



*Supporting landholders
with native vegetation*



Fire and Ice in Rocky Hall

by Ali Rodway

Lowland Grassy Woodland of the upper Towamba Valley is both a significant ecological community and a significant Aboriginal cultural landscape. Previous glacial periods and the extensive, long-term use of fire by Aboriginal people have shaped the vegetation that grows here today.

At the recent CMN field day held in the rainshadow valley around New Buildings and Rocky Hall, ecologist, Josh Dorrough explained why this landscape shares biological features with the basalt country of the Monaro Tablelands which rises to the west.

A combination of proximity to the Monaro (enabling seed dispersal by wind and animals) and the similar dry cold climate produced by the intense rainshadow in the upper Towamba Valley are likely contributing factors. Parts of the Bega Valley that are similarly low rainfall, rainshadow areas, like around Candelo, also have Snow Gums and other 'Tableland' species.

During the last glacial period, temperatures were not only much lower, but soil moisture availability was low and carbon dioxide was around half the level it is today. These conditions favour grasslands, particularly grasses which are efficient at utilising CO₂ such as Kangaroo grass. So this area would have been open and grassy as a result of climatic conditions.

As the climate warmed, conditions became favourable for trees to invade. But something else was going on here which meant this didn't happen, and that was the use of fire by Aboriginal people.

John Blay, Bundian Way Project Officer for Eden Land Council, explained that the Towamba River Valley is one of the old routes used by Aboriginal people travelling between the coast and the mountains. Like the Bundian Way, it



John Blay describing the pathways through this area

Species like Snow Gums, Anchor Plant and Scaly Buttons are characteristic grassy ecosystem species up on the Tablelands and also grow in Upper Towamba, but are rare elsewhere in the Far South Coast region.

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FROG NIGHTS Sat 14 Dec 2013 or Fri 7 Feb 2014 Panboola Wetlands

Local ecologist Steve Sass will lead two frog field nights at Panboola Wetlands for people wanting to learn more about local frog species including: monitoring, health and habitat.

The nights will start with a presentation and supper before a field walk to identify frogs at Panboola.

Places are limited so book early by contacting Ali Rodway

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Coordinator's column

I love talking about the weather, especially when it's unusual. The rains we were waiting for certainly came, with 186mm falling in November. This is around three times the average rainfall for November over the past 19 years!

People who wouldn't usually plant trees so close to summer are still doing so. If there ever was a time when you could get away with an early summer planting without too many losses then this is probably it. The main risks are that we get a run of scorching, hot days in the new year, and with our free

draining soils, some watering may be needed to keep plants alive. Plants that have been hardened off will also have a better chance of survival.

Weeds are also loving the higher soil moisture and warmth and will need extra attention this season, especially to protect new plantings.

The Rocky Hall Field Day was a highlight this month. The open, grassy valley, circling misty hills and views to the Monaro basalt country are remarkable. The Lowland Grassy Woodlands we have here in the South East corner of NSW don't occur anywhere else. Thanks to some of the great presenters and farmers we had at the field day, we are working out how to look after the 20% still left.

Now for a word about frogs. People can't get enough of them! Three field nights in 2011 had long waiting lists, so we are running two more, one in December and another in February next year. Contact me soon if you'd like to attend one. Hope to see you there. Ali



Bindweed (*Convolvulus angustissimus*) in
Kangaroo grass at Rocky Hall

What is the CMN?

The Far South Coast Conservation Management Network (CMN) supports private landholders in the Bega Valley Shire to recover and manage native vegetation on their properties.

The CMN aims to inspire and motivate landholders, increase knowledge about native vegetation management and develop the skills to do this work. The coordinator produces quarterly seasonal newsletters, organises workshops and field days, manages a website and keeps landholders up to date with relevant events and information via a mailing list.

The CMN is funded and supported by the Southern Rivers Catchment Management Authority and Bega Valley Shire Council.



Catchment Management
Authority
Southern Rivers



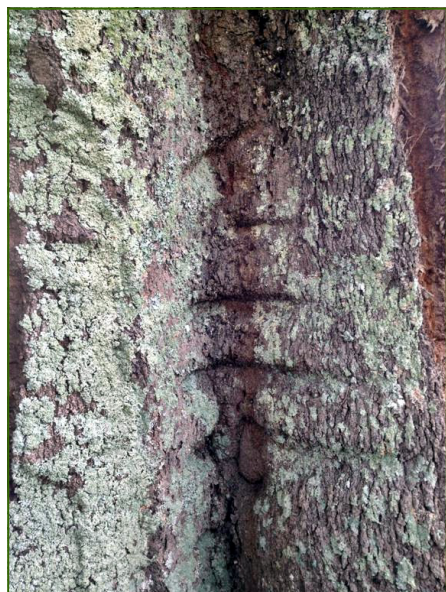
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was a veritable highway. Numerous artefacts and markings believed to be of Aboriginal origin have been identified along the route, including the markings on this old Kurrajong tree visited on the day. The most common tree scars locally are parallel lines, zigzags and circles. John is always interested in hearing if they occur in other parts of the region.

