



Landcare
Junee Area

Junee Area Landcare

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JAL meeting dates are published in the monthly Murrumbidgee Landcare e-news.



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JAL Newsletter

Autumn 2015

Skye Bellamy for Junee Area Landcare

Hello Landcarers!

It has been a long summer. Not much extreme heat, those 45 degree days with gail force winds we can do without! However, it has been hot and dry for months and months. Great for kids swimming and playing, not great for growing plants! I have found it difficult to grow trees and shrubs for a couple of years. It seems we have not recorded significant rain since March 2012; we had a dry frosty Winter; and hardly any rain during Spring 2014. Most revegetation projects during this time had very low success rates. The trees and shrubs that have survived are thriving. These are the varieties I should have been foundation planting with! Lesson for Skye!

The Cross Property Planning project continues to invigorate the Landcare ethos within the Junee area. This project is the only project on offer from any natural resource management organisation to address agricultural NRM on a landscape and community inclusive basis. It has been a rewarding project to be involved in.

We experienced a dry spring and early summer, with little to minimal rainfall. This assisted with an all but clear harvest, with some yields being higher than any over the previous decade, and others, especially the frost prone areas, a wipe out. The highs and lows of farming!

We are now in full swing preparing for sowing. With a forecast of above average rainfall during the next three months, this would be a welcomed relief, and an excellent start to the cropping season. There will be a Landcare meeting in Junee after the school holidays- keep posted for date and location. I look forward to catching up then, and discussing the Junee Area Landcare's direction for the remainder of 2015.

Skye Bellamy



Cootamundra Landcare workshop Stockinbingal Bowling Club

22nd April 2015

(09.00-11.00am)

Bland Creek Walk (Alan East)

Encouraging beneficial Insects in the Landscape (Phil Bowden)

Weed Issues in the Area and Use of Biological Controls (Graeme Worboys)

Funding Opportunities for projects (Jonathan Berryman)

(11.00-12.00pm)

Field Walk to look at tree plantings done at "Flagstaff" Stockinbingal

(Phil & Liz Lyne)

Morning tea and BBQ lunch provided



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This newsletter has been produced by Murrumbidgee Landcare as part of its 'Cross-property planning to balance production and biodiversity' projects, assisted with funding from the Australian Government's Clean Energy Future Biodiversity Fund and the NSW Government's Environmental Trust.

Cross Property Planning Project update

By Jacinta Christie, Project Co-ordinator

The Murrumbidgee Landcare Inc. Cross-property Planning Project involves 65 landholders across and Illabo/Bethungra and Junee, Kyeamba Valley and Tarcutta/Humula of which 35 are in the Illabo/Bethungra and Junee area.

The Project runs over a 6 year period and provides funding for landholders interested in natural resource management to either plant new native tree or shrub wildlife corridors/shelter belts or to enhance and protect the existing native vegetation on their properties.



The Project also supports landholders through education and training opportunities and social occasions such as our highly successful Christmas Gathering at the Illabo Pub last December.

Throughout the last six months the Project has focussed on invasive species management, both plant and animal, with landholders funded for noxious weed control around their remnant woodlands and through subsidised fox baits to reduce fox numbers in the area. A workshop on managing rabbits was also held in late March as part of this campaign.

Other on-ground works that have been undertaken by landholders in the project include:

- Fencing out and planting along creek lines and eroded gullies,
- Planting tree lines/shelter belts, erosion control,
- Adding trees to existing tree lines,
- Planting scattered paddock trees,
- Fencing off and enhancing existing remnant vegetation patches,
- Fencing and planting around dams,
- Revegetating with understorey in existing remnant vegetation

For further information about this project please contact Jacinta Christie on 0431 953 778 or jchristie@mli.org.au

Right: Planting tree lines on Ashley and Caroline Hermes property "Deakin" near Bethungra .



