ARMIDALE TREE GROUP NEWSLETTER

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ATG Helps to Bring Threatened Birds Back to our Creeklands
By Helen Webb

Editor: Kerry Steller
Armidale Tree Group
80 Mann St, Armidale, 2350
Phone 67711620
www.armidaletreegroup.org

Cover Photo: **Australian Reed-Warbler** (*Acrocephalus stentorius*) Photo Bob Cummings.
"I concluded that the lovely Reed Warbler could only be a talisman of a watercourse and landscape function on the path to healthy regeneration". Charles Massey. [1]

Editor's note: 2018 Spring Edition

Welcome to our Spring Edition of the Armidale Tree Group Newsletter. It is refreshing that we have had rain and our new stock in the nursery looks fabulous and ready to be planted. Get down and see Alicia and the staff while the soil is moist. Follow us on Facebook for our great plants in stock.

ATG Helps to Bring Threatened Birds Back to Our Creeklands by Helen Webb is of potential interest to anyone involved in revegetation works and/or with an interest in wildlife. Helen Webb is an Armidale Tree Group Committee member and volunteer and also works as a volunteer for Southern New England Landcare, participating with many other volunteers in plantings and maintenance of revegetation sites along the creeklands. She is an active member of Armidale Urban Rivercare Group and also co-ordinates a small Landcare Group called the Peoples Park Group, which has focussed on consolidation of problem areas in existing plantings, particularly in some of the High Country Urban Biodiversity Sites. Having learnt of the declining or threatened status of a number of woodland birds from local bird experts, and noticed some of these species occurring within the Dumaresq Creek plantings, she has taken a particular interest in the potential of these plantings to expand habitat for woodland birds. Helen gratefully acknowledges the help of Steve Debus in highlighting the plight of our woodland bird species, providing bird sighting data and helping her to identify birds and to prepare this article; and the help of Southern New England Landcare and Andrew Huggett in raising her awareness of the role that replanting is playing in expanding and enhancing bird habitat in the Armidale Region.

Peter Metcalfe offers expert advice from his continued observations of his extensive native garden in his article *Bird Diversity and Tree Health*.

Dave Carr has continued the theme of drought from our Winter Newsletter with his article on *Making the Most of the Drought.* Successful tree planting and regeneration can certainly occur during the drought as the opportunities need not be missed because of lack of rain.

In education news, Armidale City Public School brought their Stage 3 students to the Mike O'Keeffe Woodland and Woodland Centre at the end of Term 3 to learn about what we do and to plant some trees. See pictures on page 19.

Upcoming dates to note:

- ATG AGM is coming up. A notice will be sent three weeks prior to this event.
- Enmore TSR Planting is still awaiting confirmation of a date. We'll keep members posted of this event, likely to be early December.
- Black Gully Festival is on Saturday 17th November 10am-10pm. See brochure in this issue.

Kerry Steller (editor)

[1] Quote from Massy Charles, 2017. Call of the Reed Warbler. University of Queensland Press p147.

ATG Helps to Bring Threatened Birds Back to our Creeklands
By Helen Webb

Who planted our Creek?

Establishment of native plants along Dumaresq Creek in Armidale has been undertaken over a period of years by Armidale Urban Rivercare, the High Country Biodiversity Project and Armidale Tree Group in association with and with the support of State, Federal and Local Government funding grants, Southern New England Landcare, Armidale Regional Council, University of New England, and numerous school groups and community members and sponsors including the Armidale Lions Club and Armidale Bowling Club. Armidale Tree Group provided the plants for the majority of these plantings.

The focus of stakeholders involved in revegetation has varied, aiming overall towards reducing weeds and replanting with local native species. The result of this effort has been a huge expansion and increase in connectivity of native vegetation contibuting to the return of threatened bird species to our Creeklands.

What helped our birds come back?

Information from Threatened Species Recovery plans has provided the basis for a key for the assessment of habitat value for urban native vegetation plantings (based on value for native woodland birds as an indicator species). This key (see table 1) provides a useful tool for comparing plantings that are maturing along the Creekland and highlighting aspects of the plantings that could be enhanced to provide better habitat.

It is interesting to note that comparing different sites along the Creekland, the habitat value of the Mike O'Keeffe Woodland had he highest habitat value of the plantings, the next highest being the High Country Urban Biodiversity Planting between Douglas and Dumaresq St and the AURG plantings west of Taylor Street and north of Dumaresq Creek and East of Taylor Street south of Dumaresq Creek. In general, the Rivercare plantings along the creek had greater floristic and structural diversity and better connectivity hence scored higher than those further from the creek.

