



Fungi and Revegetation

Planning to restore native fungi below the surface as well as native vegetation above ground can greatly assist in the success of revegetation projects.

Healthy natural ecosystems throughout Australia have a greater diversity of native fungi than degraded or revegetating ecosystems. A three year study surveying woodlands in Western Australia identified 10 native fungi in revegetated areas compared to more than 100 fungi in nearby woodland remnants. No native fungi were observed in cleared agricultural lands.

Australian ecosystems have effective conservation of nutrients through efficient soil nutrient capture and cycling processes. The fertility of soil is largely maintained by soil micro-organisms. Fungi help the tight nutrient cycling processes, minimising nutrient losses and making captured nutrients available to plants and animals.

Native fungi can be helped back into degraded ecosystems using simple, low cost methods that are not disruptive to the environment, and are compatible with revegetation techniques currently in use. All it takes is a willingness to incorporate fungi into revegetation programs, and a degree of confidence about what you are doing.

Currently there isn't commercially available sources of native fungi to utilise in revegetation projects, so collecting and propagating yourself is necessary. Information about fungi identification, collection and propagation can be found at CSIRO's FungiBank web site. www.fungibank.csiro.au

Appropriate fungi needs to be chosen from remnant vegetation close to the site you are planning to restore. These will be used to the soils and conditions and have the best chance of survival. Spores of decomposer type fungi can be applied to any plants. However mycorrhizal fungus tends to be more species specific and some plant genres are not compatible with mycorrhizas at all.

Fungi can be put directly into revegetation sites before



or after the plants. However this is likely to be less successful than raising plants already growing with fungi before they are planted. There are a variety of methods that have shown successful introduction of native fungi into revegetation trials.

Native fungi are not self re-establishing in degraded soils. Only a very low proportion of native fungi re-establish on badly degraded land or cultivated land in the short to medium term. When we plan to revegetate we should also be planning to replace the fungi to help re-establish soil biodiversity and to kick-start healthy soil processes. This can help support long-term health of the plants, and additionally contribute to biodiversity conservation below-ground as well as above-ground.

Mycorrhizal fungi are fungi that have a mutually beneficial relationship with host plants. This occurs via a two-way exchange in modified roots known as mycorrhiza. Photosynthates (carbohydrates/sugars) from the plant are transferred to the fungus in one direction, while soil nutrients and water are transported to the plant in the other direction from the fungus. The term 'mycorrhiza' literally means 'fungus root'.

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Coordinators Column

Well, here we are...2009. Our best of health and happiness to all of you. Yep, you are right, this edition is a little late. I'd say you can always expect the Jan/Feb issue to hit the streets late Jan rather than early. Vickie and I had a pretty busy Christmas which involved moving house as well. We're now in Bega so unfortunately don't have the acreage we had before or the lovely Bega Dry Grass Forest that went with it. I'll still have a hand in managing it however as the property we moved from will now house my parents.

What are you planning to do on your property this year? Have you got a plan? What about a few priorities for your native vegetation? Love to hear about it if you do. Any feedback or updates of your progress will help us decide what sort of support and types of information we can provide you with. So by all means if you are up for a chat about what you are thinking native veg wise for this year, drop us a line and see how we could help.

One way might be by helping set up a local working bee system in your area. This is something we've decided we can do easily to promote good veg management. See page seven for more info about working bees.

This issue I've included some interesting articles about broad topics with check list type bits of advice etc. These are meant to be starters and thought provokers more so than hard facts. The inside double pager has been adapted from a series of free guides about riparian and waterway management and are well worth a read if your land is influenced by water. Or to put it another way, if your land influences any waterways!

Keep up the good work everyone.

DAN

Ask an Expert

New column for CMN newsletter

Starting next issue we are introducing a new column in the newsletter called 'Ask an Expert'. It's a place for you to ask questions about vegetation management and we'll publish an answer from the most appropriate 'expert' in the valley we can find.

There are two gains here

1. We can produce information that is most current to your thinking
2. You get to know more about the wide array of natural resource management experts in the valley.

