



supporting landholders with native vegetation

conservation management network

Issue 14 Nov/Dec 09

## Healthy Soils, Healthy Farms

**A new and innovative research project run by the Far South Coast Landcare Association and funded by the Australain Governments Caring For our Country initiative.**

Healthy Soils Healthy Farms is a 4 year project to look at ways of improving soil health and the potential to increase the amount of carbon that can be stored in the soil.

The trials will use a range of biological fertilisers, conventional fertilisers, grazing management and wide-spaced trees to see if one or a combination of approaches will improve soil health, in turn leading to greater fodder production and increased farm productivity.

Incorporating wide-spaced trees (which will include grazing once the trees are established) is an attempt to determine if it is possible to store more soil carbon than from either grazing or trees alone. It is hoped to be able to commence grazing within 3 to 4 years. It may be possible to do some limited grazing in 2 years if conditions allow.

Paddock design and grazing strategies will be an important part of the project. Using smaller paddocks (Bega 4ha and Eurobodalla 1ha), with high stocking densities. The grazing period will be much shorter, with sufficient recovery period so that stock do not return until the pasture is fully recovered.

The project will have two demonstrations sites one located in the Bega Shire the other in the Eurobodalla Shire. Each site will have 6 plots consisting of: a control plot, conventional treatment, worm leachate, commercial biological fertiliser, compost tea, and wide spaced trees.

Each year soil and plant tissue tests will be taken, pasture assessment undertaken and biological treatments applied. This will be followed by a field day at each site to review the results and analyse what changes have occurred. There will also be a range of guest speakers covering topics such as: taking soil samples, analysing soil test results, grazing and pasture management, home made biological fertilisers, financial planning, tree planting techniques for success, whole farm planning, and carbon accounting.

At this time the sites are yet to be finalised and exact dates for next years field days have not been set, but will be held in late April or May and held at this time in subsequent years.

For further information about the project or to be notified about up coming events please contact Rod Logan, Healthy Soils, Healthy Farms Project Officer,

rodney.logan@cma.nsw.gov.au or 6491 8224.



*Photo: A Department of Environment, Climate Change and Water trial site involved in a 20 year study of the effects of different management on the soil.*

*It demonstrates the difference in productivity, impact on the nutrient cycle, water cycle and carbon sequestration by different management strategies.*

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## Coordinators Column

Well that's almost it for 2009 and hasn't it been an interesting year in so many ways. We've seen political issues and the global financial melt down affecting environmental attitudes and funding. More importantly, as far as the CMN is concerned, we've seen a change in the way environmental funding flows. The Federal Government has taken the drivers seat in determining where dollars are spent through it's 'Caring for our Country' program.

As a result we are looking at broadening our support options to more than just managing native vegetation. We're also looking at forming stronger partnerships with other support agencies, in particular the Far South Coast Landcare Association (FSCLA). The FSCLA have some good projects running focused on sustainable land management that we've previewed in this edition. To know more about these projects drop Dave Newell an email and ask to get on his mailing list 'Newells News' david.newell@cma.nsw.gov.au

I tried to stick to good news stories for the end of year with the exception of a new weed threat on our beaches. Also with Christmas round the corner, a kiss under the mistletoe got me thinking about our native mistletoe. They've had a bad wrap in the past but new research is showing us how integral they are to our woodland ecosystems. Some of the local species are flowering at the moment so turn your eyes to the canopy and see if you can spot one.

I am particularly keen to hear about the types of support you need to manage your land effectively and sustainably. What would help you achieve your goals? Do you have clear goals? If you would attend one field day next year, what topic would it be? Send us an email and let us know. It only needs to be brief but would really help us plan the next 12 months.

Enjoy the festive season and have a good break.

DAN

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## Who is behind the CMN ?

The Far South Coast Conservation Management Network (CMN) supports landholders to manage native vegetation on their property and caters to all land holders and vegetation types.