Photo 1:
Azure Kingfisher (*Cyex azurea)* Photo: Helen Webb

Table 1: KEY FOR HABITAT VALUE ASSESSMENT FOR URBAN NATIVE PLANTINGS & VEGETATION (based on value for native woodland birds as indicator species)[2] compiled by Helen Webb

Value assessment	**0**	**1**	**2**	**3**	4
No. of small bird species seen regularly	Absent	1	2-5	6-10	>10
Structural diversity (estimate proportion of site for each structural layer)					
Canopy Trees	Absent	<10m	>10m	Mature	Hollows
Air space for canopy growth (volume estimate)	N/A	<2x2x2m³	<3x3x3m³	<4x4x4m³	>4x4x4m³
Midlayer trees/shrubs	Absent	<30%	30-60%	60-90%	>90%
Shrub layer	Absent	<30%	30-60%	60-90%%	>90%
Groundcover	Absent	<30%	30-60%	60-90%	>90%
Floristic diversity (estimate number of species)					
Canopy Trees	Absent	1 sp	2 sp	3 sp	>3 sp
Midlayer trees/shrubs	Absent	1 sp	2 sp	3 sp	>3 sp
Shrub layer	Absent	1 sp	2 -3 sp	4-6 sp	>6 sp
Groundcover	Absent	1 sp	2 -5sp	6-10 sp	>10 sp
Food Sources					
Nectar producing flower source	Absent	Sparse	Moderate	Abundant	
Flowering at different times	1sp	2 sp	3 sp	>3 sp	
Seed producing shrubs eg acacias	Absent	Sparse	Moderate	Abundant	
Seed producing groundcover eg grasses, native geranium	Absent	Sparse	Moderate	Abundant	
Habitat for insects in vegetation	Absent	Sparse	Moderate	Abundant	
Logs and coarse woody debris present	Absent	Sparse	Moderate	Abundant	
Nesting					
Nesting materials available (grass, loose bark)	Absent	Sparse	Moderate	Abundant	
Suitable sites for nests e.g. dense prickly shrubs	Absent	Sparse	Moderate	Abundant	
Distance to water					
Creek	>100m	60-100m	30-60m	10-30m	0-10m
Freshwater pool or dam	>100m	60-100m	30-60m	10-30m	0-10m
Refuge from predators eg currawongs, crows, cats, foxes, dogs					
Dense / prickly shrubs	Absent	Sparse	Moderate	Abundant	
Dense sedges/shrubs adjacent /overhanging ck	Absent	Sparse	Moderate	Abundant	
Dense patches of cumbungi/ phragmites	Absent	Sparse	Moderate	Abundant	
Piles of woody debris / rocks / mulch	Absent	Sparse	Moderate	Abundant	
Size / connectivity / health / weed predominance estimate					
Planting width	<10m	10-20m	20-30m	30-50m	>50m
Creekside planting length	<50m	50-100m	100-200m	200-400m	>400m
Stepping stone planting size	<20m x 20m	>20 x 20m			
Distance to next dense vegetation north or west	>100m	60-100m	30-60m	10-30m	0-10m
Distance to next dense vegetation south or east	>100m	60-100m	30-60m	10-30m	0-10m
Native vegetation health (% healthy plants)	<10%	10-30%	30-60%	60-90%	>90%
Weeds (% area of site covered)	>50%	30-50%	10-30%	<10%	Minimal

Note: This key offers a means for comparison of habitat features in general but does not give comparative weighting to values that may be of greater or lesser importance eg canopy trees and presence of cumbungi are of value to some but not all species. Edge effect is not considered as all creeklands plantings give access to 'edge' habitat

What birds can we see today?

TABLE 2: DUMARESQ CREEK BIRDLIST compiled from observations by Steve Debus and Helen Webb 2018.
KEY: C = Common, M = Moderately Common, O = Occasional, R =Rare,

Bee-eater rainbow	R
Blackbird english	C
Butcherbird grey	M
Cockatoo sulphur crested	O
Cockatoo YT black	M
Corella short-billed	C
Crow Torresian	R
Cuckoo brush	R
Cuckoo channel billed	R
Cuckoo fan-tailed	O
Cuckoo horsefield-brnz	R
Cuckoo shining-bronze	R
Cuckoo-shrike BF	M
Currawong pied	C
Dollarbird	O
Dove peaceful	R
Dove spotted turtle	C
Duck black	C
Fairywren superb	C
Fantail grey	M
Finch double barred	R
Finch red-browed	M
Flycatcher leaden	R
Friarbird noisy	O
Frogmouth tawny	O

Galah	C
Gerygone WT	R
Honeyeater yellow-faced	C
Honeyeater white-plumed	R
Jacky winter	R
Kingfisher sacred	O
Kingfisher azure	R
Koel common	M
Kookaburra laughing	M
Lorikeet rainbow	M
Magpie	C
Moorhen dusky	C
Miner noisy	M
Mistletoe bird	R
Myna common	C
Oriole olive-backed	O
Pardalote spotted	M
Pardalote striated	M
Parrot king	O
Parrot red-rumped	C
Peewit	C
Pigeon crested	C
Raven australasian	O
Raven torresian	O
Reed-warbler clamorous	C
Robin eastern-yellow	R