The effect of Aboriginal burning on the vegetation of the area is significant. It was accentuated



Lowland Grassy Woodland on lower slopes and valley floor of Rocky Hall



Scars on old Kurrajong tree

along the old routes which Aboriginal people kept clear, especially along the river flats and ridgelines. Burning maintained open, grassy woodlands and favoured certain species that depend on sunlight. These include yam daisies and other tubers which were cultivated as a food source.

Botanist Paul McPherson identified altered fire regimes as one of the

key threats to this ecological community. Plant diversity drops as grassy tussocks become so dense that other species are unable to flower, set seed and germinate.

Rocky Hall cemetery provided a good example of this, with the last fire there around 13 years ago. Ideally the area would be burnt every 3-5 years depending on grass cover density. Paul is organising a burn for this area next autumn and will monitor the effects on plant species.

Clearing, ploughing, overgrazing, dense tree regeneration and weeds also threaten this community. But according to Josh, the biggest impact on plant diversity in these grassy woodland areas came with increases in soil phosphorus levels due to fertiliser use after World War Two.

Vegetation surveys and soil tests on eight properties across the upper Towamba Valley, undertaken recently by Josh and Paul, have confirmed the link

between higher fertility and less diversity. The most diverse paddocks all had low levels of phosphorus.

Josh explained that native non-grass species or forbs such as orchids and lilies are affected when phosphorus fertilisers are applied to soils. These species need a diversity of mycorrhizal fungi to obtain phosphorus out of the soil. As phosphorus levels go up, the mycorrhizal diversity drops and native species start to drop out of the system. Competition from exotic species that grow faster with higher phosphorus levels also plays a role in native pasture decline.

Once native pastures are degraded it can present a risk to farmers. If you knock perennial native species like Kangaroo grass out of the system and then allow fertility levels to drop, pastures can be invaded by more competitive perennial, exotic species that also thrive in low-fertility soils. African lovegrass and Serrated tussock are two examples.

To date, these exotic species have been kept at low levels in the upper Towamba Valley thanks to coordinated community action.



Kurrajong in flower at Rocky Hall

Burning Bemboka Reserve

by Jackie Miles

Bemboka River Reserve is the largest and most intact remnant of Lowland Grassy Woodland known in the Bega Valley. The Bemboka Landcare Group has been working with botanist Jackie Miles, Bega Valley Shire Council, contractors and the RFS to improve its condition and open the Reserve to the public. Burning the Reserve this year was all part of the plan.

Jackie Miles "discovered" the Reserve in 2002 when undertaking surveys of public land within the farming areas of the Shire for BVSC, and saw its ecological significance. Lowland Grassy Woodland is listed as an Endangered Ecological Community under both NSW and Federal legislation.

Whilst some rural cemeteries, Travelling Stock Reserves (TSRs) and the odd scrap of road verge may have a higher level of botanical diversity, the size of the Bemboka River Reserve (16 hectares) makes it important. Its

value is also enhanced by additional areas of grassy woodland abutting the Reserve.

Located to the north of the Bemboka cemetery and across the creek from Colombo Park just east of Bemboka, the Reserve was formerly Crown Leasehold land with a history of occasional grazing and was transferred to Council management in about 2004.

Local residents and Council took action to look after the Reserve between 2002-2011 but its condition slowly deteriorated during the drought years, with increasing populations of noxious weeds including African Lovegrass and St John's Wort.

In 2012 the Bemboka Landcare Group gained Australian Government funding to have a management plan prepared for the Reserve, and began to undertake working bees under the direction of Jackie Miles. At the same time BVSC provided funds to create pedestrian access across Colombo Creek, since the derelict old highway bridge washed out in the flood of 2011. They also funded signage and a flood fence

across the creek to exclude stock.

Funding obtained by Noel Whitem from the Lands Department for weed control was directed to employing contractors to begin a serious push to rid the reserve of noxious and other weeds.

