

Drought tolerant pastures on the Gippsland Plains

By *Samantha Monks*
and *Lisa Warn*



Yarram Yarram Landcare Network (YYLN) is working with 16 producers from Woodside to Stradbroke who have established trials to demonstrate the use of drought-tolerant perennial pasture species and better grazing management on their properties. Participants have each sown three paddocks (10 hectares) of pastures over the three years of the project.

The Caring for our Country project is being delivered by YYLN with the support of the University of Melbourne's Mackinnon Project. EverGraze principles are being used to establish trials of appropriate perennial pasture species and management practices.

The properties are located around Woodside, Darriman, Seaspray and Stradbroke in south-east Gippsland. Participants are all active members of the Woodside or Merriman Creek Landcare Groups. The soil types on the farms are mainly light sandy clay loams, which have low water holding capacities and are prone to wind erosion.

Producers in the area have been hit hard by the prolonged drought conditions. Confidence, incomes, pastures and soils have all suffered. The project has been important for boosting morale and increasing peer support amongst the participants.

Average annual rainfall is 600 millimetres, but the district has experienced drought conditions for the past three to four years. Despite the dry conditions in 2009 (the first year of the project), 15 paddocks were sown. The majority had good establishment results and all of the pastures survived their first summer.



A drought-tolerant pastures field day at Charles Meckiff's property at Darriman.

All of the sowings in the second year (2010) were excellent and benefited from the summer and early autumn rains in 2011. Year three sowings are currently underway. A range of perennial species has been sown including lucerne, cocksfoot, phalaris, fescue and kikuyu.

The project has equipped the participants with knowledge of suitable species and varieties for their area, better sowing techniques and an understanding of soil testing and fertiliser requirements. The participants have improved their skills in species identification, establishment and assessment.

The project is aiming to have at least 500 hectares of perennial pastures established by 2012. Participating farmers have worked hard, often in difficult conditions, to get the pastures established under the strict project guidelines. The drought-tolerant pastures group was awarded the Special Network Award at the recent YYLN 2011 Landcare Awards.

For further information please contact Samantha Monks on 0419 371497 or by email at samantham@wgcm.vic.gov.au



The drought-tolerant pastures group with their Special Network Award at the 2011 Yarram Yarram Landcare Awards.



Silos at Catawba Farm with the Appalachian Mountains in the background.



Bo (William) Wines, a farmer from Catawba Valley, Virginia, was one of more than 70 volunteers at a workday organised by Catawba Landcare at Catawba Farm.

Landcare American

Virginia is the heartland of the US Landcare initiative. Virginia, which covers roughly half of Victoria's area and is home to 7.7 million people, currently has two Landcare groups.

While many of the issues that confront US landholders are different, the process where groups of landholders identify issues of common concern (and these issues provide the impetus for action), are much the same as in Australia. Virginia's Landcare groups formed from local communities seeking solutions to specific environmental, economic and land management problems.

Landcare Virginia-style doesn't have a strong focus on revegetation. Virginia has 63 per cent forest cover and a forgiving climate of more than 100 centimetres average annual rainfall. The emphasis is on triple bottom-line outcomes – making sure environmental and social factors are considered alongside financial performance. Although agriculture contributes US\$55 billion each year to Virginia's economy, 53 percent of the state's 60,000 farmers operate at a net loss (a 2002 figure). While farming costs have risen with inflation, agricultural commodity prices and farmer incomes have remained the same.

The Grayson Landcare Group was formed in 2005 in Grayson County, southwest Virginia. Grayson County has a long farming tradition. The Grayson Landcare Group promotes the adoption of sustainable farm and land management practices. This includes rotational grazing to improve productivity and installing off stream watering systems to help protect waterways.

Landcare group markets its own natural foods

Members of the Grayson Landcare Group established Grayson Natural Foods in an endeavour to increase landowner incomes and return more money to the local community. Grayson Natural Foods is a co-operative, grass-fed beef cattle processing and marketing enterprise that produces and markets value-added beef and aims to enhance the viability of local farms and protect them from the pressures for subdivision.