Robin scarlet	R
Rosella crimson	C
Rosella eastern	C
Scrub-wren white browed	O
Shrike-thrush grey	C
Silvereye	C
Songlark	O
Sparrow house	M
Spinebill eastern	O
Starling common	C
Swallow welcome	M
Thornbill brown	M
Thornbill buff-rumped	M
Thornbill striated	M
Thornbill yellow	M
Thornbill yellow-rumped	M
Tree-creeper WT	R
Triller white-winged	R
Wattlebird red	C
Whistler golden	R
Whistler rufous	M
Willy wagtail	C
Wood duck	C
Brown Goshawk	O
Black-shouldered Kite	M

Table 2 indicates the occurrence of birds observed on Dumaresq Creek using their common names. Any additional sightings and photos from the public are most welcome. *Table 3* lists declining or threatened woodland birds in the New England region, some of which have been sighted along the creekland.

TABLE 3: Current status of Native Birds

Brown Treecreeper *Climacteris picumnus* – Threatened (Vulnerable)
White-browed Scrubwren *Sericornis frontalis* – Shrub and groundcover dependent, declining
Diamond Firetail *Stagonopleura guttata* – Threatened (Vulnerable)
Speckled Warbler *Chthonicola sagittata* – Threatened (Vulnerable)
Varied Sittella *Daphoenositta Cchrysoptera* – Threatened (Vulnerable)
Jacky Winter *Microecta fascinans* – Declining
Scarlet Robin *Petroica boodang* – Threatened (Vulnerable)
Flame Robin *Petroica phoenicea* – Threatened (Vulnerable)
Dusky Woodswallow *Artamus cyanopterus* – Threatened (Vulnerable)
Brown Thornbill *Acanthiza pusilla* – Declining
Spotted Pardalote *Pardalotus punctatus* – Declining
Rufous Whistler *Pachycephala rufiventris* – Declining
Double-barred Finch *Taeniopygia bichenovii* – Declining

What are the key threats to our birdlife?

Effective revegetation of the Dumaresq Creek riparian zone to reconstruct native vegetation communities is of particular value in the context of declining and threatened woodland birds in the New England area. Key threats to these species are

- loss and fragmentation of habitat, leaving remnants of insufficient size to sustain populations and lacking connectivity to other habitat.
- degradation of habitat, in particular, loss of structural and floristic diversity with loss of mid-storey and shrub layer and of native ground cover and coarse litter.
- competitive exclusion by an overabundant, aggressive, increasing native species, the Noisy Miner (not to be confused with the introduced Common or Indian Myna)
- nest predation by the overabundant, increasing Pied Currawong, assisted by introduced berry-bearing plants in gardens and on rural lands (e.g. privet, hawthorn, firethorn, cotoneaster, ivy, Chinese pistacia, Chinese elm, camphor laurel)
- widespread pervasive factors such as impacts of climate change and disease.[3]

3 www.environment.nsw.gov.au/threatenedspeciesapp/profile Accessed 06/06/2018

Loss of trees, shrubs and native groundcover species through clearing, die-back and grazing has led to loss of habitat that is of sufficient extent, quality and connectivity to enable these woodland birds to meet their needs for food and shelter and to breed successfully and disperse. A 2002 study by Leigh et al in the Wagga Wagga area identified heavy grazing by livestock (analogous to regular mowing) as being detrimental to birds such as Superb Fairy-wrens and Brown Treecreepers that rely on an understorey cover of logs and branches for foraging.[4]

Riparian areas and their associated watercourses are ´ḱeystone´ ecosystems, with the health of ecological communities elsewhere in the landscape dependent upon their health. They form natural corridors linking habitats and are particularly important drought refuges.[5] The fertile alluvial soils and moister conditions along Dumaresq Creek provide a more productive environment for both plants and animals than drier areas of lower soil fertility that tend to predominate in reserves such as Imbota and Yina Nature reserves. Riparian areas have been highly valued for agricultural and grazing purposes. The ecological outcome of this is that many of the watercourses on private land are treeless or otherwise severely degraded hence provide unsuitable habitat for native species. Similarly, riparian areas on public land outside the urban area are often degraded by other uses, in particular grazing, as can be seen at Gara River Reserve and Sunnyside Travelling Stock Reserve.

