Issue 11 - November 2009

Wombat Forestcare Newsletter

Spring is here and what a busy time it is. Not only are the animals busy breeding and the plants busy flowering, but some of our members have been busy searching for rare plants; and finding some too. There are many really wonderful reasons to get out into the forest at such a lovely time of the year and you never know what you might find, a beautiful orchid or a pair of Powerful Owls perhaps? So no excuses, go for a drive and a walk and see what the Wombat Forest has to offer. Come along and participate or read all about it in this and subsequent issues of our newsletter... Tibor Hegedis *(editor)*

Wombat Forestcare's Significant Rare Plant Discovery

By Gayle Osborne

The rare plant search has been very exciting and rewarding. We started looking for Satinwood plants in the Barkstead area and when this was unsuccessful, moved on to the search for the Wombat Leafless Bossiaea (Bossiaea vombata) in the vicinity of Spargo Creek.

The plant we were searching for had already been seen by staff of the Herbarium who had established that it was a new species only found in the Wombat Forest, Bossiaea vombata, and this was the only population known to be in existence.

Due to the rarity of the plant the exact location was kept secret. Within a short time of commencing our search we located a plant and assumed that it was the same plant that had been found by the Herbarium.

We were stunned to find that our plant was about two kilometres from the "Herbarium" population and had to wait for weeks for the plant to be identified as *Bossiaea vombata*. Other contenders were Mountain Leafless Bossiaea, *Bossiaea ripera*, which has been identified at Sailors Falls and River Leafless Bossiaea, *Bossiaea bracteosa* which occurs in a number of areas in the State.

Line searches near the population failed to locate more plants but during a chance wander into a different forest type, four other populations were discovered. This is a stunning result for our group.

It is a special time to be in the forest and we have been fortunate to see a number of Giant Sun Orchids. ■

Wombat Leafless Bossiaea, *Bossiaea vombata* in flower *(above, photo Gayle Osborne)* and seed pod *(below, photo by Tibor Hegedis)*

The Journey of the Moorabool River

Words and Images By Alison Pouliot

Sources of water have provided interest and intrigue to people across cultures throughout history. Besides the obvious necessity for potable water, many cultures also have an inherent energetic or spiritual connection with it. Water sources also represent places containing some of the most intact catchments, highest water quality and environmental values.

One such place is the Wombat Forest on the Great Dividing Range and it is the origin of seven rivers. The region has a long history of attracting people from the original indigenous people through to the various waves of European and Chinese settlers and more recently, the tree-changers and spa seekers.

One of these rivers, The Moorabool, rises in the Wombat State Forest as two branches, which meet north of Morrisons, draining an area of nearly 2,300 square kilometers. The river flows southwards through a mixture of eroded sedimentary and fertile volcanic soils and across the flat western basalt plain to its confluence with the Barwon River.