Send us your questions now for the next issue. Details above.

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

The FSCCMN is funded by the Southern Rivers Management Authority.



Revegetation Methods Field Day December 6th - 2008

This field day was designed to cover as many of the options and decisions that need to be thought about when considering and planning a revegetation project. If you missed it but would like to have a chat about your revegetation options we are always open to nutting it out with people. We'll also have some material up on our web site soon that will help. In essence, the key is planning.

Over 40 people attended the field day that spanned three sites. Each site had something different to offer in terms of approach, methods used and outcomes. The first was a dairy farm at Jellat with a history of revegetation projects going back more than 15 years. Rob Russell, owner of the family farm, spoke to the group about his involvement over the years and his change in approach and reasons for taking on revegetation. Some of his plantings had a dual use of native forestry as well as habitat creation and erosion stabilisation. Rob will be able to use some the timber around the farm for fencing and firewood. This can be an added benefit of putting effort into revegetation works as it can improve the farm spreadsheet as well as the natural environment.

At the Russell's farm we also heard from Don Firth, who managed the former Bridge House Nursery at Brogo. Don recounted from his experience with the Bega Tree Planters, a voluntary organisation who helped organise and carry out revegetation projects (Wow, lets get that going again!). One of Don's main topics was the use of tree guards, the types available as well as where and when not to use them.

The group also heard from Louise Maud who for 15 years managed 'South East NSW Private Forestry'. Louise's extensive experience in planting trees for financial return gave the group a very good understanding of how to achieve good survival and growth rates. Many of Louise's projects included habitat outcomes as well.

Alison Rodway of the Bega River and Wetlands Landcare Group (BRAWL) took us through a revegetation site of theirs at the junction of the Bega and Brogo Rivers. BRAWL's minimal chemical policy has meant they approach weed management in a different way to most. They have trialled using weed matt in one area and sterile rye corn on another to suppress the weeds. Whilst intensive to set up and not appropriate for large scale plantings, weed matt was found to be very effective.

Before moving on to the last site, the group gathered for a fantastic lunch supplied by RED café. This was followed by a forum which allowed participants to ask questions about their specific situations. On hand to answer questions were 11 support or technical staff from the various government agencies and a few private businesses involved in ecological management.

The last site we visited was a riparian planting carried out by Springvale Landcare. Members of the group Andrew Taylor and Mark Tandy explained the history of their work and the groups general approach. Due to limited time and numbers in Springvale Landcare, their plantings were done in a day and only really followed up once or twice a year. This differed from the other sites in that input was low and success rates not as high, BUT the job was done, trees are growing and habitat is re-establishing. This illustrated the point that revegetation can be done on a shoe string and minimal time, it just requires good planing and expectations that you may lose a few plants early on.



10 tips for planning a revegetation projects

1. Write a simple plan, i.e. when will you start prep, order plants, planting.
2. Include your revegetation plan into your whole property plan.
3. Plan first for what time of year you want to plant and work back.
4. Consider fencing off and work with natural regeneration instead of planting.
5. Consider linking to existing vegetation outside your boundaries.
6. Avoid using outside machinery on your property which can carry weed seed.
7. Decide to water or not during the months after planting. This will determine when you plant and whether you water on the day of planting. Soak the plants in their pots for an hour or so before taking them into the field.
8. Research which species are appropriate? Local seed is best.
9. Decide where/when will you get your seedlings. Ordering what you want ensures you get the right mix of plants.
10. Minimal soil disturbance will minimise weed outbreaks.