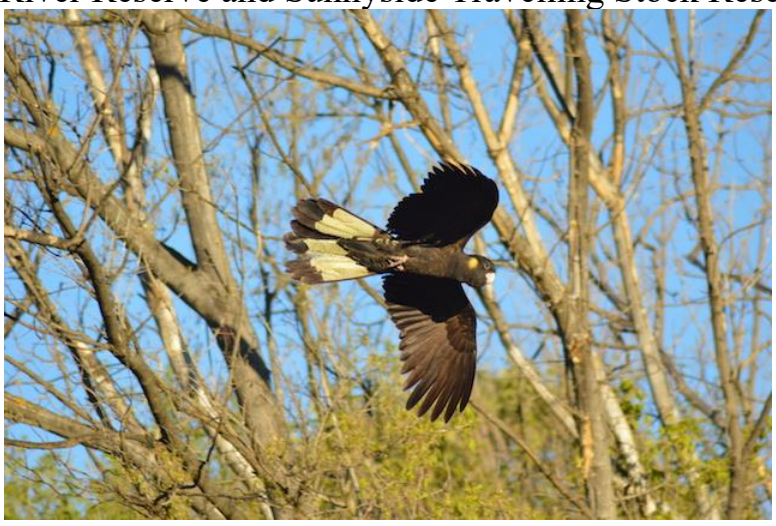

Photo 2: Yellow Tailed Black cockatoo (*Zanda funereus*) flying in the Creeklands. Photo: Bob Cummins

The extensive riparian lands that are publicly owned in Armidale provide a special opportunity for enhancement of wildlife habitat and have the potential to contribute significantly to connectivity between existing remnants and to survival of small woodland birds that are threatened by encroaching agricultural use in surrounding agricultural lands.

4 Thompson L., Jansen A. & Robertson A. 2002 The Responses of Birds to Restoration of Riparian Habitat on Private Properties. Johstone Centre Report No. 163, Land and Water Australia.

5 www.environment.act.gov.au ACT Aquatic species and riparian zone conservation strategy 2007 accessed 06/06/2018

Restoration of natural conditions and native species along Dumaresq Creek also provides a special opportunity for park users to connect with and enjoy the natural environment in a way that is not available to many urban dwellers. Many local residents and visitors regularly walk along the Dumaresq Creeklands and speak positively of their enjoyment of the area. One resident who walks her dog adjacent to the Douglas Street plantings was recently delighted to share her photos of Yellow-tailed Black Cockatoos feeding on hakea fruits in the plantings there. Bird watching is a popular pastime by many local residents and provides an added attraction for visitors and tourists in the area.

The benefits of revegetation that is maturing along Dumaresq Creeklands are demonstrated by regular use by small birds including the White-browed Scrubwren and Superb Fairy-wrens as well as a number of other small bird species. Survey of bird species prior to and since revegetation has not been systematic but the data that is available indicates that small bird species not previously listed are now being found in the area east of Taylor Street including a Scarlet Robin (Threatened) and White-plumed Honeyeater which have recently been seen utilising the creeklands habitat. (A friend of mine - non birdwatcher - was delighted to have identified a Rufous Whistler there yesterday using her bird App).

The Bird sighting data was collected between 2015 and 2018 by Steve Debus, Bob Cummins and myself. (I would not have known of the shining bronze cuckoo and the peaceful dove and Rufous Songlark but for his photos)

What actions can be taken to help our birds?

A range of actions have been identified as enhancing bird habitats. A number of the actions are identified by the NSW Government in Critical Action plans for the recovery of threatened species. Inclusion of these actions in policy documents that guide revegetation works along Dumaresq Creeklands and associated ongoing financial support for expansion and maintenance of these works would clearly demonstrate Council’ś pro-active role in recovery of Threatened Species, as well as enhancing the environment and passive recreational opportunities for Armidale Residents.

Actions include:

- Protect and maintain existing high-quality habitat, which includes open forest, woodland and grasslands with a diverse ground layer dominated by a mixture of grass species which seed at different times of the year (providing a year round food supply) and provides scattered shrubs for shelter. Examples of remnant vegetation that are currently protected

include Snowgums Reserve, the reserves adjacent to the Arboretum on South Hill and adjacent to the cemetery and the reserve currently used by the Archery Club. There are also significant areas of bushland held in private ownership and it would be valuable for council to identify these and investigate options such as planning provisions or land purchases that would enable remnants providing significant habitat to be retained.

- Regenerate degraded habitat.
- Undertake revegetation using a diverse mix of locally appropriate native species[6], which will produce high quality habitat. Aim for a floristically and structurally diverse and spatially variable understorey in woodland patches. Revegetation efforts should focus on expanding areas of existing habitat, connecting isolated habitat patches (either through corridor or stepping stone plantings) or establishing additional habitat patches. Stepping stone plantings are of most value if at least 20x20 metres in area. Avoid gaps of greater than 100 metres between habitats and along linear remnants as wider gaps deter the passage of small birds. Areas with access to water, especially riparian areas, are identified in Threatened Species Recovery Plans as being particularly important. Areas of riparian revegetation are of more value when at least 50 m wide.
- Where possible retain standing dead trees, fallen trees, coarse woody debris and logs in remnants and in plantings and place material from salvaged or fallen trees and logs into rehabilitated remnants and plantings.