The CMN is funded and supported in various ways by the Southern Rivers Catchment Management Authority, Department Environment, Climate Change and Water and Bega Valley Shire Council.

These agencies are working with landholders to protect native vegetation on private as well as public land. The CMN's role is to provide motivation, knowledge and skills support to landholders to ensure ongoing management and care is worthwhile for the landholder and the environment.



## CMN's Motion Sensing Camera

The remote camera has been out and about lately and come up with a few interesting findings. The camera is available for anyone to use for a few weeks at a time. Our aim is that people use it to get a better understanding of the fauna on their property. That may be to know more about how native species interact with your management actions but also to get an idea of the exotic animals at play. It is movement sensitive, can be set up and left for days at a time and will take colour shots during the day, infra-red black and white shots by night and can even be set to take short video clips.

One of our members in the Springvale area has problems with rabbits and through use of the camera, has discovered how important baiting methods are when using poison to deal with rabbits.

Concerned about the use of poison and the impact it may have on non target species, he set up the camera in front of a pile of carrot which is often used with Pindone to kill rabbits. What he found was a variety of native species taking the bait or taking interest in it. This raises a number of issues about the use of poison.

Enough is understood to know that Pindone can impact non target species such as some birds, macropods and bandicoots. Secondary poisoning can also occur in species feeding on poisoned rabbits so removing carcasses from around your property is important.

A few thoughts that need to be considered when planning to implement poison for feral animal control are

- Can other methods be employed before relying on poison ie warren destruction, shooting, biological control etc.
- Understanding when and where to lay the bait and checking baits daily
- Using a bait station which limits non target species accessing the bait
- Free feeding to determine the right amount of bait to use and where to use
- Notifying neighbors at least 72 hours prior to use is mandatory in NSW

In following editions of the CMN newsletter we'll discuss and detail some of the issues around feral animal control. Any comments or questions are most welcome to help us understand what you need to know. Further info about feral animal control can be directed to field staff at the Livestock Health and Pest Authority, 34 Auckland St, Bega, 6492 1283.



Photos above: An example of a bait station limiting larger or more timid animals from taking the poisoned bait, in this case oats.



Above (top to bottom); Australian Raven, Australian Magpie, Common Wombat, European Rabbit and the Red Fox all showing interest in the bait carrot, fortunately not poisoned at this time.

## Mistletoe Magic

*Mistletoe is a prominent component of woodlands throughout south-eastern Australia. Unlike many woodland plants and animals that are becoming increasingly scarce, mistletoe has responded positively to habitat fragmentation and has become more abundant in many areas. These parasitic plants are widely thought of as introduced pests that kill trees and degrade the landscape, yet recent research is revealing quite a different story.*

The impact that mistletoe has on general diversity has long been regarded as detrimental, as mistletoe can lead to the death of a tree if numbers become too great. The assumption is rather simple; mistletoes kill trees, trees are good for biodiversity, thus mistletoes adversely affect biodiversity. Also, contrary to popular belief, all mistletoe found in Australia (over 90 species) are native.



More recently, mistletoe is being found to be more of a keystone species for biodiversity rather than one that causes decline. A particular study that proves such came by chance when a researcher from Charles Sturt University, David Watson, found two sites that were perfect for comparing the difference in biodiversity directly related to presence or absence of mistletoe.

In 1996, the owner of a block of land near Gundaroo, in the Southern Tablelands of NSW, started systematically killing mistletoe using a blowtorch and a trailer mounted cherry picker. The landholder was concerned about declining biodiversity, particularly birds, and carried on doing this for the next four years believing that mistletoe would adversely affect their remnant of open grassy woodland.

Across the road a similar sized remnant of the same grassy woodland had not had mistletoe removed. Both remnants had similar vegetation densities, an understorey dominated by native and exotic grasses, few shrubs, a single dam

each and several intermittent streams. In essence, the only difference between these two 35 odd hectare sites was four years of mistletoe removal. This was the first case where researchers could examine the effect mistletoe had on biodiversity and the ecological system of grassy woodlands.