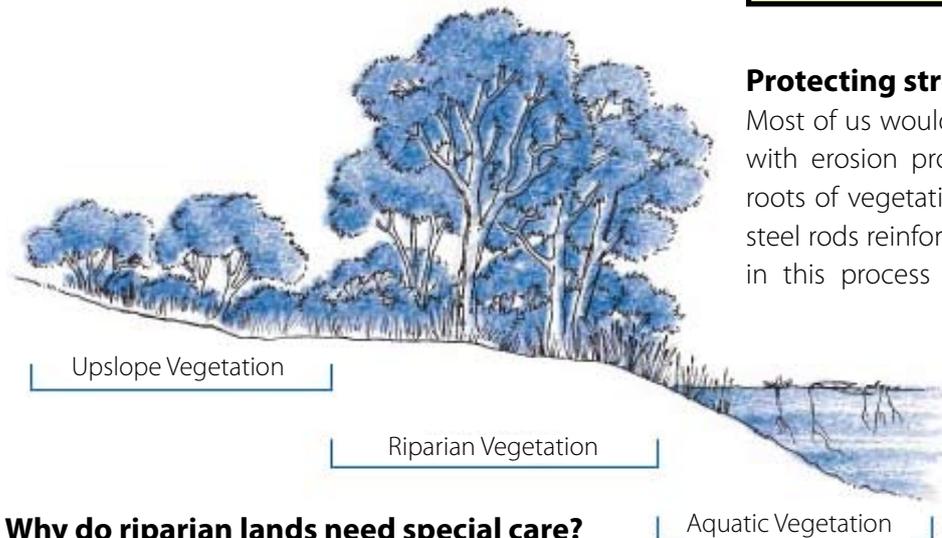
Managing Riparian Land

Managing the landscape for production is a complex activity. Getting the balance right between input and output whilst having enough resources, knowledge and equipment is key to making it work. Managing the land for conservation is much the same. The natural ecosystems on your land are not all the same and require different approaches, methods and a vast amount of knowledge to understand them all.

Possibly one aspect of your land is a riparian zone. It is important not to think of riparian land as just a narrow strip along each riverbank. Depending on the nature of the land and the adjacent land use the width of riparian land that needs special management will range from very narrow to a wide, densely-vegetated corridor.

What is riparian land?

Riparian land is any land that adjoins or directly influences a body of water. This could be thought of as any land that can have an impact on the water quality of a river, lake or wetland. It includes: the land immediately alongside small creeks and rivers including the river bank itself; gullies and dips which sometimes run with water; areas surrounding lakes; wetlands and river floodplains which interact with the river in times of flood.



Why do riparian lands need special care?

Riparian land is often highly productive. It has often been heavily cleared and is used for intensive cropping, grazing or irrigation. Riparian land usually reflects the better soils and greater moisture found in the lower parts of the landscape. Riparian land also plays an important role in the lifecycle of many native animals and plants by providing wildlife corridors and a refuge for animals in times of drought or fire. By its very nature riparian land is fragile and performs a vital link between land and water ecosystems. An unhealthy riparian zone will lead to an unhealthy water way and vice versa. Its productivity also makes it vulnerable to over-use and to practices that cause it to deteriorate, creating additional problems. Good management of riparian land is an essential component of sustainable management of a property or landscape that can yield numerous benefits.

Key principles in managing riparian land

Sound management of riparian land is not free of cost, but many benefits can be derived from it and problems avoided. In many cases, these easily outweigh the costs incurred over the medium to longer-term. The most obvious actions are:

- * Retention of existing natural riparian vegetation, and suppression of weeds and pest species.
- * Stabilisation and revegetation of degraded riparian areas
- * Control and management of stock access to riparian zones, and provision of off-stream watering systems.

Protecting streambanks

Most of us would realise that a waterway on your property with erosion problems is a management nightmare. The roots of vegetation reinforce the soil in the same way that steel rods reinforce concrete. Fine roots are more important in this process than thick roots. Root reinforcement by riparian vegetation is usually the most important safeguard against bank collapse. Recent experiments have shown that tree roots can substantially increase soil strength to a depth of at least 2 metres, and to a distance equivalent to the canopy dripline.

Riparian vegetation is able to use much of the water present in streambanks. Often banks collapse when they are saturated with water, so riparian vegetation can help to reduce the risk of sudden collapse.

The speed of water flow in a channel can be decreased by vegetation growing either on the bank or in the water, and by debris or sediment in the stream. If the vegetation is growing on the bank face, it can reduce scour and consequently undercutting and collapse of the upper bank. However, if the vegetation becomes too dense, for example in the case of reed beds or some invasive exotic grasses, it can direct flow into the banks and increase scour.