Burning of part of the Reserve, the final recommendation of the management plan, was achieved in August this year. With all the approvals in place and perfect windless conditions on the appointed day, it all came together. Seven trucks from the Bemboka and Numbugga RFS brigades undertook the burn, while the Landcare Group and other interested observers looked on from the edges.

The Reserve had not been grazed for at least ten years by this time, and with the two wet years in 2010-11, the grass was extremely long and thick in many areas. This was not a job to be undertaken by a few novices with knapsacks. Flame heights reached 2 metres in spots, so it was good to have plenty of water and brigade crew on hand in case things got out of control. Fortunately this did not happen and a very orderly burn was achieved.

The brigades lit up along a whipper-snipped and raked break created just prior to the burn by Landcare members and the Koori work crew, along the upper edge of the tree planting area on Colombo Creek, gradually extending the fire along the edge while blacking out behind



Flame heights reached 2m in the long, dense grasses of the open areas



Dead African Boxthorn going up in flames

themselves.

While flame heights got up to 2 metres in the long dense grass of open areas, under the trees, where grass was naturally shorter and sparser, the fire just trickled through. Fortunately such treed areas occur on three edges of the Reserve, theoretically making it easy to ensure fires do not escape the Reserve.

A long-dead African Boxthorn plant liberally laced with frosted off Kikuyu went up like a bomb, scorching the lower branches of the Yellow Box above it, but the brigades had doused the bases of the nearby trees prior to lighting this area, to minimise the damage to trees. Some pre-burn attention to potential hot spots like this is needed to avoid unintended damage. Dead trees or trees with fire scars or hollows at the base might need particular protection, to avoid having them catch alight and burn down, even from a relatively mild grass fire.

It is likely that under Koori management the more productive

parts of the Bega Valley now converted to farming would have been burnt pretty regularly to stimulate green pick for kangaroos and other prey species, and maximise the production of plants with edible tubers such as lilies and orchids.

Without some method of grass biomass reduction such as fire or grazing, native grasses, particularly Kangaroo Grass (*Themeda australis*), can become very dense and choke out smaller plants. Whilst there is already a substantial flora list compiled for the reserve, many of the species on it have so far been seen in only one or two locations. It is to be hoped that when the Reserve recovers from this fire, some interesting plants will be found rising from the ashes, or expanding into areas where they were not previously seen because of the rank grass cover.

Six 50 metre monitoring transects were installed by Jackie in August 2012, to help determine whether the fire is beneficial or not, and to assist with keeping an eye on the

general condition of the groundcover vegetation. Andrew Morrison, BVSC Natural Assets Officer, will also be monitoring the aftermath of the burn, plotting the area of the burn onto a map of the Reserve.

As well as hopefully improving native biodiversity, reducing the grass cover will give better access and improve visibility for weed control. Mopping up of remaining Wort and Lovegrass plants in the coming growing season will be crucial to getting the Reserve back to its relatively weed-free status of a decade ago.

The intention is to burn most of the remainder of the Bemboka River Reserve next year, and then to introduce a program of regular patch burns.

After a solid year of effort by all concerned in 2012, the Reserve is now ready for opening to the general public for passive recreation and hopefully, education. Signage identifying the tree and shrub species and explaining the ecological significance of the reserve is being erected, along with some seating, and a couple of walking routes which are being defined with marker posts. More local native trees have been planted on the banks of Colombo Creek.

As well as being botanically interesting, the Reserve is a terrific spot for bird watching, with its large old trees and frontage to the Bemboka River.

The official opening of the Reserve will be held on Saturday 14 December this year as part of the Lions Club Christmas Fair. Guided tours of the Reserve by Jackie Miles will be part of the day. Visit the Bemboka Landcare Website for more details www.bembokalandcare.wordpress.com

Working on Country

by David McCreery and Ali Rodway

Allan Aldridge and Koorin Campbell started work with team leader David McCreery (Macca), from Southern Rivers CMA as full time conservation field officers earlier this year. Together they form the Koori work crew and have already covered a lot of ground as they work to protect and improve the stunning biodiversity of the far south coast landscape.

With a strong background in football, both Koorin and Allan are used to working as a team. Their strength and fitness are crucial for what is often hard physical work.

The work requires diverse skills, some of which the crew members already have, and some which they are learning on the job through training, mentoring and practical experience. Some of the recent activities they have been engaged in include weed surveys, mapping and control, planting, maintenance, native plant and weed identification, seed collection and fauna monitoring.

Allan and Koorin have long term connections to the far south coast and experience in caring for it. Koorin and his family live in the Narooma area. He has done Koala survey work with Chris Allen and other fauna monitoring with National Parks. He started a university bridging course and is considering future tertiary study.