The study looked at bird species of the two sites. Ten one-hour bird inventories were taken at each site in both spring and summer resulting in 40 hours of census. 52 species were recorded at the treatment site (with mistletoe removed) and 61 at the control site. In terms of woodland dependant species, 38 species were recorded in the treatment site with 46 in the control. Digging deeper in to the woodland species numbers, 14 were recorded more commonly in the treatment site whereas 30 were more commonly recorded in the control site. Of the 16 species known to feed on mistletoe, 13 occurred over the two sites with only three occurring frequently in the treatment site but 10 occurring more frequently in the control.

There is of course a whole lot more statistical data but the above are the highlights. For the sceptics, the only data that didn't show a significant difference towards mistletoe was numbers of birds known to nest in mistletoe clumps. Another observation was recorded relating to depth of leaf litter. The percentage cover of leaf litter showed no significant difference, however the depth of leaf litter appeared far greater in the control site.

There are many reasons why mistletoe has a positive influence over bird species richness and numbers. There are many insects that are mistletoe specialists, including butterflies, moths, flies, thrips and psyllids. This would certainly benefit insectivorous birds. Mistletoes rounded structure provides for better protection when nested in and the provision of nectar forage is also an obvious benefit.

There is surely a lot more that is yet to be discovered about the magic of mistletoe, but there seems to be enough evidence emerging to show that contrary to historical belief, mistletoe are in fact vital in providing a diverse habitat in grassy woodland remnants, of which the Bega Valley was once dominated by.

## Mistletoe in Fragmented Landscapes

All mistletoes in Australia are native and they engage in a range of interactions with many animals, having a positive influence on overall biodiversity. Yet, in high densities mistletoes can be detrimental to individual trees. Accordingly, we as land managers need to better understand the role of mistletoe in our remnant woodlands.

Grassy box woodland was once a major vegetation type in inland South Eastern Australia but it is fast becoming a rare site and the remnants remaining are in decline. Following on from the initial study near Gundaroo (described on the previous page) a large-scale investigation in the upper Billabong Creek catchment near Holbrook, NSW known as the RIFLE study (Resources in Fragmented Landscapes Experiment) is under way to gather more definitive data on mistletoe interactions in woodland vegetation.

Forty remnants of Grassy Box Woodland occurring on private land were selected and surveyed for all terrestrial vertebrates over 12 months. All mistletoes were then removed from twenty of the remnants, leaving the other twenty as controls. Over the next two decades, biodiversity is being compared in these two groups of fragments, with birds, mammals, reptiles and butterflies monitored seasonally and related to a range of resources.

Preliminary data indicates that mistletoe provides critical nutritional and nesting resources for many animals, determining distributions for many species and potentially offsetting many of the harmful consequences of habitat fragmentation. Mistletoe also plays a key role in nutrient dynamics, affecting litter and soil composition impacting productivity and successional processes. Rather than a threatening process or a weed that should be controlled, mistletoe appears to be crucial to the ongoing maintenance and conservation of our threatened woodlands.

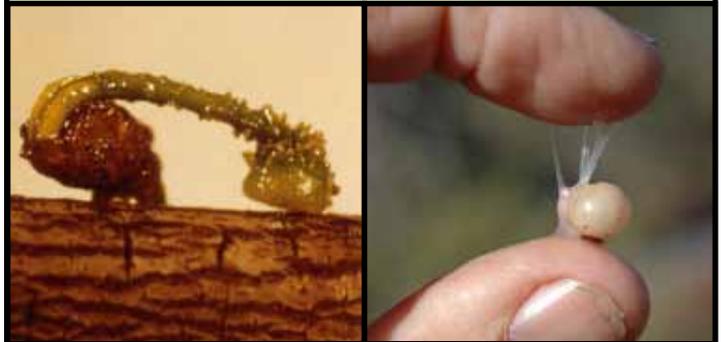


## Mistletoe Bird, Dispersal and Germination

There is actually no direct connection to the soil at any stage of the mistletoe's life cycle. The mistletoe fruit is a single-seeded berry with striking adaptations for bird dispersal, germination and attachment. The Mistletoe Bird is one of the main dispersal methods and the two have developed a mutual relationship ensuring both their survival.