Fox Control – Legally it's time to get on board

Jacinta Christie, Murrumbidgee Landcare Inc

The European red fox is now a declared pest species in NSW. This means there is now a legal requirement for public land managers and private landholders to control foxes on their land. Foxes are endemic across the Riverina LLS and assuming 4 foxes per square kilometre in a 5km radius of any farmhouse there could be up to 312 foxes.

Senior Biosecurity Officer Toby O'Brien says the best way to comply with the new pest control order is to participate in a group control program. "Participation in a group program is also the most cost effective way to reduce fox numbers."

A Control group is where landholders get together and undertake fox control at the same time to reduce the population on a larger landscape scale, the more participants the more effective the scale.

These programs aim to ensure a maximum impact on fox populations and reduce the chance of re-invasion or immigration from other areas. 1080 baiting is the most effective way to reduce fox numbers. To receive 1080 fox baits landholders must have a valid chemical users card (AQF3) or undertaken a 1080/Pindone training course conducted by the LLS or LHPA within the last 5 years.

Fox baiting is most effective when Autumn and Spring baiting programs are carried out across the area. If you are interested in participating in a group baiting program please contact the Riverina LLS.

Climate Resilient Restoration of Box Gum Woodlands

Box Gum Woodlands were once widespread across south-eastern Australia, today they occupy less than 10% of their original extent and are listed as an endangered plant community.

A collaborative research project led by Landcare NSW looked at novel ways to improve and restore resilience of these important ecological areas in a drying climate.

Soil conditions in different woodland degradation states

The physical and biological properties of soil in Box Gum Woodlands across central NSW were examined at sites that reflected a range of different levels of degradation and compared with high quality reference sites. These degraded ground-layer states included those known from earlier work to be depleted in soil carbon and nitrogen, to sates dominated by exotic annuals and known to be enriched in nutrients.

Depleted ground-layer states dominated by grasses such as Spear Grass (*Austrostipa scabra*), short Wallaby grasses (*Rytidosperma* spp.) and Wire grasses (*Aristida* spp.) had lower ground cover, organic carbon, clay content, micro-invertebrate abundance and microbial activity and had slower water infiltration and greater topsoil compaction (indicating poor aeration) than sites in reference condition.

Overall this led to a >25% reduction in water holding capacity of the soil. Enriched sites has higher levels of carbon than sites in reference condition, but compaction, clay content, water holding capacity, and biological activity were similar to sites in reference condition.



Cont:**Interventions to increase soil condition and water holding capacity**

To improve the soil condition (soil carbon, soil biological activity and soil moisture holding capacity) in depleted sites we trialled five treatments at three sites, these were:

- aerating soil using a drum rolling spike aerator (to reduce compaction)
- adding biochar using the aerator (to introduce carbon and microhabitat)
- adding mulch (to protect soil surfaces and introduce carbon)
- sowing native Red Grass *Bothriochloa macra* (to increase carbon)
- adding phosphorus (addition of 'super' - phosphate is a common practice on these soils)

Mulch and Biochar

After two years of treatment we observed lower compaction, softer soil surfaces (at one site), higher infiltration, occasionally higher soil moisture, and higher soil carbon and higher pH. Native forb cover and superior establishment of the large-seeded forb, Bulbine Lily (*Bulbine bulbosa*) after hand sowing were also observed.

The addition of mulch also improved the rate and diversity of metabolic activity by the microbial community and increased the abundance of collembola (springtails). Mulch also inhibited germination of small seeded forbs. Future monitoring will determine whether the benefits reflect ongoing improvement towards reference condition.

While these effects are a substantial improvement over the degraded starting point, comparison with reference sites suggests the effect achieved so far are, on average, around 25% of that required for restoration to reference conditions. Further monitoring may determine if the benefits continue to accrue as biochar and mulch become better incorporated in the soil.

Phosphorus

Phosphorus addition had predominantly negative effects from a woodland restoration perspective. Total biomass marginally increased but this was mostly due to increases in exotic annuals, resulting in lower native grass cover. Measures of microbiological rates were also lower, although abundance of mites was higher.