Why Manage Riparian land ?

A wise local CMN prophet once said "Only those who allow prosperity in their riparian land understands the reimbursement to their whole property"

Decreased erosion

If riparian land is not well-vegetated with deep-rooted plants, this can lead to flood-outs, stripping of topsoil from the floodplain, and accelerated bank erosion

Improved water quality

Good management of riparian land can decrease the amount of soil and nutrients moving from cultivated fields into the stream. By trapping soil and nutrients, water quality is improved and the loss of in-stream habitat through siltation is prevented.

Healthy ecosystems

Good management of riparian land can prevent or minimise damage to both land-based and river ecosystems. Such damage can upset important biological balances and lead to the deterioration or even destruction of interdependent environmental systems. Riparian lands serve as corridors between tablelands and lowlands, and enable essential seasonal movement of species between the two.

Stock management

Stock that are allowed free and uncontrolled access to riparian land can directly foul the water with their wastes. They also increase soil erosion by over-grazing and through formation of bare walking tracks and pads. Both of these reduce water quality for downstream users. When water is contaminated with silt, manure or algae, animals are less inclined to drink, resulting in a drop in production.

Light grazing



Moderate grazing



Heavy grazing



River Landscapes

Fact sheet series 1 - 13

Available from **Land and Water Australia**
www.rivers.gov.au/river_management_issues

These thirteen comprehensive fact sheets cover the most common river management issues faced by people living and working along Australia's rivers. They set out the general principles and practices for sound management, and are a first step to gain an understanding of key river management issues and how they can be addressed.

Decrease in insect pests

Healthy, vegetated riparian land provides habitat for insect-eating birds and insect parasites that can help to protect pastures and crops from damage. It has been shown that losing even a small number of birds can allow significantly more belowground pasture grubs to survive and become adults.

Increase in capital values

Anecdotal evidence from real estate agents suggests that well managed riparian frontage can add up to 10% to the market value of a rural property.

Shelter effects

The shelter and microclimate which riparian vegetation creates can help to reduce death in newborn livestock, and lead to improved growth and productivity through reduction of heat or cold stress in animals. Vegetated riparian areas reduce wind speeds and this can assist growth and production of crops.

Retention of nutrients

Riparian vegetation can absorb and use natural or added nutrients that may be washed into streams, resulting in the growth of invasive plants and algae. Sediment and nutrient can be trapped from overland flows and, in some circumstances, riparian vegetation can also utilise sub-surface flows of groundwater and the nutrients it contains.

Landscape refuge

In drier environments, riparian lands act as vital refuges for plants and animals during drought or fire, and become reservoirs from which species can move out and recolonise adjacent areas when better times return. Riparian lands also act as corridors of natural vegetation, preventing species becoming isolated and dying out.

Remote Camera

On loan for CMN members

Don't forget that we have a remote, motion sensing camera for loan to CMN members. Are you a member? If you get this newsletter or emails from us, you are a member!

So if you're keen to record the fauna that frequent your native vegetation, drop a line or email to book the camera out. It is available for two weeks at a time.

The camera has the ability to be left in the field for days or weeks at a time. It will take colour photos during the day and infra red, black and white photos by night.

Here are some pics taken so far



Top: Fox checking out a wombat hole.

Middle: A previously unknown dog visiting a well known wallaby feeding ground.

Bottom: Mother Eastern Grey with joey.

The Wetland Carers Network

By Susan Rhind

Wetlands Project Officer

Conservation Volunteers Australia

In late 2008, Conservation Volunteers Australia (CVA) received funds to establish a Wetland Carers Network in the Southern Rivers region of south-east NSW. The purpose of this network is to connect and support people looking after wetlands. So from Wollongong to Eden to Braidwood, community members and groups involved in caring for wetlands, creeks and soggy bogs are invited to join the Network.

