

ARMIDALE TREE GROUP NEWSLETTER

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Native Trees on Farms – Money in your Back Pocket

by Sharon L. Brown



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Cover photo: Tree guard trials on native species at 'Lakeview'.

Editors note: Our 'Summer' Edition

Dear Friends

Welcome to our 2016 Summer edition of the ATG Newsletter. Our new ATG Management Committee member Sharon Brown has shared some of her research with us in her feature article *Native Trees on Farms – Money in your Back Pocket*.

Sharon is a PhD candidate at the University of New England and her research is part of the Local Land Services (LLS) Brigalow Nandewar Biolinks project, supported by the Australian Government's Biodiversity Fund. The Biolinks Project is providing research and support to encourage private landholders to enhance and increase natural vegetation, and to capitalise on the production benefits of natural biodiversity on-farm. Sharon has carried out trials on "Lakeview" at Uralla using different types of tree guards on newly planted seedlings to reduce stress during the severe New England winters. Her comparisons of tree guards using five native species (*Leptospermum polygalifolium*, *Callistemon pungens*, *Eucalypts viminalis*, *E. acaciiformis* and *E. stellulata*) was significantly better in 600 mm tall semi-transparent corflute tree guards, compared to seedlings planted in milk cartons, regardless of their position on sloping sites.

Kerry Steller

President's Report - Dave Carr

In 2015 we took a very positive step in the management of the Armidale Tree Group. After David Hardwick finished his appointment and moved to Albury, we appointed Dan Davies as the new manager. Dan has been with the Tree group for a long time, so it is fantastic to be able to give the management position to someone who has 'come up through the ranks'. I have every confidence that Dan will lead the Tree Group on to bigger and better things, with the support of the rest of the staff and the Committee. After a fairly disastrous year in 2013/2014 I am pleased to say that we managed to turn this around with a small profit for 2014/15. We had to make some significant changes to staffing and other expenditure, but I think the more favourable weather and funding for tree planting helped most.

We have recently started a new partnership with Greening Australia NSW and Transgrid. The partnership will enable us to deliver assistance for tree planting projects up to \$4500. We have 7 projects available for the Armidale area, 2 for the Nundle/Tamworth area and 1 for the Barraba/Bundarra area. The grants will supply funding for seedlings and guards and fencing materials. Recipients will need to plant the trees, prepare the sites and erect the fence. If you are interested please contact me at dbcarr@bigpond.com for more details. We are pleased to see Transgrid contributing to environmental projects in the region after a long association with WWF and Greening Australia in the 1990's. We hope the partnership extends into future years.

We were also successful with two grant applications to Northern Tablelands Local Land Services. One will allow us to carry out a survey of landholders across the Northern Tablelands to determine the extent and severity of dieback, which seems to be taking hold in some areas again. The other grant will allow us to start developing a

database with LLS to store plant species information. From this database we will be able to print local species guides, create books and brochures or simply print plant labels for the nursery.

Over the last six months we have been working closely with Citizen's Wildlife Corridors. CWC have struggled to maintain an active committee to run the group and maintain their projects. The Tree Group have offered to support them as a sub-committee of ATG, which means they can relinquish their incorporated status. We will soon be putting a proposal to members of both ATG and CWC that CWC becomes a sub-committee of ATG and that we merge our charitable funds. This will mean we have to make a slight change to the designated purpose of our fund. We hope to align this change with a review of future projects for the Tree Group. CWC grew out of the work of the Tree Group when Kath Wray recognised a need to encourage landholders to share information and work on projects to plant trees for connectivity. The proposed change will simply bring the two groups back to their origins.

Finally, we are wrapping up our 3 year Environmental Trust funded project, 'Restoring the Grassy Bits' which has allowed us to develop techniques for managing the grassy understorey of our New England Woodlands. Look out for a field day to show our results soon.

ATG Management committee 2015:

Dave Carr – President, Tim Collins – Treasurer, Struan Fergusen – Secretary, Helen Schwarz, Bruce Southcott, Chris Nadolny, Josh Biddle, Peter Metcalfe, Kath Wray, Sharon Brown, Kerry Steller - Public Officer.



Dan and Dave helping volunteers plant trees on Black Gully during the Black Gully Festival

Recent Revegetation around the Region

The Environmental Services team has been busy planting in parts of the region. Here are some pictures to show the progress. Contact us if you would like some revegetation done.