The New River, Virginia – a US heritage river.

style

By John Robinson

The Angus cattle that produce Grayson Natural Foods beef are raised according to an agreed set of protocols, including no antibiotics, hormones, or steroids. To eliminate middlemen Grayson Natural Foods sells its beef hamburgers and steaks direct to consumers, including up-market restaurants in Washington DC (six hours away) and universities. All income, other than operating costs, is returned to the participating farmers.

According to Jerry Moles, Grayson Landcare Group Facilitator, consumers will pay more for quality, safety and good stewardship.

“Demand for Grayson Natural beef exceeds supply, so the Landcare group is looking for more local farmers who are willing to raise grass-fed cattle according to our strict protocols. This illustrates that our shared belief in the triple bottom-line and a willingness to work together can make a difference.”

The group has plans to establish a meat processing facility to further benefit the local economy. Momentum is building in the local foods movement across the US. In mid-2010 there were 6132 farmers markets operating across the country –

an increase of 16 per cent from 2009. This reflects the growing popularity of locally grown, farm fresh produce.

Catawba Farm a Landcare incubator

Catawba Landcare Group was established in 2006 to encourage improved environmental stewardship among landholders in the Catawba Valley. The valley is at the headwaters of the Catawba Creek, a tributary of the Roanoke River and the Upper James River, which feeds into Chesapeake Bay. Catawba Landcare has instituted a streamcare program to restore and protect the valley's streams and rivers, as these waterways ultimately reach millions of people downstream.

The 150-hectare Catawba Farm is the Catawba Valley's major landmark. It has a long history as a resort, tuberculosis sanatorium and dairy. Virginia Tech University has owned the farm since the 1980s. In the mid-1990s it unsuccessfully attempted to sell the property for a prison, golf course and housing. The local community wanted to see the site put to a productive use and were very concerned at its potential sale.

Catawba Landcare helped develop a vision for Catawba Farm as a Landcare incubator, with the aim of it becoming a productive,

sustainable and self-supporting model farm.

The group's vision for Catawba Farm is gradually being realised. The Catawba Sustainability Centre was established at the farm in 2009, with funding from Virginia Tech University and a range of government agencies. The sustainability centre has been set up as a showcase for students and the local community. It is running projects on innovative land management practices that create better land stewardship and projects that support new and expanding agricultural and natural resource businesses.

Catawba Landcare has also played a role in the establishment of the Catawba Valley Farmers Market.

While Landcare in the US is still at a formative stage, the Catawba Landcare Group and the Grayson Landcare Group are at the forefront of efforts to promote sustainable practices among their communities.

John Robinson visited Virginia and North Carolina in 2008 on a Fellowship from Australian Landcare International to get a sense of how Landcare is being applied in the US and to see how Australian Landcarers can best support the emerging US Landcare initiative.

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Innovative revegetation

Two large-scale revegetation projects that were part of the Bass Coast Landcare Network's Land Stewardship project in 2009 have yielded some interesting findings on how steep slopes can be revegetated more effectively and efficiently.



Lyn Herbert and Dave Bateman with a 14-month-old Blue Gum at Moyarra – the result of a trial to revegetate steep slopes in the south Gippsland hills more efficiently and effectively.

Steep slope direct seeding in the South Gippsland hills is generally undertaken using heavy earthmoving equipment. This exposes large areas of soil on very steep gradients of land. The costs are high; there are soil erosion risks and safety concerns for the dozer drivers.

Steep hillside sites (five hectares each) on Bruce and Lyn Herbert's property at Moyarra and Brian and Cheryl Enbom's property at Jumbunna were involved in the project. Both families have also participated in the DSE EcoTender program.

Three methods were used on each site. They included planting of 5000 tubestock, sowing four kilograms of indigenous seed onto bare ground (no till) and direct seeding one kilogram of pre-germinated seed.

Standard Landcare practice would have involved planting 10,000 tubestock and

spot spraying the hills. A combination of direct seeding and tubestock is more cost effective than planting tubestock alone. Labour costs are also reduced as it took only half a day to direct seed each hill using three people. Planting tubestock would have taken five days with three people.

Site and seed preparation

Sites were sprayed six weeks prior to planting and seeded in early June 2009. Strips a metre wide were sprayed across the contours on the hills with a 1.5-metre gap in between the strips. The hills looked like zebra stripes from a distance.

Seed mixes were made up using native species appropriate for the sites. Of the five kilograms of seed for each site, 10 per cent was overstorey eucalypts, 50 per cent was middle-storey trees and shrubs and 40 per cent was seed from understorey species.