Allan recently moved back to Eden with his family after several years in Sydney. He has worked in forestry roads maintenance and with Stuart Cameron on the Coastal Weeds Project in the Eden



Koorin Campbell, David McCreery - Macca, and Allan Aldridge

area. He worked with Uncle Ossie Cruse and Eden Preschool on a book that helps maintain culture and language called *Booris of Eden*, published last year. He also provided youth mentoring and social support in Sydney.

The Koori work crew was established as part of the Australian Government's Biodiversity Fund to provide longer term employment opportunities, build skills in natural resource management and deliver environmental services across the Bega Valley and Gulaga-Biamanga landscape.



The crew members enjoy working on country, visiting places they haven't been before and seeing the landscape from a new perspective. They are in the enviable position of being able to explore all the corners of the valley and tucked away pockets of the coast line as they do their work. So far, this has already covered the region from Candelo

to Mogareeka - Tanja to Wallaga - Gulaga to Cobargo and around the base of the ranges to Brown Mountain and Bemboka.

Walking in the cool spring waters of the Bemboka River at the base of Brown Mountain, the crew has been hunting out Crofton weed infestations which hide amongst the dense riparian undergrowth and colonise sandy islands. Crofton weed is an emerging threat to the damper areas of the landscape and the crew hopes to stop it in its tracks before it migrates further east along the river line.

The crew has also walked up the wide, dry, sandy bed of the Tantawangalo River, on the lookout for Cape ivy and Prickly pear.

In view of Gulaga and Mumbulla mountains, the crew has been learning about fauna monitoring; setting and checking sand pads and infrared cameras, as part of the Potoroo monitoring program at Wallaga Lake and Tanja. Keep an eye out for the crew as the monitoring program moves out into Murrah, Cuttagee and Brogo in the next few months.

The crew has enjoyed meeting and working with some of the community whilst lending a hand

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planting with Candelo Landcare and brush-cutting a firebreak with Bemboka Landcare, before the very successful TSR and Lowland Grassy Woodland burn earlier this year.

Feedback from contractors, staff and landholders about the crew has been positive with comments about the crew's aptitude, hard work and enthusiasm for knowledge. The crew is glad to be working, building skills and developing a career path.

As summer begins and continuing into autumn, the crew will be trialling some 'off-season' control methods on an Arum lily infestation behind Barragga Bay. You might also see them following up recent surveys that have led to targeted Willow and Privet works in the Bemboka River, or hand pulling *Sagittaria graminea* in the Brogo to prevent existing infestations from expanding their territory.



Over the coming years as the capacity of the crew builds, there is scope for the range of landscape services they deliver to expand. They will be a key part of getting Biodiversity Fund projects on the ground.

If you see the crew on your travels, come say g'day to Allan, Koorin and Macca. Hopefully they will become familiar faces, as the crew and the community share their stories of country and exchange their knowledge of the far south coast landscape.

Star-hair Still There

by Andrew Morrison

On the 14th of November an intrepid group of Tura Landcare volunteers, along with staff from Bega Valley Shire Council and the NSW Office of Environment and Heritage (OEH), headed into the Tura Beach reserves in search of an endangered plant known as the Tura Star-hair or *Astrotricha sp. Wallagaraugh* (formerly known as the Merimbula Star-hair).

The species is unusual for a threatened species as it seems to tolerate (if not prefer) disturbance and can occur locally in high numbers. Little is known of the ecological requirements of the Tura Star-hair and it has not been scientifically described as yet.

The survey will be used to update the OEH database that shows the extent of distribution and numbers. It will also help Council manage the species which commonly occurs on undeveloped house blocks, roadsides, bushfire asset protection zones and easements. All of these land uses require works that impact Tura Star-hair plants.

The survey found several

areas of reserve where the Tura Star-hair occurs in very high densities and generally supported the anecdotal observations of the increase in numbers and distribution over the last few years.

During the survey it became apparent that fire is likely to play an important role in the health of the Tura Star-hair population. By overlaying fire history data from the Rural Fire Service it is hoped that a best practice burning regime can be calculated for the species.

The day was an opportunity for BVSC staff and local community members to learn the survey methodology that was developed by OEH staff member Sarah Goldin. The survey has been designed to allow members of the public to collect the data with no experience in botanical survey required. This will enable members of the Tura/Mirador Landcare group and other interested members of the Tura Beach community to collect valuable data that will go straight into the OEH database and help inform management decisions.

