new growth of Common Rush. It is used in wetland rehabilitation and can tolerate drought.

⑫ River Oak

Casuarina cunninghamiana favours creeks and rivers just to the east and west of the frosty tablelands. It will grow in-stream and on nearby dry land. River Oaks, or River She-oak, plays a major role in stabilising riverbeds and will quickly re-colonise eroded or open areas after flood damage. Large trees that have fallen into the stream help make deeper holes and give cover to fish and other animals. The tree is an important windbreak and plantation species. Actinomycete bacteria (*Frankia*) occur in nodules on the roots and fix atmospheric nitrogen.

River Oak

⑬

In 2012 Leonardo Pisano nicknamed 'Fibonacci' published Liber abbaci (The book of calculation) introducing modern arithmetic to Western Europe. The greatest mathematician of the Middle Ages is best known today for the "Fibonacci sequence". The sequence appears throughout nature and has a close connection with the Golden Ratio often denoted by the Greek letter ∅ (phi). Here Ribbon Gum has been planted in a natural spiral. Many plants follow the Golden Ratio such as the Golden Everlasting Daisy and Ladies' Tresses pictured. The Fibonacci numbers are 0,1,1,2,3,5,8,13 and so on adding the last two numbers each time.

⑬ Ribbon Gum

E. viminalis often grows near Mountain Gum *E. dalrympleana* (site 4) and they can sometimes be hard to tell apart. The easiest way is to look at the leaves of a seedling tree. Ribbon Gum has long narrow opposite greenish leaves whilst Mountain Gum has much broader rounder greyish leaves. The two trees play a very important part in riparian areas where they often form a high canopy over creeks and gullies. Once mature these gums produce many varied sized hollows that are used by possums, gliders, parrots and bats. Mature tall trees provide nest sites for larger birds such as Wedge Tailed Eagles.

Ladies Tresses

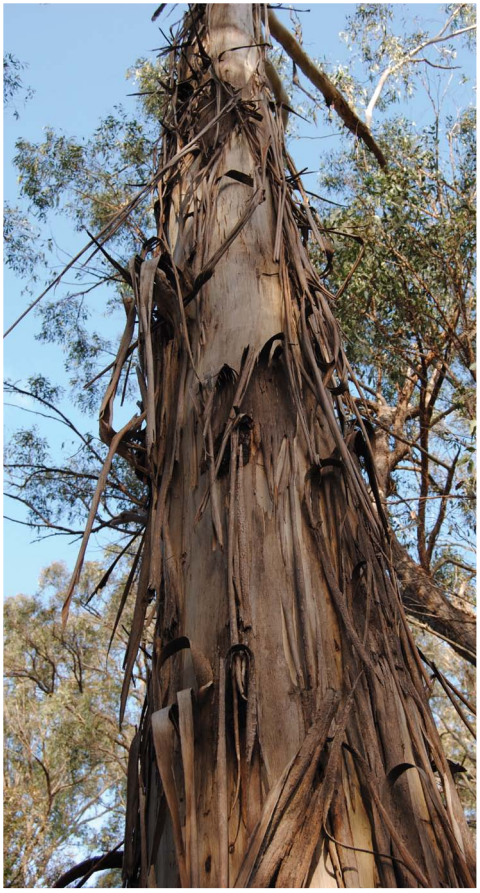
Golden Everlasting Daisy

⑬ Blackwood

Acacia melanoxylon can live to well over 100 years and grows in a variety of forms from Tasmania to far north Queensland. Blackwood produces timber of a very high quality which is used in joinery, fine furniture and musical instruments. It is easily worked, very stable and has a beautiful colour ranging from a deep gold to red-brown. Blackwood in our region rarely reaches millable sizes except to the east near places like Dorrigo. Around Armidale, Ebor and Ben Lomond the tree is shorter and stunted and grows on a range of soil types. It is a very important component of the understorey providing numerous opportunities for food and shelter for native fauna. The tree is often planted as a "pioneer" species in re-establishing rainforest.

Planted by HiCUB and community volunteers

Ribbon Gum



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