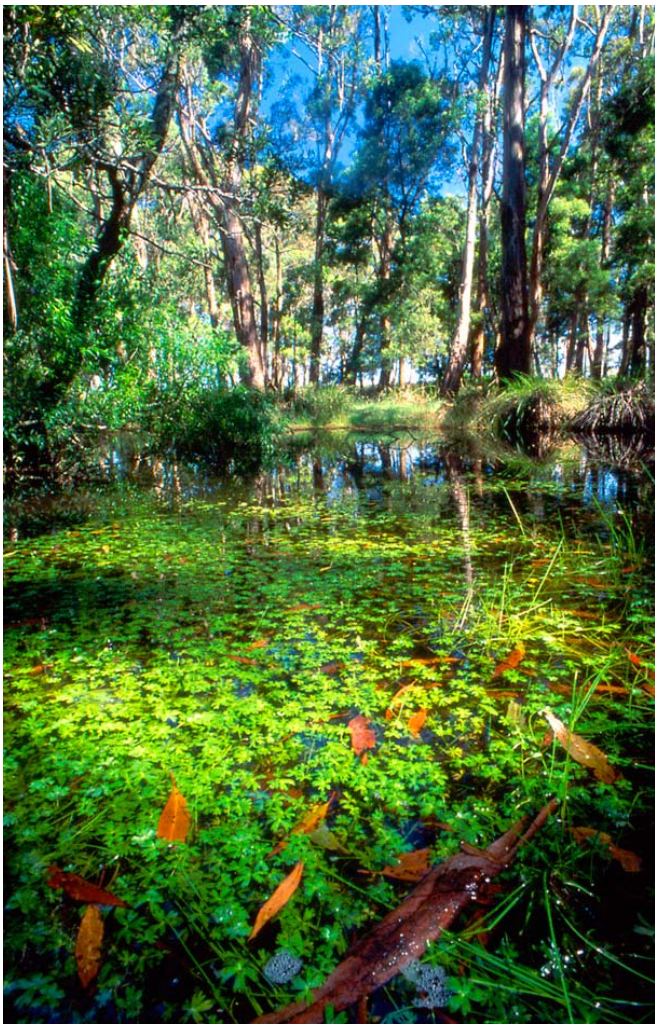

Image 1: The swampy origins of the Moorabool River.

Image 2: The Moorabool's severely modified catchment.

The original wetlands and riparian woodlands of the Moorabool's headwaters and upper catchment were once dominated by swamp gums *(Eucalyptus ovata),* manna gums *(Eucalyptus viminalis)* and blackwoods *(Acacia melanoxylon).* A few remnant tracts still remain (see image 1). However, as one wanders a little downstream, the condition of the river, the riparian area and overall catchment rapidly deteriorates. Here the river traverses a worn and parched landscape, laid desolate largely through human exploitation. The sparkling gurgling headwaters, sounds of bird and frog calls, and shady riparian areas, sadly, largely disappear (see image 2).

European settlement has led to dramatic modification of substantial areas of the Moorabool River catchment, with most of it having being intensively cleared for agriculture (see image 3). The so-called early river 'management' and 'improvement' projects saw the removal of woody debris (which serves as vital aquatic habitat), channelization and damming of the river for agriculture and urban development – all of which contributed to the river's degradation. Only part of its Wombat Forest-sheltered headwaters and a few restricted reaches (e.g. between Lal Lal reservoir and Sheoaks Weir) have retained some of their environmental values. The river is considered one of the most severely flow stressed waterways in the state, flowing at less than three percent of its average rate last winter.

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Further downstream the river traverses a fully agricultural catchment which was once a mosaic floodplain of grasslands, billabongs and red gum *(Eucalyptus camaldulensis)* forests. Fortunately some fairly intact areas of remnant grasslands still exist. In some reaches the river features a series of billabongs which provide important native fish and platypus habitat. However, flow stress resulting from water diversion further upriver has had dire impacts on the lower reaches. At the end of its journey the Moorabool River disappears beneath the concrete landscape of Geelong, out of sight and largely out of mind, where it enters the Barwon River – totally unrecognizable from its origins.

The river's journey and story are not dissimilar to those of many rivers throughout the state, the country, indeed the world. However the old adage is true that we can't judge the mistakes of history with today's eyes. Rather, we must use the understanding and great wealth of information now available to act in attempt to repair past errors.

Water Issues and Environmental Flows

Dramatic catchment modification and subsequent loss of vegetation have been the cause of most of the Moorabool's problems. Native vegetation removal has triggered a myriad of issues including increased salinity (at times exceeding 1200EC); increased sedimentation and inputs of nutrients and chemicals due to greater run-off; reduced shading and subsequent increases in water temperature; loss of organic input and weed invasion (especially willow infestations). There are also more than 15 on-stream storages which form barriers to native fish migration. The Moorabool's flow regimes have been highly regulated for urban water supply for Geelong and Ballarat which consume approximately 70 percent of the total flow (CCMA).

Image 3: Degraded agricultural areas in the mid reaches of the Moorabool.