Photo 3: Willie wagtail (Rhipidura leucophrys) . Photo: Bob Cummings

- Apply augmentation planting of missing structural layers (e.g. mid-storey

6 Locally indigenous plant species have the potential to maximise the arthropod populations which provide a food source for ground foraging birds.

wattles, shrub layer species or coarse tussocky ground layer species) using locally indigenous species appropriate to the vegetation type and topographic position predicted for replanting sites.

- Design plantings to deter Noisy Miner birds by ensuring that corridors are sufficiently wide (see above) and varied in structure and composition (using a mix of canopy and mid-layer tree species, shrubs and tussocky ground layer species). Mown areas with scattered large trees favour birds such as currawongs that compete aggressively with small birds or prey on eggs and nestlings.
- Retain mistletoe and scattered patches of dense shrubs for nesting and feeding habitat particularly in areas close to water. Flowering mistletoe is of particular value for nectarivorous birds such as honeyeaters.
- Investigate the potential effectiveness of providing additional nesting materials such as coir in enhancing nesting success of small birds.
- Increase the prevalence and diversity of food plants by increasing and enhancing native ground cover. Undertake control of invasive exotic plant species that compete with native grasses. Replace areas of exotic perennial pasture grasses (eg Phalaris, cocksfoot and paspalum) or aggressive environmental weeds (e.g. African Love-grass, serrated tussock and Chilean needle-grass) with native grass species appropriate to the vegetation type.
- When using herbicide, avoid non-target impacts of herbicide use.
- Set aside unmown areas of native grasses to enable grasses to seed, providing a food source throughout the year for ground foraging birds.
- For species such as the Scarlet Robin, strategic patch burns are recommended to control build-up of ground layer biomass (particularly where there is a high cover of exotic annual pasture grasses such as oats, ryegrass, bromus and barley), burning up to 5% of a site per year. Illegal fires which are lit along the creeklands in Armidale, while undesirable, sometimes achieve a positive effect that is consistent with that of strategic patch burns. It may be possible in the future to work collaboratively with members of the community to support cultural and contemporary patch burn practices for healthy landscapes.
- Remove introduced fruit or berry producing plants (for example blackberry, hawthorn, cotoneaster, sweet briar-rose and privet) that provide a food supply for nest predators such as Pied Currawongs. Removal of non-native vegetation should be staged as it can provide valuable interim habitat and connectivity between areas of native vegetation (e.g. blackberry provides a refuge for small birds such as fairy wrens, and insectivorous birds will forage on privet and hawthorn or shelter from predatory birds in the dense foliage of deciduous trees). Care should be taken to avoid widespread removal of beneficial exotic woody

vegetation without replacement. Replace removed thickets with locally indigenous species particularly bipinnate wattles, prickly native shrubs such as Blackthorn (*Bursaria spinosa*), and She-oaks (*Casuarina* or *Allocasuarina* sp.) as appropriate.

- Raise public awareness of the potential for domestic cats and dogs to prey on or disturb small birds, as well as other fauna including lizards, possums and koalas. Encourage owners to confine cats to residential premises and to put dogs on a leash and move them away from wildlife.
- Raise awareness of the value of native plantings in providing habitat for birds and other native fauna.
- Engage in community education with a focus on threatened woodland birds.
- Establish additional 'mini arboretums' featuring locally threatened or significant trees, shrubs and ground plants (e.g. Blackbutt Candlebark and other New England endemics), at strategic locations with labelling and other interpretive material.
- Support the completion of connectivity of native riparian habitat along the Creeklands from UNE to Cooks Road, and explore prospects for lateral connectivity to parkland and urban bushland away from the Creeklands,
- Phase in native plantings in public urban parklands throughout Armidale.
- Encourage, with incentives, native plantings in private gardens (e.g. emphasise low maintenance and water demands).
- Implement a fox control program in order to limit predation by foxes on breeding waterbirds and other species

It is encouraging to realise that many of these actions are already being implemented in native plantings along the urban reaches of Dumaresq Creekland and that there is evidence that wildlife is responding to the improvement in the health and extent of the created habitat. It is also understood that implementation of some of the actions may not be consistent with other purposes for the land. For example, it is not possible for some of the areas of riparian vegetation to be 50 m wide due to constraints of human usage, paths etc. However, this is possible in some areas, for example the Urban Forest planting

Photo 4:
Superb Fairy Wren (*Malurus cyaneus*)
Photo: Bob Cummins

west of Cooks Road. Similarly, the placement of woody debris may not be appropriate in some areas due to the issue of flooding in the riparian zone, but may be appropriate where it can be effectively anchored or where planting sites are outside the flood zone. The use of woody debris following clearing of woody weeds along the creekline has been observed to provide refuge for small birds and it may be possible to delay removal of such debris until planted species have grown to a sufficient size to provide refuge and replace habitat that has been removed. These are just a few examples of the ways that actions recommended above could be incorporated into planning for further planting in the Dumaresq creek riparian zone.

