ROADSIDES
... the Vital Link

Because WA's roadside reserves are often the nearest our developed landscapes have to a natural environment, these tracts of land are much more than a vital link to the past; they are a source of hope for the future.

by David Lamont

In Australia, more than 870 000 kilometres of roads (that's over 40 times the circumference of the Earth at the equator) have been established since European settlement. More than 19 per cent (171 389 km) of this vast network is found in Western Australia, and falls under the control of three agencies: Local Government Authorities (123 908 km), the Department of Conservation and Land Management (CALM) (30 155 km), and Main Roads WA (17 326 km).

The first function of a road has always been as a transport corridor. In the past, road builders paid scant heed to anything but the formed surface, and roadside verges were simply the pieces of land left over after the road was made. More recently, roadside verges have come to be recognised as valuable wildlife habitats. In the early 1960s, the then Premier and 'father of roadside conservation' in WA, David Brand, initiated a policy of creating wide road reserves, wider than needed for road establishment alone. Brand suggested a minimum width of 200 metres, and that the extra area be dedicated to the preservation of indigenous flora.

There are now an estimated 408 000 hectares of WA road reserves not used for the prime functional value of transport, which is equal to an area about four times the size of Stirling Range National Park.

While national parks often gain their diversity from being located over unique landscapes, road reserves often contain a significant proportion of the overall biodiversity in an area due to their linear extension across different habitats in the landscape. They act as wildlife corridors and are valuable for conservation, landcare, culture, history, agriculture, recreation and tourism. Clearly, these areas hold enormous potential.

Unfortunately, this potential is all too often neglected. The most readily accepted value of roadsides tends to be their functionality—they provide a corridor for utility services such as water and gas pipelines, telecommunications and electricity transmission lines, as well as areas for stockpiling roadmaking materials, and space for road construction and maintenance projects.

OUR HERITAGE ON DISPLAY

But roadsides often contain significant sites of cultural, historical and heritage value, which contribute to the sense of place or identity of a region. Our mental, emotional and physical well-being is enhanced by our appreciation and understanding of our surroundings—and our surroundings are appreciated by many.

Heritage trails, such as Yaberoo Budjara, which links Yellagonga Conservation Park near Joondalup with Neerabup and Yanchep National Parks, are often located on roadsides. They enhance the tourist experience with photographic or bushwalking opportunities, and offer an insight into the local plants and animals.

Visitors flock to WA in their thousands to see our wildflowers.

In a 1989-90 survey of tourists staying in commercial accommodation in WA, it was found that 18 per cent gave wildflower sightseeing as a reason for their stay. And because our roadside reserves are often the only exposure that travellers have to the world-renowned flora of Western Australia, roadside vegetation is important to our wildflower tourist industry.

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Roadsides—a legacy of the past and our responsibility for the future.
Photo – Bill Bachman

Above: Visitors travel from around the world to experience the unique beauty of WA flora.
Photo – Ann Storrie

Left: The often harsh environment of WA's hinterland yields to the ephemeral beauty of carpets of everlastings.
Photo – Len Stewart/Lochman Transparencies

While it is impossible to put a price on the 'wildflower experience', the survey did find that visitors had a daily expenditure of $88.33 per adult. Since this figure can only have increased in the past seven years, there is obviously a sound economic incentive at local and regional levels for managing roadsides in a sustainable manner. Just as obviously, mismanagement of roadsides will quickly erode this potential cash flow.