Due to the stresses of water harvesting for urban and rural supply, as well as several years of low rainfall, the river doesn't receive the required environmental flows (from releases from Lal Lal and Bostock Reservoirs) to sustain a healthy ecology. As a result, many reaches of the river don't have continuous flow but just a series of weed-choked stagnant pools, with little habitat connectivity between reaches. Some reaches (such as those between Batesford and Fyansford) haven't flowed for several years. This shortfall in environmental flows is believed to be in the vicinity of 20,000ML. Even when the river does receive flows, controlled releases of water from reservoirs are often problematic as they reverse natural seasonal flow, temperature and sediment transport regimes. This can subsequently have negative effects on native fish and invertebrates, many of which rely on temperature cues for reproduction.

So in a nutshell, the situation for the Moorabool is not looking good, but fortunately there are some devoted advocates trying to change this situation.

Fighting for the Moorabool

There has been an ongoing battle over the amount of water being released from Lal Lal Reservoir for environmental flows. Among the dedicated defenders who are constantly fighting to improve its health are 'People for a Living Moorabool' (PALM) who are attempting to increase awareness of the river's poor condition and lobbying for actions to improve its health. Another initiative, The Moorabool Gorge Recovery Program, was established in 2001 to provide incentives for works to improve water quality. Among its many achievements include the protection of over 460 hectares of remnant vegetation, the riparian enhancement of over 48km of waterway and the revegetation of 662 hectares with over half a million seedlings planted (see image 4). Waterwatch and Landcare groups are also working toward monitoring river condition and initiating programs for environmental improvements. However, for any of these initiatives to succeed, it is absolutely imperative that the river receives its desperately needed environmental flows.

On a broader scale, environmental issues,

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especially that of water shortage are finally receiving some national focus and attention and it seems that most Australians now consider climate change (which has replaced terrorism!) as the most dire and urgent issue in Australia. 'Water literacy' is the buzz phrase of the last decade which describes this new awareness (of some) about water issues. This goes deeper than reciting rainfall and flow statistics and embodies a more comprehensive understanding of the ecology of connections between rivers, catchments, groundwater, people, history, climate, environment etc..