Continued support for and commitment to ecological restoration of Dumaresq Creeklands in the Armidale urban area will complement extensive revegetation efforts that are being made throughout the community by private landholders and by community groups such as Armidale Urban Rivercare and Armidale Tree Group. As well as providing expert advice and recommendations on suitable plant species for the frost prone flood prone Creeklands area, ATG has provided almost all of the plants used for revegetation along the Creeklands which we can see flourishing today. The support and work of the Tree Group in the revegetation of the urban reaches of Dumaresq Creek, as well as that of many other community members, is having a substantial impact in encouraging a greater diversity of birds to return to the Creeklands. There is great opportunity to enhance and expand on existing plantings to create highly valuable habitat for small birds within the urban area.

Editors note: wouldn't it be great to emulate the return of our threatened species of birds to Saumarez Creek in our Every Tree Counts program.

Enmore TSR Spring planting for Every Tree Counts

The Armidale Tree Group is planning to do a public planting for Every Tree Counts on the Enmore TSR in Spring and it would be great to have lots of volunteers come along for a planting day. More details will be provided once planning and preparation is complete. We have some interested community groups joining us for this venture. We will keep you posted.

EVERY TREE COUNTS

Bird Diversity and Tree Health
By Peter Metcalfe

After many years of "gardening for birds", mostly with plants from Armidale Tree Group, our place is quite a haven for a variety of birds but it is the plants that are the basis of the food web of "Yangoora".

We are conscious of being privileged to see so many birds so close at hand, going about their business. This is definitely one of the free pleasures that are so important to our quality of life. We are also aware that the presence of many small birds is due to the changes resulting from natural regeneration and supplementary planting on the land we manage.

When you see how each species has its own individual way of feeding within the environment you understand how so many different birds can survive in the same area while apparently competing for food. Each utilises a particular micro-habitat within the woodland. It is easy to see that the seed eaters do not compete with the nectar eaters and the insectivores but the many little insect eaters are seeking their food from just a narrow niche in the ecosystem. Even the seed eaters apparently have their own preference for differing grasses and can co-exist in the mixture of grasses. No doubt the encroachment of Paspalum in the woodland is reducing the food available for these native finches adapted to native grasses.

Image 1: Yellow faced Honeyeater (*Caligavis chrysops*) Commonswikimedia.org

Honeyeaters are important pollinators of the eucalypts but they also eat insects, many of which feed on the trees and shrubs. The Brown-headed Honeyeaters generally forage among the leaves of the saplings but you also see them fluttering to deftly catch flying insects in the open spaces between the trees. The Yellow-faced and the Fuscous Honeyeaters seem to hawk after insects higher in the system, catching their aerial prey above the saplings. They also forage in the foliage of trees and saplings but may be subtly divided by their choice of prey from within a common zone. When you look into the setting sun you can see the tremendous number of small insects that are flying in the feeding zone of these birds and that of the Welcome Swallows, Woodswallows, Fairy Martins and, rarely these days, Spine-tailed Swifts.

The White-throated Treecreeper and the Varied Sitella both utilise the trunks and branches of the trees. However, the Sitellas land higher in the tree and work downwards while the Treecreepers start close to the ground and work their way upwards. Spiders must be a major component of their diet. No doubt there is a zone of overlap where both forage but they basically earn their living in different zones. The cuckoos all seem to specialize in caterpillars, even the hairy ones that other birds avoid.

Image 2: White throated Treecreeper *(Cormobates leucophaea)* Wikimedia.org

Thornbills have different foraging zones but both the Brown and the Striated thornbills spend quite a lot of time in the feathery leaved wattles looking for insects. They also forage in the leafy canopy of eucalypts. Pardalotes are tiny birds that forage for insects and for sugary plant secretions in the crowns of eucalypts.

The most spectacular visitors to eucalypts and wattles are the Yellow-tailed Black Cockatoos. They can unerringly find witchety grubs inside the branches and under the bark of trees and then deftly extract them with their massive beaks. My theory is that these birds can see into the infra-red and see the leaves above the twig damaged by the grub as being warmer than leaves that have an uninterrupted water supply. The cockatoos have good hearing and I reckon they walk down the branch until they can hear the grub chewing inside. A few bites and they have a tasty snack!

All these little and big birds are directly or indirectly preying on the insects that utilise the trees and shrubs as their food source. They are the sentinels that protect the trees. Without all these common little birds the plants would suffer from heavy damage from insects. By gardening for birds you are indirectly protecting your plants from insect damage. It is a neat system.