Dan Davies

Environmental Services Manager and ATG Nursery Manager

manager@armidaletreegroup.org.au



North



East



West



South

Native trees on farms – money in your back pocket

by Sharon L. Brown, PhD Candidate, University of New England

We tend to take the native trees in our environment for granted. They are invisible to us, as we drive along our country roads – just something that has always been there. But on the New England Tablelands the landscape is changing. Our native tree populations are in decline - *severe* decline. Grey, sun-baked skeletons line our roadways now, where once majestic eucalypts once stood – reminders of better times. From above, matchsticks, thousands of them, laid over and scattered as far as the eye can see. But do we *really* understand the value of this disappearing resource? How will this impact our lives, our livelihoods, and our futures? And what benefits do we derive from trees? Among landholders, this last question remains a hotly debated issue. In early colonial days the clearing of land was strongly encouraged – back when one eucalypt tree equated to an acre of lost land. Nature and agriculture were deemed to be incompatible (Schirmer and Bull 2014). Thankfully, times are changing, and attitudes are changing. Why? Well, it quite simply comes down to money in the back pocket. Researchers have shown consistently and conclusively that establishing shelterbelts on farms increases productivity in all agricultural sectors, including the dairy, wool, meat and cropping industries. These increases, some of which are listed below, are *substantial*.



Sheep enjoying the shade at The Hill (landholder Michael Taylor)

Sheep

- Sheltered sheep exhibit a 31% increase in wool production and a 21% increase in live weight (Lynch and Donnelly 1980)
- Sheltered lambs exhibit a 50% reduction in losses and 28% increase in survival rates (Bird 1998)
- Heat load reduction on ewes at joining and lambing result in lambs with faster growth rates and more wool during the first 16 months of life, and 10-16% more lambs present at marking (Anderson 1986)
- Heat stress is detrimental to ram fertility, ovulation rate, conception and foetal development in ewes (Anderson 1986)

Cattle



Friesian cows at Lakeview (landholder Cam Banks)

- Shading and protection from high humidity alleviates stress, improving milk production and weight gain (Reid and Bird 1990)
- Sheltered areas of farmlands exhibit 20-30% higher yields than unsheltered areas with annual benefits of \$38 -\$66 per ha (Fitzpatrick 1994)
- Heat stress reduces stock fertility, weight gain, increases calf mortality and has been linked to increased abortion rates and undersized calves (Cremer *et al.* 1990; Gregory 1995)

- Cold stress reduces live weight gain in cattle by 31% over several weeks (Anderson 1986)
- Unsheltered dairy cows produce up to 26% less milk than shaded cows on a 27°C day (Fitzpatrick 1994)
- Milk yields are depressed by the cold at a rate of 1.34 kg per day (Anderson 1986)

Pasture protection

- Shelter increases pasture and crop yields by reducing soil moisture loss and moisture loss through transpiration (Lynch and Donnelly 1980)
- Sheltered pastures exhibit a 20% increase in average annual pasture growth (Radcliffe 1983)
- Sheltered pastures lose 12mm of water less than open pasture during the spring growing season (Siepen 1983)
- Sheltered pastures exhibit a 36% increase in grazing days compared to unsheltered pastures (C. Banks, personal communication, April 2014)



Engineered Woodlands at Blaxland (landholders James and Caroline Street)

Crop protection

- Shelterbelts can increase crop yields by up to 22% for oats and 47% for wheat (even allowing for cropping land lost due to the competition from the trees) (Dengate and Dengate 1983)
- Sandblasting at the seedling stage reduces plant growth due to physical damage and moisture stress (Anderson 1986)

Native trees also deliver a range of indirect benefits to landholders, which fall under the banner of ecosystem services. These include the provision of clean water, healthy soils and important crop pollinators, the regulation of pests and diseases, and the mitigation of salinity, soil erosion and climate change (Fischer *et al.* 2006; Wallace 2007).

It is encouraging to see the long lines of milk cartons and plastic tree guards winding their way across the New England. Proof that landholders are changing the way they think, and the way they farm. Tree-friendly farming allows agriculture and nature to co-exist very successfully. It is a positive step towards achieving a healthy banks account and a healthy environment.

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Blooming in Summer by Warren Sheather

There are plenty of blooming plants in our summer garden. Over the years we have planted a wide range of natives ensuring that no matter what the season there is always something in flower.

By planting very close together we have created dense shrubberies. With this high density the plants shelter and protect each other. This has allowed us to grow many more varieties than if we planted in the “conventional” way with plants rather more widely spaced. This high density and diversity has had another pleasing outcome. This has created a haven for small native birds and we now have permanent populations of a number of species.