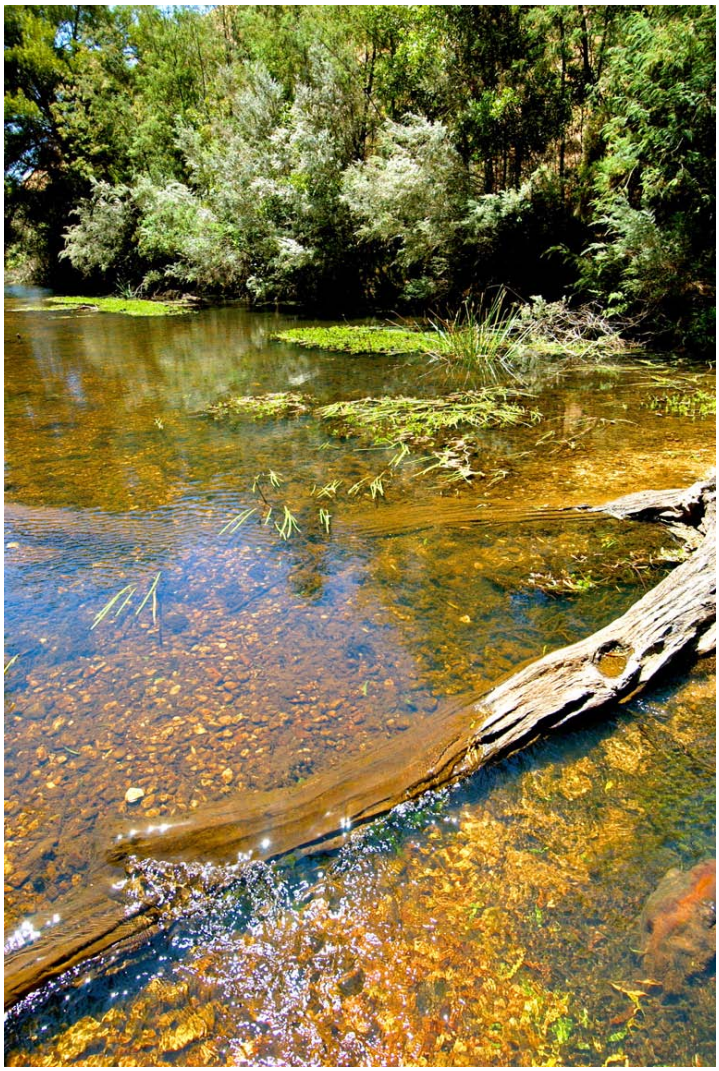

Image 4: Riparian rehabilitation works of the Moorabool Gorge Recovery Program near Morrisons.

However, mention the Moorabool River to someone on the street in Melbourne and there's a good chance they won't have heard of it, let alone know where it is, or of its decline. It seems only those living in the near vicinity and directly affected by it are aware of the severity of the problems. Education is always the key and further publicity, education and action are required if the river's environmental values are to be restored. Only through informed and dedicated action is there hope that the Moorabool will one day be removed from the state's most stressed rivers list.

There has been ongoing discussion as to how to effectively convey environmental information to the wider community and how to unite the various communities along the river's length in an effort to fight for the river's integrity. The answers unfortunately are both complex and elusive but creating awareness of the issues with solid information as well as catching people's imagination, enabling them to express their feelings for the river (whether, for example, this be via an arts project or ceremonial activity) are all a part of the process. The aim is simply to get more people informed and involved, to make a connection between the river and the people, to nurture a relationship, to renew kinship with the river.

In addition to acquiring knowledge, creative approaches and rituals can serve as a bridge to connectedness, focusing energy, purpose and obligation towards the river's restoration and maintenance. Whatever the approach, the hope is that through increased understanding and connection, changes in attitudes and behaviour will follow.

The PALM group, local Field Naturalist and Landcare groups along the river's length occasionally hold walks, talks and other events. So if you're interested to see some of the river's dramatic gorges and shady swimming holes, as well as the progress of rehabilitation works, check out the links below.

PALM
http://palm.mooraboolriver.org/
Geelong Field Naturalist Club
http://home.vicnet.net.au/~gfnc/
Landcare
www.landcarevic.net.au
Moorabool Gorge Recovery Program
www.ccma.vic.gov.au

Alison Pouliot **www.alisonpouliot.com** ■

Newsletter articles (and suggestions) are always most welcome. Please limit articles to about 500-800 words and send a selection of photos if it's appropriate for the article. For more information please contact **Tibor Hegedis** by emailing to **newsletter@wombatforestcare.org.au**

For help with orphaned or injured animals, please call the 24 Hour Wildlife Emergency Number on **13 000 WILDLIFE** (that's **13 000 94535**) or Hepburn Wildlife Shelter on **03 5348 3932**

VEAC (Victorian Environmental Assessment Council)

By Gayle Osborne

Many of our readers will come across references to VEAC (the Victorian Environmental Assessment Council) and I thought an article on its history and the vital role this body plays in the conservation of the natural environment would be timely.

The story starts in the late 1960's and early 1970's with the Minister for Lands, the Hon Bill Borthwick in the State Liberal Government. The government had been embroiled in a prolonged dispute over a proposal to convert 80,000 ha of the Little Desert to farmland.

In response, Borthwick created the Land Conservation Council in 1970. The Act allowed for the preservation of ecologically significant areas, and in his welcoming speech Borthwick said that the Council's historic responsibility was to make recommendations on the use of public lands "as if for a thousand years". The aim was to take "the future use of public land out of the realm of political and emotional argument, and place it in the hands of a competent, technically qualified body".

Borthwick also introduced important consultation requirements into the process: allowing for information collected through the Council's processes to be made accessible to interested parties so they could "make rational, constructive suggestions to the Council."