LANDCARE

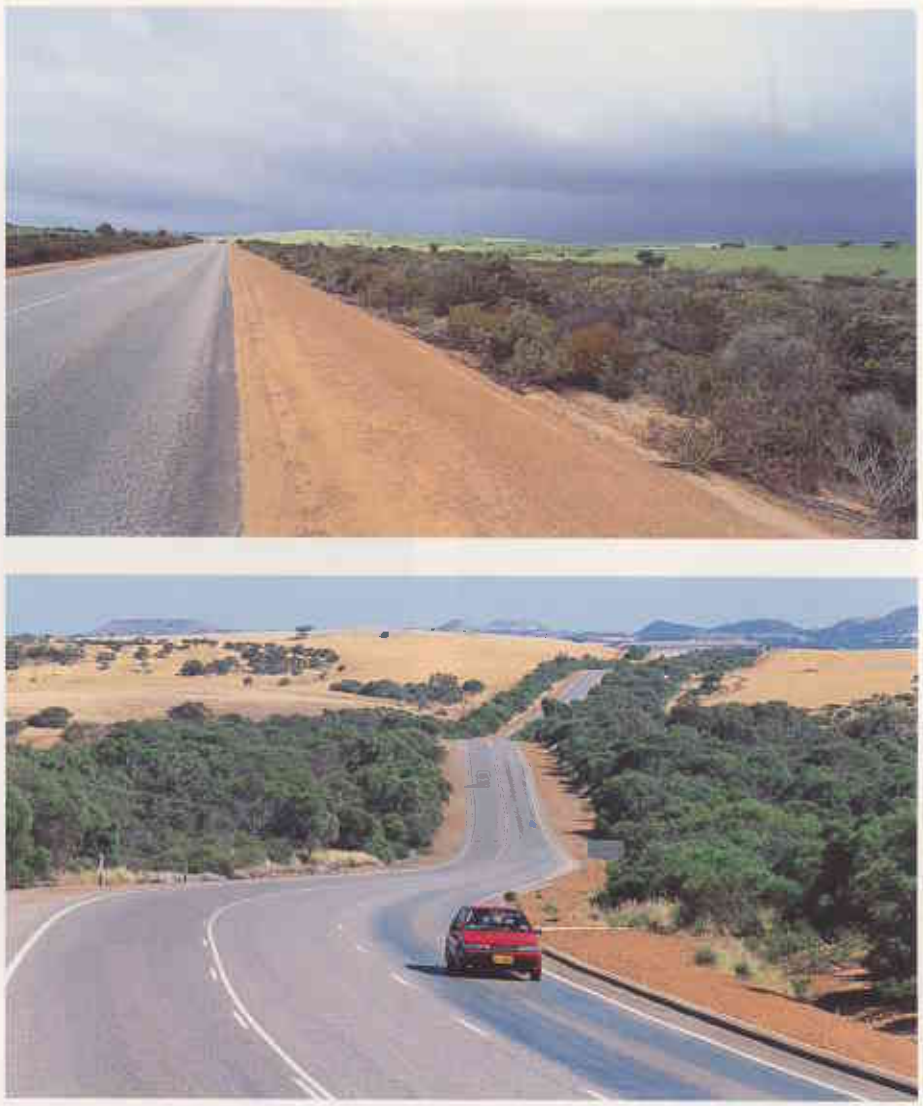
The value of well-vegetated roadsides to agriculture cannot be over-emphasised. They provide valuable windbreaks for both stock and crops, and have the potential to increase farm productivity in a number of ways: reduction in evaporative losses from crops; stabilisation of soil and air temperatures and humidity; reduction of heat and cold stress in stock; and the reduction in damage to plants from 'sand blasting'.

Many of the current farming problems such as the salination of land and water assets result from inappropriate European farming practices having been applied to an Australian landscape. Maintaining remnant roadside vegetation will play an important role in combating this major problem, both through the benefits to be gained from retaining the *in situ* vegetation, and also for providing a local seed source for revegetating adjacent land.

By studying the roadside reserves —areas that have often had minimal disturbance and provide an insight into the pre-European soil strata and understorey composition—we can observe which species of plants grow in which particular type of soil. Roadside reserves are often the nearest we have to pristine conditions in heavy cleared areas, and seeds collected from local native species (with an appropriate licence issued by CALM) are playing an increasingly important role in regenerating degraded farmland.

CONSERVATION

Often, roadsides provide the last refuge for species of plants that have become extinct in other locations. The mass clearing of native vegetation has also resulted in habitat fragmentation with small, discontinuous and isolated pockets of natural vegetation. Along with river and stream reserves, roadsides are a vital link between these pockets, and it is imperative they don't become the missing one. This is particularly true in agricultural areas, where up to 98 per cent of some landscapes has been cleared.