Leptospermum “Rudolph” is a hybrid tea tree bred by a nursery in southern NSW. One of “Rudolph’s” parents is *L. spectabile* a rare species from the Colo River, near Windsor and *L. morrisonii*.



Leptospermum “Rudolph”

“Rudolph” is an upright, medium shrub that reaches a height of two metres in our garden. The foliage is an attractive purplish colour and the large flowers are an eye-catching red. Flowers are both profuse, conspicuous and carried through summer. The foliage colour is inherited from *L. morrisonii* and the flower colour from *L. spectabile*. Light pruning is appreciated after flowering.

L. “Rudolph” is a hardy, free flowering shrub. Both foliage and flowers are striking features.

Melaleuca huegelii is known as the Chenille Honey-myrtle. The name probably refers to the appearance of the flowers. *M. huegelii* is an erect or sometimes spreading medium shrub. Small leaves are triangular. In late spring and summer plants produce large numbers of long, cylindrical, cream-coloured flower spikes. The flower spikes light up our garden and attract many native insects especially beetles. Remove the brushes as they fade to keep plants bushy and blooming bounteously.

Propagate from seed or cuttings. We prefer cutting propagation because these plants will flower sooner than those grown from seed.



Melaleuca huegelii

Melaleuca “Ulladulla Beacon” is a low growing form of *M. hypericifolia* and is found on coastal headlands on the South Coast of NSW.

“Ulladulla Beacon” reaches a height of 50 centimetres with a 1.5 metre spread. Lance-like leaves are light green and about four centimetres long. In late spring and summer plants produce many large rusty-red bottlebrush-shaped flowers. The dense growth habit, of this mounded ground cover, effectively stifles weed growth and provides safe nesting sites for small birds. This spring blue wrens built a nest in one of our specimens.

Growth habit, foliage and flowers are all attractive features of *M.* “Ulladulla Beacon”. Propagation must be from cuttings to maintain this plant’s desirable characteristics.



Melaleuca “Ulladulla Beacon”

BOTTLEBRUSHES **by Peter Metcalfe**

Everybody grows bottlebrushes. They are colourful and hardy plants that are rewarding in the garden. ATG regularly adds bottlebrushes to farm plantings to add to the biodiversity of plantings by providing a rich source of nectar for birds and insects. The honeyeaters are attracted when the bottlebrushes are flowering and the many insect eaters are attracted by the insects that come for the nectar and pollen. Other than a specialised sawfly, not many insects eat the leaves of bottlebrushes, probably because they are usually tough and laden with oils typical of other members of the eucalyptus (Myrtaceae) family. Hold a leaf up to the light and you can see the oil glands.

In nature bottlebrushes (*Callistemon* species) typically grow in poorly drained and nutrient poor soils. Usually in any genus of Australian plants most species are to be found in WA but the bottlebrushes break the rules by having the vast majority of species native to the eastern states and just 2 from WA. The genus was well named by the excellent botanist Robert Brown. From the Greek kalos- beauty and stemon – thread which describes accurately the stamens which make the flowers beautiful.

There are a huge number of cultivars of bottlebrushes and this can be explained by the simple “open” pollination system of the genus. There are no specialised pollinators for each species to keep them “pure”. The shallow cups that hold nectar at the base of each flower allows a huge range of insects and birds to reach the nectar. The most effective pollinators are honeyeaters which get dusted with pollen as they reach in past the anthers and stigmas to reach the nectar below. Bees and many other insects can roam around below the anthers, collecting nectar without touching the stigmas and anthers above. There are several natural hybrids found in the bush and hundreds of cultivars have been selected from seedlings arising from cross-pollination between different species growing in gardens. See Wrigley and Fagg (1993) for an impressive compendium of species and cultivars of *Callistemon*.

New England is the home of quite a few species; virtually all of them worthy of a place in the garden. They are particularly attractive to honeyeaters such as Eastern Spinebills. Local bottlebrushes grow in poor soils such as coarse granite, trachyte and even serpentinite soils.

The best known and most widely grown is *C. pungens* which is known as Lana Bottlebrush, Tom’s Cabin Bottlebrush and other names as different populations were found scattered across New England. It has purple flowers about 6cm long and 4 cm wide. The species name refers to the pungent (sharp) point to each of the rather stiff leaves.