As Victoria's first Minister for Conservation from 1972 to 1979, Bill Borthwick was responsible for declaring twenty additional parks, including four National Parks. He also founded the Victorian Environment Protection Authority.

"The Land Conservation Council was to provide a unique framework free from political intervention, where experts could debate public land use issues and recommend fair and balanced public land use, enshrining a representative reserve system for Victoria's remaining natural heritage." (VEAC website)

The LCC was replaced with the Environment Conservation Council in 1997. Two major investigations under the ECC were the Box-Ironbark Forests and Woodlands Investigation and the Marine Coastal & Estuarine Investigation.

"In 2002 the Victorian Environmental Assessment Council was established to provide independent and strategic advice to the Government of Victoria on matters relating to the protection and ecologically sustainable management of the environment and natural resources of Victoria's public land." (VEAC website)

Sticky Everlasting, *Bracteantha viscosa (photo by Tibor Hegedis)*

Since 2002, VEAC has carried out the Angahook - Otway Investigation, the Goolengook Forest Investigation and the River Red Gum Forests Investigation.

All three bodies have made recommendations to the government regarding the establishment of national and other parks, recreation, grazing, logging, and the recent River Red Gum Investigation which also considers management agreements with traditional owners and environmental water flows.

The government then decides which of these recommendations it will proceed with. Recently the government accepted most of VEAC's River Red Gum findings and will proceed with four new national parks.

One of VEAC's current investigations is to look at the smaller parcels of Crown land and public authority land outside of largely-intact landscapes across Victoria to identify opportunities for ecological linkages. Basically looking at these smaller parcels of public land, of which there are thousands, and how they can contribute to improved ecological connectivity. This leads into the current thinking on revegetation – "Biolinks" which connect existing native vegetation and the natural regeneration potential is maximised, major ecosystem functions can be accommodated and movement of species is possible.

VEAC plays such an important role in the protection of public land however there is the balancing act of economic and social interests and the process is slow. The impacts of vegetation clearing and biodiversity loss on private land are not covered by this body.

It will be of interest to our members that in 2002

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the ALP promised to "Provide a reference to the Victorian Environment Assessment Council to recommend boundaries and requirements for the future management of the Wombat forest as a mixture of State Park and Community Forest Reserve."

In response to our committee's letter to the Minister for Sustainability and Environment we were informed that "At this stage the Minister has determined that there are a number of other investigations that have higher priority."

Given the importance of the Wombat Forest as a biodiversity refuge we consider that this forest should be managed for its conservation values rather than the production of resources.

For more information go to the VEAC website at **http://www.veac.vic.gov.au** ■

Sugar Glider and Squirrel Glider

By Gayle Osborne

Sugar Glider sitting on branch. *(photo © Pavel German)* from Australian Museum website. See www.australianmuseum.net.au

Sugar Gliders *(Petaurus breviceps)* are a hollow dwelling, gliding mammals with an average body length of 170mm with a tail 190mm long. The back is grey with a small dark stripe from between the eyes to the mid back. The belly is cream and the tail is grey to black sometimes with a white tip.

This beautiful agile creature is common in forests in Victoria (including the Wombat State Forest) if there are sufficient tree hollows and abundant food such as gum produced by acacias, nectar and pollen, certain eucalypt saps, invertebrates and invertebrate exudates.

The gliding membrane is attached to the foot and the wrist and spreads like a parachute as they launch. They can volplane up to 60 metres, change direction during flight and with an upward swoop land with four feet on a tree, preferring rough bark on which to cling.

Sugar Gliders live in social groups of up to seven adults and their young sharing the nest in the hollow and will aggressively defend their food source against phascogales and possums.

The female usually gives birth to two young who remain in the pouch for about 70 days and spend a further 40 days in the nest before venturing out at which time they are very vulnerable to predation by owls and kookaburras.