Like many fruit-eating birds, Mistletoe Birds have a relatively simple digestive tract, so that the seed passes through the bird rather quickly. In the Australian mistletoe bird defecation usually occurs 4-12 minutes after ingestion. Even so, the bird digests a significant amount of glucose from the sticky layer (below right) which is still intact when the seed is defecated.

The seeds therefore emerge from the bird intact and undamaged. The mistletoe bird performs a number of twisting movements when defecating, wiping the seeds on to the branch on which the bird is perched, rather than dropping them to the ground. The sticky layer dries and cements the seed in place on the branch, where it germinates spontaneously.



It is thought that there are germination inhibitors in the fruit coat which prevent premature germination before ingestion. The mistletoe plant and the mistletoe bird thus show complementary adaptations for mutual benefit, the plant attaining efficient dispersal and the bird ensuring a continuing food supply.

Germination is normal, except that the primary root of the embryo is modified with a pad on the end, which emerges first (above left). The pad becomes cemented to the host stem, like a holdfast, and then grows into the host from its base. Subsequent development of the mistletoe plant is like any normal plant, except that it is embedded in the host instead of a root system in the soil.

## Holistic Management

Yowrie Valley Landcare sponsored two weekend workshops in Holistic Management this year through funds they received from the Australian Government via the Caring For Our Country Program.

Broadly speaking Holistic Management is about “people earning more profit from healthier, regenerating land”. While this course is aimed at farming landholders – big or small, a number of the topics explored were equally applicable to individuals and other businesses.

The workshop held in April looked at the ecosystem process, biodiversity, tools used to manipulate ecosystem processes, and holistic grazing planning. The second workshop, held a few weeks ago, explored holistic decision making and financial planning, testing guidelines for your decisions and monitoring the results.

Both weekends were well attended with approximately 15-20 people at each workshop. Most attendees were beef farmers; all were enthusiastic participants, encouraged to see there is hope for our land, our farms, and our livelihoods!

These topics are only a part of the full Holistic Management course, which usually takes 18 intensive days to present. Bruce Ward, the Trainer for the workshops, is investigating the possibility of running the course through Bega TAFE next year, probably in the format of two days per month for 9 months in total. The vast majority of those who have had a taste of Holistic Management have expressed their intention to take part! The provision of this course through TAFE will be a great opportunity for many more Bega Valley farmers to access Holistic Management training.

## Bega Cheese Environmental Management Systems

**An industry/government partnership producing benefits for the whole community.**

The Bega Cheese Environmental Management Systems (BEMS) started in 2005 as a pilot program focussed on improving farm efficiency and the environmental performance and natural resource management (NRM) outcomes of the dairy industry. Since then the program has engaged with around one hundred landholders and planted tens of thousands of native plants. The aim is to identify on-farm environmental issues and address them through an incentives program for on ground works.

The program is a partnership between Bega Cheese and its suppliers, Southern Rivers Catchment Management Authority (CMA), Bega Valley Shire Council and Department of Primary Industries (DPI).

The key outputs of the project to date are:

- 74km riparian/wetland fencing, 200ha of riparian land
- 110 ha revegetation and remnant management
- 184 off-stream watering points
- 13 erosion/nickpoint sites
- 21 dairy laneway upgrades
- 15 stream crossing upgrades
- 36 effluent system upgrades
- Nutrient mapping across 90 farms (15,000 ha)

All of these activities have resulted in positive outcomes for the region's natural resource base, most notably to river health. Additionally, most activities have yielded obvious production benefits for the farmer, providing an excellent demonstration of the balance that can be achieved between production and environmental protection.