Top: Roadside vegetation is often the only remaining natural vegetation in some parts of WA's Wheatbelt.
Photo – Eva Boogaard/Lochman Transparencies

Above: Remnants on roadsides can provide movement corridors for wildlife by linking fragments of habitat.
Photo – Dennis Sarson/Lochman Transparencies

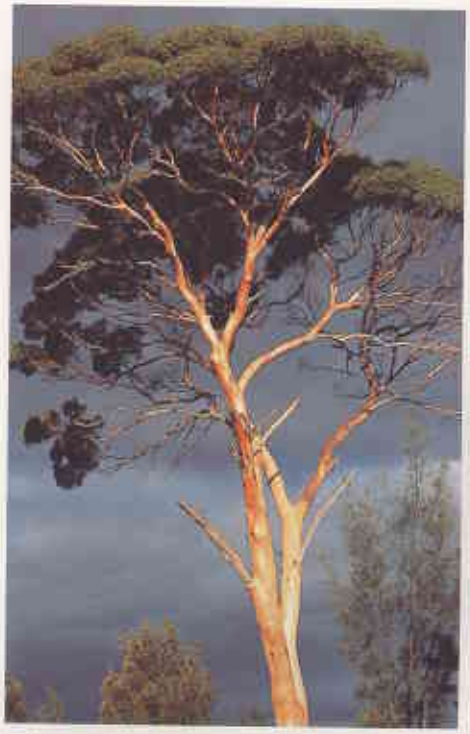
Currently, 321 plant species are declared as rare (threatened) under the Wildlife Conservation Act 1950-1979. Of these, more than 100 are known to have roadside populations. In fact, roadside plants represent more than 80 per cent of the known populations of 40 of the 'declared rare' species, and three of these are known only to exist in roadside populations.

Only a few years ago, the one-sided bottlebrush *Calothamnus accedens* vanished in a cloud of dust. The last known population of this WA Wheatbelt species was wiped out by a grader driver during roadworks and, barring a miracle of rediscovery, we won't ever see it again. At this point, we don't know how many other roadside populations of plants or animals will disappear, but we do know that nature is like a jigsaw puzzle: you take one part out, and there will always be a hole in the picture.

Two examples that illustrate the importance of roadside conservation are the plight of Carnaby's cockatoo and Goomalling Shire's weed problem.

CARNABY'S COCKATOO

Carnaby's cockatoo (*Calyptorhynchus latirostris*) breeds in the Wheatbelt region of Western Australia. In recent years, however, the populations of this



vocal visitor to many Perth suburbs has declined significantly—a decline that can be directly attributed to the loss of more than 30 per cent of its habitat since the 1960s. Land that supported salmon gums (*Eucalyptus salmonophloia*), the preferred nest sites of Carnaby's cockatoo, was considered to be the most suitable for agriculture and, as a consequence, has been extensively cleared.