A bright pink form of *C. pityoides* was found locally at “Banalasta” near Bendemeer. *C. flavovirens* is found at Torrington and has green flowers. At least four other bottlebrushes are found at Torrington State Conservation Area. *C. comboyensis* has been found at Mann River Nature Reserve. It has bright red flowers and the young foliage is soft and furry. The local cultivar of the widespread River Bottlebrush (*C. sieberi*) is a tough little plant with cream flower heads that grows in swamps towards Ebor. There are pink flowering forms available. It is named to honour a Czechoslovakian botanist F. W. Sieber. *Callistemon* “Bakers Creek” comes from a stream out near Bundarra. It was planted in the Mike O’Keeffe Woodland over

towards Kentucky Street and has proven to be a vigorous and showy cultivar with large red flower heads.



Callistemon pungens

Callistemons have evolved with bushfires. This is shown by the way plants hold their woody “gumnut” fruits year after year. The fruits remain green and fire resistant. Once a fire kills the mother plant all the fruits dry out and the tiny thread-like seeds are released into the ash bed. At the ATG nursery bottlebrushes are propagated from seed collected from wild populations. The mature fruit are collected and allowed to dry out and drop their seed. The seeds are then sown into seedling mix to be pricked out later into Hikos. Even though the seeds are very small they remain viable for some years.

Not only can new plants develop from seeds but the old burnt off plants can sprout again from the base. This ability to re-sprout means that bottlebrush plants can be cut back to even thick stems and new shoots will develop to rejuvenate an old plant. Mature plants can be given a “short back and sides” with hedge clippers to stimulate lateral buds and thicken the foliage and ensure prolific flowering next season. Keep the plants watered during spring as they develop their flower buds. During the last two dry springs many plants aborted their flower buds and flowering was quite poor.

After flowering it is best to “dead-head” the plants. Under each flower head there are lateral buds that will sprout if the old heads are nipped off. There is a weak point just under the flower head that can be snapped with the thumbnail. All cultivars continue to grow on beyond the flower head, most with a single bud but some branch after flowering and so do not need the usual “dead-head” pruning.

ATG always has a good selection of bottlebrushes so you can plant a range of species and cultivars to provide different colours, different foliages and a longer flowering season for the birds and insects.

Advancing the ATG Range

ALICIA COOPER

2016 will see the start of a larger and more diverse range of advanced stock in the ATG retail section. This will provide further choice for our customers, as well as meeting the demand we have noticed over the past year. We will be providing the species we have carried in the past, such as Eucalypts, Grevilleas, Callistemons and Acacias, however we also aim to have a nice selection of ornamental Tea Trees, Boronias, Prostantheras, and other flowering delights. Advanced plants can offer immediate satisfaction for the more impatient gardeners among us and are often sought after by landscapers as they give a more finished look to the garden. As an added benefit, the important formative pruning has already been completed by nursery staff. It's also harder for our four legged friends to wreak as much destruction on a large plant!



We currently have a number of advanced River Oaks available (*Casuarina cunninghamiana*). They are a very attractive tree, with soft needled branches growing low down on the trunk, making them excellent for windbreaks and screening. They would also be a great choice for lining a driveway; the evocative whispering produced as the wind moves through the foliage being reason enough to consider them.

Casuarina cunninghamiana

I will finish up with a mention of our Fig trees. They are the Brown Turkey variety, struck from cuttings generously given to us by a local gardener. A prolific bearer, the fruit have copper coloured skin with sweet pink flesh and are great for stewing, drying or eating fresh. Fig trees are not the sole domain of large gardens, as they can be grown quite happily in pots. Keeping the roots contained results in the tree putting more effort into producing fruit, rather than reaching for the clouds. Brown Turkeys are self-pollinating, so if you'd like to try your hand at growing your own delectable, fresh figs, pop on in and pick one up today.



Brown Turkey Figs

Membership Application/Renewal

Name: _____

Address: _____

Telephone: _____

Email: _____

Payment method: cash / cheque /credit card /direct credit

Membership is \$5.00 per year

Donation \$ _____

Please find enclosed my/our cheque for \$ _____

Make cheques payable to Armidale Tree Group Inc.

or

Please debit my credit card for \$ _____

Card type: Visa / Mastercard only

Card number: _____

Expiry date: _____

CCV number: _____

Name on card _____

Signature: _____

To pay by Direct Credit Please remit payment to
BSB: 932000 Account No...620682 (please tag payment as 'subs')

accounts@armidaletreegroup.org.au

Donations over \$2.00 are tax deductible to The Armidale Tree Group Fund

Date processed: _____

Office use only