The strong partnership between Bega Cheese and government agencies have resulted in a significant level of farmer participation (more than 90% of the Bega Cheese dairy farmers participating in less than five years). Cash and in kind contributions by farmers are on average approximately 3.5 times that of the government contributions made, even in a period of long term drought. The success of the BEMS program shows us that partnerships with industry, in particular agriculture, is an effective way to deliver environmental and industry benefits.

We will feature a case study of one of the BEMS dairy farmers in the next CMN newsletter edition. But if you would like more information contact Andrew Taylor, Southern Rivers CMA 6491 8206 [andrew.taylor@cma.nsw.gov.au](mailto:andrew.taylor@cma.nsw.gov.au).

*Photo: An example of a shelterbelt, nutrient trap and vegetation corridor increasing productivity and environmental outcomes.*



## Crofton Weed Outbreak Controlled

In May this year, a significant infestation of Crofton weed was reported on Rutherford Creek and Bemboka River. Crofton Weed is a declared Class 4 noxious weed under the Noxious Weeds Act 1993 . It must be fully and continuously suppressed and destroyed and all precautions must be taken to ensure that produce, soil, livestock, vehicles, plant and machinery are free of the weed.

Crofton weed is generally found along creeks in gullies or shaded degraded land. It can reach 2 metres in height and has purplish stems with dark green trowel-shaped leaves and clusters of small white flowers. The seed is dark brown to black, angular and spreads by water or wind. It can also be spread in sand or gravel, by vehicles or stock, on clothing and in agricultural produce.

There are several other known infestations in the Bega Valley Shire found along creeks and in moist gullies. All known sites are treated regularly by Bega Valley Shire Council weeds officers and any new infestations followed up.

The Bemboka River project is a good example of fast action leading to good control before a weed is able to get out of hand. It also demonstrated that weed eradication and control is most effective with council and landholder support.

Weeds officers inspected the site and all properties downstream of the creek for 5 kms to determine the extent of the infestation. They found Crofton weed on Rutherford Creek above wooden bridges extending 400m upstream and along 3.5 kms of Bemboka River downstream of the creek.

Eraring Energy, property owners adjoining Rutherford Creek, and Southern Rivers Catchment Management Authority (SRCMA) contributed funds for a project to control all Crofton weed on private properties and adjoining crown land and prevent flowering and seeding in the spring/summer season. Council contractors carried out the work in early September, successfully controlling all known infestations.

A further re-inspection program will be carried out in autumn and any emerging seedlings will be fully controlled. Follow-up is necessary to ensure that Crofton weed does not re-establish and prevent the possibility of it spreading further downstream.



Crofton Weed is easily identifiable and does not resemble any local native plants. To stop it spreading or appearing anywhere else in the valley, landholders can check out the Southern Tablelands and South Coast Regional Noxious Plants Committee website which has good photographic ID and more detailed description of the plant. [www.southeastweeds.org.au](http://www.southeastweeds.org.au) and search 'Crofton Weed'.

The project has been very successful, largely due to cooperation between Council, affected landholders, SRCMA and NPWS contributing to the success of the program.

## New Coastal Weed Spotted

In the course of South Coast Councils' federally-funded project to control sea spurge along the South Coast beaches project officers have discovered that sea spurge is not the only exotic weed attempting a takeover of local beaches.



Beach daisy is a South African plant whose seeds, like those of sea spurge, are dispersed along the coast by currents. It is a prostrate plant that has very furry, silvery, spoon-shaped leaves and yellow daisy flowers. It forms extensive clumps which mound up as sand is trapped round the stems, significantly modifying the beachscape.



A particularly extensive infestation has established in the mouth of Wallaga Lake, on the boundary between Bega Valley and Eurobodalla shires. Both councils have undertaken to control this site however beach daisy could turn up on any local beach. So if you come upon it while taking a beach stroll please contact Bega Valley or Eurobodalla shire council weeds officers.