Native Red Grass and aeration

There are few significant effects for Red Grass plots or for aeration at this stage. As Red Grass plants were still small and not fully established, effects may still become evident over longer time frames.

This project is part of the Communities in Landscapes project led by Landcare NSW and funded under the Australian Government program Caring for Our Country. Partners include: CSIRO; Landcare NSW; Grassy Box Gum Woodlands Conservation Management Network; NSW Office of Environment and Heritage; Industry & Investment; Capital Region Greening Australia's Florabank; University of Sydney; STIPA Native Grasses Association Inc; NSW Department of Primary Industries

For more information go to: www.csiro.gov.au/landwater



Managing native vegetation

Dr Ted Wolfe

During the past 12 months, there have been a number of developments in relation to the management of native vegetation. The NSW Government has sought to reform the controls on native vegetation management to strike a balance between sustainable agriculture and protecting the environment. The first step has been a streamlining of existing clearing controls, by:

- Introducing new codes of practice in relation to vegetation clearing;
- Developing a set of self-assessable codes of practice for certain low-risk clearing and thinning activities (Code 1 – clearing of paddock trees in a cultivation area, Code 2 – thinning of native vegetation and Code 3 – clearing of invasive native species); and
- Minimising red tape.

The Office of Environment and Heritage (OEH), in partnership with Local Land Services, manages the implementation of all Acts, regulations, rules and guidelines relating to native vegetation, guidelines that still require careful study. There are some distinctions between the guidelines and protocols that property owners must follow in coastal, agricultural and semi-arid situations. The guidelines may also be fine-tuned as a result of a recent Biodiversity Review undertaken by the NSW Government. An independent panel reported to the Minister of Environment late in 2014, the report was placed on public display, and views were sought from a number of stakeholders, agencies and interested persons.

The government announced on April 2nd it would adopt all the recommendations of the biodiversity review panel which recommended establishment of a new Biodiversity Conservation Act. This act will replace the Native Vegetation Act 2003, parts of the National Parks and Wildlife Act 1974, The Nature Conservation Trust Act 2001 and the Threatened Species Act 1995.

The best place for any landholder to start is the OEH website <http://www.environment.nsw.gov.au/index.htm>. This site has a set of useful factsheets, a landholder guide and other resources. Adequate information and useful tools are available to guide any landholder through the process of the self-assessment. Landholder and Landcare groups are encouraged to contact Riverina Local Land Service officers to discuss the processes and protocols and for specific advice to individuals on proposed native vegetation management activities.

In the Riverina, Murrumbidgee Landcare staff will seek information on the guidelines and they will join with Local Land Service officers to support to landholders working together in Landcare groups and projects in the Tumut, Junee, Kyeamba and Tarcutta districts. Once a Regional Landcare Facilitator is appointed in the Riverina, other groups will be kept informed.

Only a small proportion of farmland in the Riverina is devoted to natural biodiversity. Most scientists and landholders agree with the need to conserve and/or rehabilitate remnant areas of native vegetation, to increase strategically areas of bushland, and to develop and protect areas for native vegetation and wildlife. If some of the least productive areas in the landscape are converted from production to conservation/amenity uses, modest biodiversity targets could be achieved without necessarily reducing overall agricultural production.

With paddock trees in serious decline, environmental scientists recommend the retention and protection of paddock eucalypts and cypress pine at least until greater areas of shade and shelter are in place. Livestock and legume pastures are essential components of the cropping zone in the Riverina and farmers need to weigh carefully the minor inconvenience of sowing around isolated trees against the loss of trees for shade and shelter. Animal welfare activists are keeping a careful watch on this issue – let's not under-estimate the potential for strife if consumers expectations fail to be met.

Case study: Planning paves the way

Snapshot

Farmers: Peter, Sandra, Anthony and Rhonda Heffernan

Location: Junee, New South Wales

Property size: 1376 ha

Rainfall: 570mm

Enterprises: Cropping and self replacing merinos, 1st cross and 2nd cross lambs

The Heffernan family have been re-vegetating and working to improve the sustainability of their Wantiool farms for over 40 years. Peter, Sandra, Anthony and Rhonda are continuing the work of father Cletus, who first started planting trees in the 1970's .