Some years ago I found an animal tail on our property in the Wombat Forest and as it did not seem to belong to a possum I sent it to Barbara Triggs for identification. Barbara examines animal hairs under a microscope and is one of the leading identifiers in the State.

The tail had been neatly clipped from the body and Barbara has identified it as a Sugar Glider. The likely scenario is that the glider was taken by a large owl as they are the primary predators of gliders and in this case probably a Powerful Owl as a feather recently found on the property has been identified. The tail is commonly snipped and discarded being largely fur and bone and therefore has little food value.

While researching this article I was shocked to find that Sugar Gliders are popular exotic pets in some American states and the United Kingdom. In the USA, where there are many breeders and they have been pets for over fifteen years it is believed there are over 50,000 in captivity. The source of these animals is unknown, however American zoos sell on surplus stock to breeders or they may have come from natural populations in New Guinea.

According to the multitude of websites they make wonderful pets, bonding well with their owners, usually kept in pairs and their diet is the subject of much discussion. They must be so hardy to survive life in a cage in a residential dwelling and I was glad that the keeping of native animals as pets is illegal in Victoria. Sugar Gliders are active agile creatures and require space to volplane and run around, their diet is specialized and they need to constantly mark territory with their scent.

The capacity of the Sugar Glider to be bred as a pet and live away from its natural habitat points to its

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ability to adapt and this is a positive for its survival. The Squirrel Glider is the larger cousin of the Sugar Glider and is now listed as endangered in Victoria.

The two gliders are similar in appearance and markings and dietary requirements. Squirrel Gliders are also hollow dwelling and are nearly double the size of the Sugar Glider, their average body length is 210mm with a 270mm long tail and can also volplane up to 60 metres. They nest in smaller social groups usually comprising of an adult male, two females and their offspring.

In Victoria the Squirrel Glider *(Petaurus norfolcencis)* inhabits dry sclerophyll forests and woodlands and their range may overlap with the Sugar Glider, however the clearing of woodlands, particularly the rich and fertile areas for agriculture has severely impacted on their on their populations and they appear to be less able than the Sugar Glider to adapt. Squirrel Gliders are now present in only a few large reserves and small patches of woodland habitat such as roadsides.

Squirrel Gliders are found in the Box Iron Bark forests to the north of the Wombat Forest and there are also populations in the Grampians. These two gliders are so closely related that the two species have been interbred in captivity producing fertile young. Why is one so adaptive and the other endangered? Is it only habitat destruction?

References:
Gliders of Australia, David Lindenmayer
ISBN 0-86840-523-X
The Mammals of Australia, Ed Ronald Strahan
ISBN 187633488-6 ■

What's Wrong with Willows?

By Murray Ralph

Willows *(Salix spp.)* occur along many rivers and creeks in temperate Australia. Certain species are very invasive and can form dense thickets. Most species that occur in Australia are listed as weeds of national significance. So what's wrong with willows?

Thickets tend to grow into the stream channel blocking water flow. This exacerbates flooding and erosion. Willow thickets and the roots of willows also trap sediment leading to changes in stream structure and the flow capacity of water.

Willows use large volumes of water. Research by CSIRO indicates that a kilometre long stretch of willows will use up to 8 megalitres per year. This water use occurs over the summer months when water is a scarce resource. A range of studies demonstrate that willows do not come close to providing the ecological benefits of native vegetation.

Inputs of leaves, dead flowers, buds, fruits and twigs are a large factor in the maintenance of aquatic food webs. Native plants tend to supply these types of 'inputs' all year round, thereby providing a year-round supply of food for a wide diversity of stream life. Willows on the other hand, drop leaves in autumn on mass and these decompose very rapidly, providing food for a short period each year.

The annual mass drop of leaves from willows can also reduce oxygen levels in the water as they decompose very quickly. Reduction of oxygen levels negatively affects the ability of aquatic life to survive and flourish.

Twigs, branches and logs provide shelter for a diverse range of native aquatic species, including native fish. The twigs, branches and logs of Willows tend to break down relatively quickly compared to those of Eucalypts, thereby reducing a critical habitat element.