The coordinator of the project, Susan Rhind, is CVA's Wetlands Program Officer in Wollongong. Susan's major activities in establishing the network start with conducting a survey to determine what skills and knowledge the community need with their work on wetland protection and rehabilitation. Once the training needs have been identified, CVA will coordinate training days. The survey is well underway, and you only have until 6th February to take part. Contact Susan on the details below.

The program is not restricted to community groups like Landcare. Susan is keen to engage with landholders who have wetlands on their property and are interested in better understanding how to manage them.

In addition to addressing practical needs, a quarterly newsletter is being produced by the Network to inform, inspire and energise. In particular, this is the place for people to share stories about the work they are doing – the wins, losses, frustrations, helpful hints and the plain funny aspects of trying to care for the land. If you have a story you would like share or if there are specific aspects of wetlands management you want to know more about that could be published in the newsletter, please contact Susan.

Finally, planning is underway to host a wetland carers forum that will take place in June 2009. This will be a 2 day event that includes talks, presentations, workshops, lots of socialising and a field trip. If you have suggestions you would like to contribute to the forum planning, a venue or a field site that you think could be good – let Susan know. She can be contacted at CVA on 4228 9246 or by email at srhind@conservationvolunteers.com.au



Left: Farm dams, a common part of many farms that landholders may not 'see' or manage as a wetland.

The Wetland Carers Network is a great place to start finding out how your farm dam can act as a native animal resource as well

Getting the Job Done

All of us who have native vegetation on our properties and enjoy looking after it have it. It's that big job that you'd love to get done but just can't seem to get started. It can be the bane of your life at times, too big to do yourself, too expensive to hire a contractor and it can hold you back from getting anything else done. How can you get it started let alone finished?

Have you thought about having a working bee? They are actually great fun, a fantastic way to get things done, share skills, knowledge and get to know people around you with a similar love for the bush. You'd be amazed at how much can be achieved by a group of happy workers!

Working bees can take form in many ways, depending on time and commitments of those keen to be involved. One model is the 'group rotation' model. This relies on having a core group of members where working bees are taken in turns and rotated from property to property. You may do four or five days for others then it's your turn to have everyone at your place. You get your jobs done and learn a lot along the way seeing what others are doing and picking up skills and ideas from your group as well.

The other main type of working bee is where you have a once off day by yourself and invite others to come along. You'll need to tempt them with some sort of reimbursement, be it a top notch lunch and refreshments, maybe it's a fine bottle of wine or even some other form of barter that you work out with each person to attend. Think about it.... What have you got to lend, pass on, consult on that you could trade for a day of work?

None of this needs to be seen as hard labour, nor should you imagine that you'll have a bunch of people attend that you can boss around. The work should be light enough for all abilities with a social atmosphere created so you can all chat and learn as you go.

Working bee check list.

1. Make a list of priority jobs you would like to get done.
2. Allow people to choose what they would like to work on.
3. Ask workers to bring useful tools and be sure they have marked them.
4. Ask people to bring a contribution towards food and/or refreshment or you might supply this yourself, depending on your arrangements.
5. Think about how are you going to 'reimburse' the people who come to help and make them aware of this.
6. Have all necessary material out and ready for use, ie wire, posts, tools.
7. Make sure you or someone is on hand to be able to answer questions and manage the day, ie morning tea breaks, getting the billy on etc.

CMN working bee @ your house

Because the CMN believes that community networking is a vital part of effective native vegetation management we are going to support any of you who wants to have a working bee. We will organise people to attend, help you organise the days work, find others in your vicinity who are keen and even cater for your first day. All you need to do is be keen yourself and **contact us**.

Examples of working bee jobs

Planting, weeding, fencing, pruning, bush regeneration, regrowth thinning or even brain storming ideas for working together with neighbours!

What can the CMN remote camera do for you?

- Document a list of fauna
- Take day and night photos
- Discover fauna you hadn't seen before
- Monitor pest species
- Improve your understanding of the ecology of your property

Below: a host of animals visit a watering point, previously known only for wombats!



Thanks to David & Leonie Barret and Doug Reckord for the pics so far.