Originally part of Wantabadgery Station, the Heffernan properties had little remnant native vegetation, as a result of being cleared by Chinese labour in the 1800's. Saline salt scalds were also appearing on lower ground sites in the 1980's and were the catalyst to the farming family becoming involved in Landcare. Peter says they were founding members of the Wantiool Landcare group when it commenced in the 1990's and through this group they had the opportunity to develop a whole farm plan with assistance of NSW Soil Conservation staff. This plan included map overlays on aerial photos and mapped out new tree plantings and works to combat salinity. It also marked out new fence lines to follow ridge lines and creek lines and incorporated a laneway system for easy stock movement.

"These maps were very valuable and over time with the help of funding from various Landcare projects, we've been able to implement most of the works, including planting tree lines for recharge to combat salinity and provide shelter belts and fencing out salinity scalds," Peter explained. "We planted these saline areas with tolerant species such as pincinella and tall wheat grass together with trees. "Over time these salt scalds have repaired, and with stock excluded phalaris has been able to establish where previously it wouldn't grow," he said.

The Heffernan's have learnt many lessons along the way since they started planting trees, including . Planting local indigenous tree species and using individual tree guards. "We found that best survivors through the drought and the 1996 bushfire were the local tree species. Species from other regions such as some WA redgums and Mallee species grew well initially but failed to make it through the extended drought and also didn't survive the bushfire. Using Individual plastic tree guards are also vital to seedling survival and to prevent damage from hares and rabbits."

With much of the farm plan now implemented Peter and Anthony's focus has now turned to environmental works on an additional adjoining property, which they purchased in 2006. Through the Cross Property Planning (CPP) project they have been able extend their farm plan and implement changes to fence lines, and establish new tree plantings to improve the connectivity across the landscape and provide habitat for native bird species, and other native fauna. "This flexible approach of the CPP project has been great and has allowed us to design our plantings to suit our needs," Peter said.

Peter and Anthony are continuing to implement their whole farm plan and last year planted over 600 trees. Further strategic planting of individual trees to link with paddock trees are also planned.

Right: Anthony and Peter Heffernan, inspect trees planted as part of the CPP project.



Preparing and planting a revegetation site: Tips for success

Greening Australia

Good preparation and management can help minimise seedling losses and encourage healthy plant growth. Deep ripping soil helps root development, by improving aeration and water infiltration, and allowing deeper penetration and faster plant root growth. Rip planting lines to a depth of 40-60 cm or more if possible.

Double ripping, with rips 50-100 cm apart is very beneficial as it shatters the soil. On slopes, rip along contours to reduce erosion risk. On flatter sites, cross ripping on a grid layout will guard against roots growing in one direction along a single rip line (which can result in trees blowing over).

Ideally ripping should be done several months before planting, when the soil is fairly dry, to optimise the shattering effect. If the rip-line is too loose or full of air pockets close to planting time, this can be remedied by driving a tractor tyre along it. Trees should be planted between the rips. Where a single rip line is used, trees should be planted on the shoulder of the rip-line, as trees planted in the bottom of the rip-line can get waterlogged in winter.

Fencing

Fencing should be used to protect seedlings from stock for at least the first three years. Fencing also preserves the leaf litter at ground level, and protects low leafy shoots. All fencing should be completed before planting.

Controlling weeds

Poor weed control accounts for most planting failures, due to competition for light, moisture and nutrients. Eliminate weeds early before they use up stored water – ideally, keep the planting area weed free for a year or more prior to planting to ensure the best results. If using chemical weed control, apply a knockdown herbicide well before planting, and then apply residual herbicides just before planting (in conjunction with a knockdown herbicide, if weeds have emerged since the first spray). Other techniques for weed control include mounding, cultivation, grazing and weed mats.