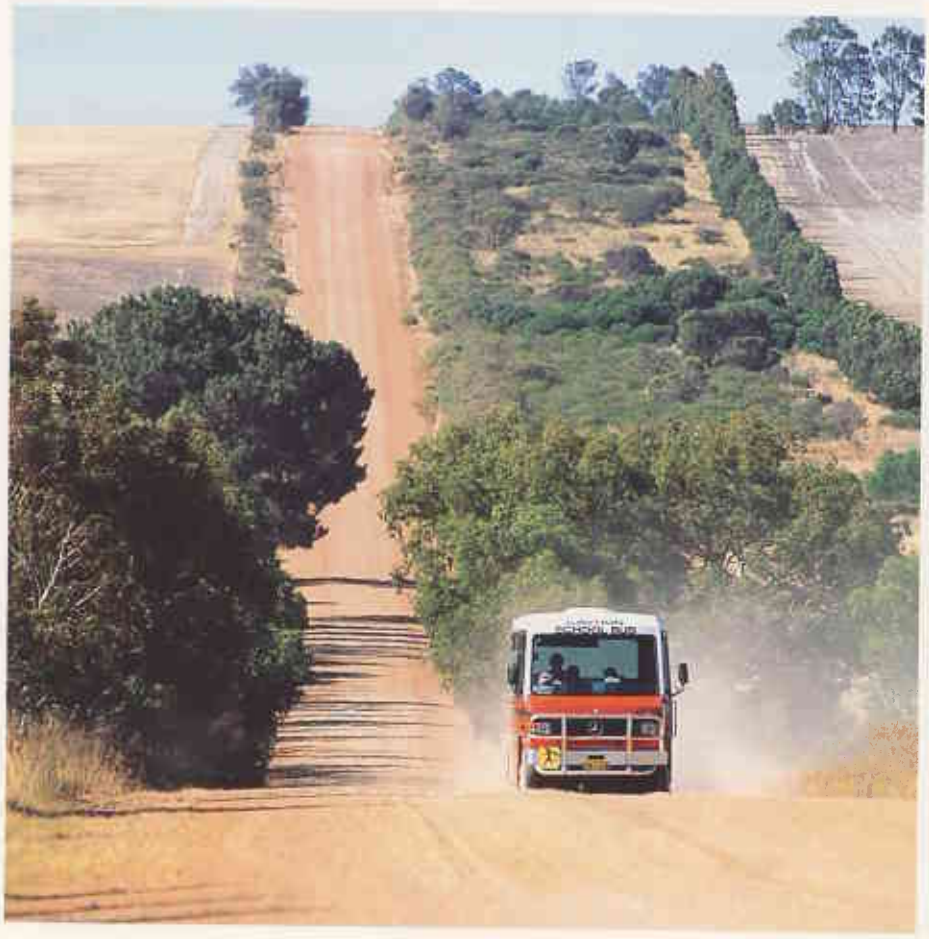
In April 1996, Carnaby's cockatoo was listed as 'rare or likely to become extinct' due to its declining population, continued loss of habitat, and being taken from the wild illegally. While Carnaby's cockatoo is now fully protected in WA, the effects of salination on much of the remaining vegetation further threaten the loss of the bird's habitat. Most salmon gums now exist on roadside reserves in many areas of its habitat.

Last year, CALM staff monitored 70 Carnaby's cockatoo nest sites in the northern Wheatbelt: a region containing woodland remnants that are a mixture of salmon gum, wandoo (*Eucalyptus wandoo*) or morell (*E. longicornis*). The fieldwork revealed the cockatoos always nested in salmon gums when they were available. But when they were not, wandoo trees were used as a nesting site. The monitoring program also identified several important breeding areas that are not on land managed by CALM and, therefore, possibly not adequately protected. Of the 70 nest trees monitored, 34 per cent were on private property, nine per cent on shire reserves and 56 per cent on road and rail reserves. Clearly, the retention of these nest trees on the road and rail reserves is critical for the long-term survival of the Carnaby's cockatoo.

GOOMALLING CASE STUDY

Goomalling is located 132 kilometres north-east of Perth. European settlement of the area has resulted in the clearing of large areas of native vegetation. Only six per cent of the Shire remains covered by its original vegetation, with the vast majority (5.4 per cent) on private land. Most of the road reserves are in a degraded state with heavy infestations of weed species.

The involvement of the local community is vital to the conservation of roadside vegetation. In Goomalling, the local Land Conservation District Committee (LCDC), the Goomalling Shire and the Roadside Conservation



Above far left: Salmon gums are the preferred nest trees of Carnaby's cockatoos.
Photo – Jiri Lochman

Above left: Carnaby's cockatoo is in decline due to loss of suitable habitat.
Photo – Bill Belson/Lochman Transparencies

Left: Local Government authorities are responsible for more than 123 000 km of roads, with a greater proportion of them being unsealed.
Photo – Dennis Sarson/Lochman Transparencies

Committee (RCC) worked together to determine the extent of resources required to tackle the weed problem and implement a systematic method of control on roadsides.