Noisy Miners can disrupt this system by excluding small insectivorous birds from the bush. This leaves the trees without a full spectrum of insect eaters and the trees suffer accordingly. Even worse are the Bell Miners which exclude all the other birds and farm the sap-sucking lerps on the eucalypts. Eventually the trees are “bled” to death by the lerps and “Bell-Miner Associated Dieback” (BMAD) destroys the forest.

Of course the food web goes up to the higher consumers beyond the insects and birds. We occasionally hear the melodious call of the Grey Butcherbird that

symbolises the next layer up in the food chain that preys on small birds as well as insects and lizards. The little insectivorous birds are just a link in the overall food web between plants and predators. The Brown Goshawk is an occasional visitor that is a specialized bird eater. Currawongs raid the nests of smaller birds in spring to feed their own nestlings.

Image 3: Grey Butcherbird (*Cracticus torquatus*) Wikimedia commons.org

We knew we had a full food web when a Barking Owl stayed a few weeks and wiped out our colony of Sugar Gliders. We would have preferred to keep the sugar gliders as they are effective predators of Christmas Beetles that ravage the eucalypts in summer. Unfortunately, there are not many birds that are effective control agents for Christmas Beetles but at least the magpies are equipped to hunt the larvae in the grasslands.

Plant Profile: Philotheca myoporoides "Wax Flower"
By Alicia Cooper

Philothecas belong to that delightful group of plants that are often called "sensory". Sensory is a very loose term and plants are often labelled as such if they please two or more of the following - sight, smell, touch, taste or sound. Like many in the Rutaceae family, (famous for its Citrus members), Philothecas have delightfully aromatic foliage; a crushed leaf might invoke memories of summer pineapple for some, or a blend of citrus-apple for others.

In late spring the profusion of pink buds open to white star-shaped flowers which hold for weeks. Bees adore this shrub and visit the flowers regularly. Growing to about 1.5m x 1.5m, it would make a lovely specimen plant in most gardens, or plant it near a path where you can brush by and savour the delicious fragrance.

Making the Most of Drought
By David Carr

Drought is often portrayed as a natural disaster, yet drought is a frequent, if irregular, natural occurrence. There can be no surprise that drought will occur; the only surprise is when it will arrive and how severe it will be. While drought has terrible consequences for farms and the businesses that depend on them, there can be some positives. Drought can make us reconsider the way we manage the landscape and the balance between farm productivity and biodiversity. Drought can create perfect opportunities for tree regeneration. Finally, we can still continue successful tree planting during drought, providing we follow the principles outlined in the previous newsletter (see articles by John Lemon and Peter Metcalfe).

Landscape management for drought

Landscape resilience is the key to surviving and recovering from drought. A resilient landscape is one that can bounce back quickly from drought, fire, flood or storm, with all of its functions intact. These functions can include soil protection, water filtration, wildlife habitat, carbon storage, nutrient cycling and biomass production to list just a few.

A resilient landscape will have: high species diversity, lots of perennial plants, high ground cover, high levels of soil carbon, fire-responsive plants, drought-tolerant native grasses, structural diversity (i.e. trees, shrubs, forbs, grasses), seed stored in the soil seedbank and connectivity for animals to move in and out. A farm with these sort of features is more likely to cope with future droughts than one with low species diversity, lots of annuals and poor soils.

Now is the time to consider future management options to achieve this resilience. There are many graziers in New England adopting new and innovative management and it is worth looking around to see what they are doing. Landcare and other organisations regularly run field days on farms to showcase these methods.

Grazing management is a powerful tool that can used to increase species diversity, increase soil carbon, and manage plant biomass and groundcover. You can manage the time of grazing, the number and type of animals and the duration of grazing and rest periods. Long periods of rest between grazing can allow plants to develop deeper root systems or allow plants to flower and set seed, including those species declining in numbers.

Alternatively, or additionally, you can plant trees, shrubs and other plants. Trees and shrubs planted in shelterbelts can increase the shelter across paddocks and increase habitat and connectivity for wildlife. Paddock shelter can increase pasture growth, reduce damage from wind-borne soil particles, reduce frost damage to pasture plants and protect animals from exposure to cold, wet winds.
Trees, shrubs, grasses and plants like Spiny Mat Rush (*Lomandra longifolia*) planted in and around creeks and gullies, can significantly reduce the loss of soil from erosion and subsequently improve water quality. A strip of vegetation, including mostly perennial grasses and rushes, 6m wide can prevent most sediment from overland flows from reaching a stream.