Selecting and planting

Where possible, use seedlings from locally collected seed- locally indigenous species are always recommended, as they are most suited to the local conditions and climate. Recommended spacing between seedlings varies depending on the location, but generally trees within a row and between the rows themselves can be spaced 3-5 m apart. Smaller trees and shrubs can be spaced 2-3 m apart.

Plant in autumn or winter to take advantage of the winter rains, and allow seedlings to establish slowly over the cooler months, enabling quick growth as soil temperatures warm up. Seedlings should be given a good soaking in their pots the day before planting. In most situations, fertiliser is not necessary for native species.

To plant tubestock, dig a hole slightly larger than the tubestock, then remove the seedling from the tube. Try to minimise root disturbance, however if a seedling is root-bound, the roots may need to be teased out. Place the seedling in the hole, so that the base of the seedling is just below the surface. Place the soil back around the hole, and firm down to collapse any air pockets and give good root to soil contact.



Watering

If possible time your tree planting to coincide with rainfall to avoid the need to water seedlings in. If it is particularly dry, one litre of water (or more) poured slowly around each planted seedling will help overcome transplanting shock and remove air pockets. In most cases, no further watering should be required. However, check the seedlings over the months following planting to ensure they are surviving. If the summer is especially hot and dry, seedlings may benefit from watering; a litre per seedling should be sufficient, and watering should be limited to once a month at most, so as not to weaken the seedlings.

Guarding

Placing tree guards around your seedlings can help prevent grazing by rabbits, hares and kangaroos, helps protect the seedlings from winds and maintains a warm and moist environment around the seedlings. Milk cartons held with bamboo stakes are the most economical guards but plastic sleeve, held in by three hard wood stakes also provide good protection for seedlings.

The information in this article has been provided by Greening Australia. For more detailed go to: www.greeningaustralia.org.au

Allelopathy for weed control

Phil Bowden, MLI

Some plants have a biochemical effect on the germination and growth of other plant species. This effect, known as allelopathy, may prevent the germination of seeds of the plant or influence the growth of some competing plants while ever the original plant is healthy. This is how some species maintain resources such as nutrients and moisture for their use and determines the species mix and abundance in plant communities.

Around 30 years ago several eucalypt species were found to have an allelopathic effect on the growth of Silverleaf nightshade (SLN). These species prevented the growth of the weed and when planted in weed infested areas would actively discourage weed growth, while allowing growth of some productive pasture grasses.

Having gained some control over SLN on large sections of their property one Eurongilly farming family are now turning to the allelopathic effect of eucalypts as a means of controlling the weed in problem areas- namely rocky outcrops where spraying and pasture establishment are not feasible.

The Bunn family from Melbourne have been dealing with SLN on their property, Coreena since the 1960's. The 2400 ha property comprises undulating arable country with well drained red loam soils and alluvial creek flats. SLN was introduced from the roadside during a drought when infested sheep from outside the area were brought through the stock route. It subsequently spread across the farm by cultivation and livestock during the era before minimum tillage when cultivation for weed control was practiced. It now occurs on all soil types from shaly hill paddocks to alluvial creek flats.

Chemical control methods have been used for control of SLN with Starane, glyphosate and 2,4-D ester being the most commonly used. Dual action control methods involving sprays in summer to prevent seed set and autumn sprays to run down the root reserves, followed by competitive crops and pastures are used to get control of this weed. This strategy has been successful on the majority of the cropping areas and smaller hotspots are spot sprayed to keep the numbers down. Fescue pasture and TT canola have given good competition and can smother SLN in spring leaving less vigorous plants to deal with in summer and autumn.

SLN is still a problem on the rocky hilltops, so plantings of eucalypt species to give allelopathic control of SLN were established in 2014. Previously an expensive helicopter was used for control into these areas during several wet summers when the weed has flourished, but this is not ideal as the chemicals affect the established trees. The tree plantings have been funded through the Cross Property Planning project run by Murrumbidgee Landcare. They will have a dual purpose of linking corridors of trees across the property for biodiversity benefits as well as providing biological weed control.