Willow trees tend to support far less bird diversity, with very few native birds feeding or nesting in willows. Insect and bat populations also tend to be lower. Small trees, shrubs, grasses and other ground flora species often cannot grow in the dense shade and canopy of willows further reducing habitat and aquatic food webs.

The control of willows needs a planned, gradual removal and replacement with native species which is more likely to succeed than an intensive removal with little or no follow-up. ■

Sandy's Owls...

Photographer Sandy Scheltema was thrilled recently to find this pair of Powerful Owls in residence near her property in Trentham. A pair of owls roosting so closely together is likely to have been breeding.

The Importance of Native Vegetation on Roadsides

By Emerald Dunn

Roadside vegetation has received a lot of heated debate recently with the severity of our bushfires reaching the official "catastrophic rating". Understanding how significant a roadside verge is, and when it may be appropriate to clean it up is complex.

Firstly let's look at the surrounding landscape. Is it cleared land for agriculture or industry? Is it on the edge of a recently degraded ecosystem that has been logged or burnt every few years? Or is it a small piece of remnant vegetation in a rural-residential area?

In many cases, the loss of biodiversity in the areas surrounding roadside vegetation is very high due to a range of impacts. Due to this roadside verges often have flora species that are not represented on the adjacent land or the surrounding area. Large old trees are also common on roadside verges, but scarce in the broader landscape.

Roadsides may also contain seeds of native species that may be dormant in the soil, waiting for the right conditions to sprout. Conditions that may not have occurred for over a decade due to drought, climate change, changes in the soil structure or biota, or even associations with other plants, organisms or fauna (who deliver seeds and nutrients to the soil). These seed banks can be used to secure the populations of plants and for future regeneration activities.

Native vegetation on roadsides can also prevent soil erosion, reduce storm water run-off and reduce fire fuel hazards. Disturbing the soil may lead to the introduction of weeds which once established are very difficult to remove. Many species of native grasses remain at a manageable height and do not dry out to the extent that occurs with exotic grasses. They also assist in preventing the spread of weeds such as gorse, blackberry, broom and phalaris, all of which are a major fire hazard.

Sticks, twigs and leaf litter is also termed 'Coarse Woody Debris' and is important for many Australian species of mammals, birds, insects and reptiles who use this habitat for nesting, shelter, foraging, food sources and to move around on the forest floor.

The North Central Catchment Management Authority (NCCMA) has published 'Guidelines for Managing Roadsides." These guidelines include seeking approval and advice from relevant authorities if you need to undertake works on your roadside. The first contact is your local council. Other guidelines include reporting weeds, pest animals and illegal disturbance to roadside vegetation.

In some cases signs have been erected to identify areas where there are rare or threatened species these include: 'Significant Native Vegetation', 'Significant Roadside Area' or 'Biosite' signs. Not all areas of significance have been signed accordingly so it is best to make sure. You may need a planning permit to undertake works on the roadside and there is legislation in place to protect these areas including:

Flora and Fauna Guarentee Act 1988
Planning and Environment Act 1987
Environment Protection and Biodiversity Conservation Act 1999
Catchment and Land Protection Act 1994
Country Fire Authority Act 1958

References:

Guidelines for managing roadsides (NCCMA),
Protection of native Vegetation on roadsides (Native Vegetation Steering Group)

Good example of roadside vegetation. *(photo by Murray Ralph)*

Wombat Forestcare (Inc.) Membership

Wombat Forestcare Inc. is dedicated to preserving the biodiversity and amenity of the Wombat State Forest by utilising the skills and resources of the community. It will monitor activities affecting the forest and will work with government departments and their officers to improve or correct procedures which may impact on it. By becoming a member you will have input into our activities and projects, and give support to caring for our forests. For memberships and further information contact Gayle Osborne, phone: 03 5348 7558 or email: info@wombatforestcare.org.au - Membership Fees are only $10 Single and $15 Family.