While trees and shrubs can compete with pastures for light and water, there is good evidence that native vegetation in patches and scattered across a farm can increase water availability on the farm. Firstly, trees slow down the rate at which rainfall reaches the soil, increasing the chance that it will soak into the soil rather than running off. Secondly, the rougher the surface of the soil, the slower that water will move across it. Surface roughness is increased by leaf litter, fallen branches and logs and the butts of plants. Finally, trees and shrubs increase biological activity, including those animals that burrow in the soil, such as spiders, bees, lizards, snakes, mammals and beetles and other invertebrates. These pores in the soil increase water infiltration rates. Many of these animals also incorporate organic material into the soil, which further increases the soil's ability to soak up and retain water.

There is also strong evidence from different areas of Australia that large areas of trees have a direct role in local rainfall. Blocks of vegetation transpire large volumes of water into the atmosphere and this atmospheric moisture can attract other moisture which can build up into rainfall at a regional and local scale. Retaining or planting large areas of vegetation can actually attract rain to your farm!

Tree regeneration after drought
Trees require five things to be able to regenerate:

1. Ripe seed on the tree,
2. Exposed soil for the seed to fall on,
3. Minimal competition from weeds,
4. Protection from browsing, and
5. Moist conditions from seed fall to production of true leaves.

When trees are stressed by drought, they often produce heavy seed crops. I suppose it is a last ditch effort to get their genes out there in case they die. On farms, most paddocks are heavily grazed, exposing lots of bare ground, providing an ideal seed bed

for the seed to fall onto. Pasture grasses are one of the biggest competitors for young seedlings. During drought, these aggressive grasses are often grazed out, leaving less competition for seedlings and giving them enough space to grow to a point where they can compete with the grass. At some point during a drought, when the pastures have been grazed bare, livestock are removed; either sold off or moved to sacrifice paddocks. These conditions create ideal opportunities for small-seeded trees such as eucalypts to regenerate, once the rain returns. The short window between tree seed germination and pasture recovery, can allow trees to germinate and grow ahead of the competing grass. Previous studies have shown that infrequent mass regeneration events often occur following droughts.

You can make the most of drought-induced regeneration to get free or cheap trees. Trees that naturally regenerate are self-selected to be tough and are more likely to put down deep roots and survive well. Keep an eye out around existing trees to see if regeneration is occurring. You might be able to erect temporary fencing to enable the trees to grow to a size where they can withstand grazing. You could invest in a few solid tree guards to protect the young trees and then re-use them over and over again. You can make three guards out of a 6 x 2.4m sheet of concrete reinforcing mesh. Cut the sheet into 2m lengths, roll up and tie the edges together. This will give you 3 guards, each 2m tall with a diameter of 64cm. They can be held in place with tall star pickets. Once the seedlings reach the top of the guard, the guard can be moved on to another regenerating seedling.

Monitor your trees to see which ones have lots of gumnuts. As the gumnuts change colour from green to brown the seed is ripe and likely to fall onto the ground.

While we wait for the rain to return, now is a good time to plan to reduce the impacts of future droughts. Droughts are a natural part of Australia's climate and as the climate changes in response to increasing greenhouse gases, they will increase in frequency and severity. The key to reducing drought impact is to increase landscape resilience. The best tools available to do this are grazing management, revegetation and habitat management. Look to Landcare for help with the first and to Armidale Tree Group for the latter.

Education update:

ACPS students from Stage 3 came to visit us in the last week of term 3 to learn about the Armidale Tree Group and what we do. They visited the Mike O'Keeffe Woodland Centre and walked in the Woodland, toured the nursery to learn how we propagate trees and they got to plant around 100 trees in the woodland. A great end of term studying to be "environmental warriors."

Armidale Tree Group Community Partnership Account

Join the Regional Australia Bank Community Partnership program as this program provides cash to enhance our funds to spend on community activities. The Armidale Tree Group was nominated by RAB members as their preferred community organisation and we received $3,185.01. Thanks for all those who nominated us and thanks to RAB for your great community support.
How to join: Open an RAB account and simply call 132 067, visit any branch, log onto www.communitymutual.com.au or pick up a brochure at the ATG nursery.


In conjunction with 30th anniversay celebrations of the
Armidale Aboriginal Cultural Centre
& Keeping Place
BLACK
GULLY
FESTIVAL 2018
art • environment
music • community
LIVE LOCAL MUSIC
(THREE STAGES)
MARKET STALLS
ART ACTIVITIES
COMMUNITY
STALLS
COMMUNITY
GARDEN TOURS
SLOW FASHION &
CLOTHES SWAP
+more
Presented by Sustainable Living Armidale,
NERAM, Armidale Tree Group and
Armidale Regional Council
BRING YOUR OWN WATER BOTTLE
17th
NOV.
10AM-10PM
(BEHIND NERAM)
Proudly
Sponsored by
good wood
PROJECTS
LEGALMINDS
thinking together
PHOENIX
FOUNDRY
BLACK DOT MUSIC

Membership Application/Renewal

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Address: _____

_____

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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: _____

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

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