After training by the RCC, the Shire of Goomalling and the local LCDC set about surveying roads in their Shire for weed cover as well as conservation values. The survey revealed that of the roadsides in Goomalling Shire, 55 per cent had high weed infestation, 36 per cent medium infestation and only nine per cent had a low infestation.

It is believed that this is the first time such a comprehensive survey of weed infestation of roadsides has been attempted in Australia. It highlights what can be achieved with a high level of cooperation between government agencies, shires and community groups (in this case CALM, the RCC, Main Roads WA, Agriculture WA, the local LCDC and Goomalling Shire).

ROADSIDE SURVEY PROJECT

Perhaps the most important initiative to date of the Roadside Conservation Committee has been its general survey of roadsides for conservation values. This task, which was initiated in 1989, records a number of attributes on road reserves—width, diversity of vegetation, numbers of native species present, extent of weed cover, adjoining land use etc—to produce a 'conservation score'. These scores are used by road managers to establish which areas need priority attention or protection.

Each community has its own reasons for embarking on the roadside survey, and the resulting maps are used for a variety of projects. The Serpentine-Jarrahdale Shire aimed to modify their roadside burning regime; the Boyup Brook Shire wanted a general roadside inventory.

The beauty of the survey lies in its simplicity and adaptability, enabling people with little botanical expertise to participate. It can be tailored to suit such subjects as biodiversity conservation, landcare, local planning for tourism and even weed control. The most recently completed survey was in Goomalling Shire, but others are under way and the RCC survey method has attracted nationwide interest.

Edna Walling, watercolour artist, landscape designer and an early advocate of roadside conservation, would have approved. She once said that:

> 'Before much more burning off and bashing of the roadside growth by earthmoving machinery takes place, we might awaken to the realisation that here on the roadsides are the most valuable and accessible nature reserves we have—reserves which make Australia the country we love—and that there is no more logical place for the presentation of our natural plants than along the roads we travel.'

Her words are perhaps more pertinent today than when spoken almost fifty years ago.

THE ROADSIDE CONSERVATION COMMITTEE

In 1969, the Road Verges Conservation Committee was formed by the Western Australian Government to coordinate and promote the conservation and effective management of rail and roadside vegetation—for the benefit of the environment and the people of Western Australia.

In 1985, the Committee was reformed as the Roadside Conservation Committee (RCC) with some important changes, these being a full-time Executive Officer located in CALM's Wildlife Branch, and funding from Main Roads WA (MRWA) and the Department of Conservation and Land Management (CALM). The RCC comprises 13 members representing relevant agencies and the community: CALM, MRWA, Westrail, Agriculture WA (AgWA), Bush Fires Service, Western Power, Alinta Gas, Water Corporation, Local Government (two elected Councillors and one professional officer), Greening Western Australia and a community conservation representative. Dr Ken Atkins, Principal Botanist at CALM, currently chairs it.

The objectives of the RCC are to promote the protection and enhancement of native vegetation on rail and road reserves; to provide information to government and the community on the importance of rail and roadside vegetation; to develop an understanding of the ecological processes controlling roadside vegetation; and to facilitate communication between various agencies and community groups involved or interested in roadside management. It is anticipated that this will enable better methods of planning and management of these areas to be devised.

Mulla mulla along the Dooley Downs – Mt Augustus Track.
Photo – Bill Bachman

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LANDSCOPE

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CALM's fight against feral cats gathers ground on Peron Peninsula with the development and testing of a cat bait. See 'Approaching Eden' on page 28.

Roadside vegetation often provides vital links between remnant habitats. See our story on page 23.

A new CALM book gives bushwalkers a host of short and longer walks in Western Australia's south-west. See page 10.

What attracted early pioneers to this barren corner of Western Australia? Find out in 'Eucla Pioneers' on page 35.

Fire is an important part of Western Australia's environment. Scientists continue to discover just how important. See page 17.

FEATURES

REGULARS

COVER

The splendid fairy wren was one of many birds collected by John Gilbert, whose collections of specimens have been fragmented over the past 100 years or so. Now, they are being tracked down in museums around the world, and a more complete picture of their original distributions is emerging from Gilbert's original notes and labels. See story on page 40.

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