The steep hills looked striped after they had been sprayed and seeded along the contours.



Steep slope direct seeding in the South Gippsland hills is generally undertaken using heavy earthmoving equipment. This exposes large areas of soil on very steep gradients of land.



for steep slopes

By Dave Bateman



A good variety of species have germinated across the site.

One kilogram of seed went through a process of pre-germination. The remaining four kilograms of seed was mixed with 25 kilograms of sawdust as a bulking material prior to sowing. All the acacia seeds were heat treated, which involved soaking them in boiling water for 20 minutes prior to sowing. This process is called scarification and enhances the germination of hard-coated seeds like acacias.

The pre-germinated seed was seeded by one person moving across the sprayed slope and chipping out a shallow divot of soil at spacings of 1.5 metres (removing the weed seed from that particular patch). A second person then placed a small handful of seed in the small hole created.

The other section had the seed broadcast over the sprayed dead grass. Some tubestock planting occurred amongst these areas.

Positive results despite extreme conditions

Weather conditions following the seeding were extreme. For the first seven weeks after sowing, conditions were mild and damp, ideal for germinating seed. At the end of October, conditions began to warm up, with no rainfall for a four-week

period well into November and high temperatures.

The pre-germinated seed at the Jumbunna property, facing north, struggled during this warm period. However, the site at the Herbert property faced the south-east and the pre-germinated seed was able to withstand the prevailing conditions.

The results from the Moyarra property are very positive. Grass growth was exceptional following a very wet spring. In the pre-germinated seed site, 14 species are strongly represented. A number of the Blue Gums are over three metres in height, with many other eucalypts easily standing two metres tall.

In the areas where seed was broadcast a good variety has germinated and is emerging.

One aspect that could be improved with the pre-germinated seed site would be to keep the eucalypt seed separate from the rest of the species. Controlling where the eucalypt seed was placed would allow for a more satisfactory spread of these plants and also improve the chances of independent understorey plants establishing.

For further information contact Geoff Trease from the South Gippsland Seed Bank on 0400 746 828 or Dave Bateman from the Bass Coast Landcare Network on 0488 399 151.

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Students from Balnarring Primary School have improved their school grounds and recorded a huge increase in birdlife. In 1996 29 different bird species were recorded at the school. In 2008 this had increased to 84 species.

Schools get serious about sustainability

By Jane Liefman



Schools use the School Environment Tracking system to input data and track their progress as they implement their school's environmental action plan.



ResourceSmart AuSSI (Australian Sustainable Schools Initiative) Vic is a statewide environmental sustainability framework for primary and secondary schools that provides students with real-life learning experiences and leads to improved management of the school's facilities and resources. The program is co-ordinated by Sustainability Victoria in partnership with the Department of Education and Early Childhood Development, other environment organisations, local government and environmental education service providers.

There are five modules in the framework: biodiversity, action planning, energy, waste and water. Schools use the School Environment Tracking system to input data and track their progress as they implement their school's environmental action plan.

Earlier this year Aitken College, Balnarring Primary School and Eltham North Primary School were announced as the first schools to receive five star sustainability certification under this system. At the end of 2010, 27 per cent of all Victorian schools were involved in ResourceSmart AuSSI Vic.

Balnarring Primary School has a student-led environment team called the BEAT kids

(Balnarring Environmental Action Team) who work across all four ResourceSmart categories of water, waste, energy and biodiversity.

The school addresses sustainability using a whole school approach. Sustainability is taught inside the classroom and outside too when their wetlands become an open classroom. The school has a garden, a barn for chickens and goats, a worm farm and is involved in composting.

Students and staff participate in a weekly sustainable classroom challenge that focuses on energy and waste reduction tips. The school has installed a five-kilowatt solar system and has introduced many water reducing initiatives.

The school has enviroflush urinals, tanks to supply water for toilet flushing and evaporative coolers, dual flush toilets, security fittings on outside taps, a safety valve to detect surges in water use and a no watering policy for the gardens and oval. Any overflow water is piped to the Korra Bun-Yun wetland.

For further information on ResourceSmart AuSSI go to www.resourcesmart.vic.gov.au/for_educators_2439.html