# On The Verge

From the very earliest days observant travellers in W.A. have marvelled at the strange beauty of the vegetation through which their roads passed.

Some of the early travellers were more observant than most. James Drummond, meandering beside his horses, saddlebags filled with plant specimens, was a remarkably acute observer and missed very little on his route. Neither did Marianne North in the 1890s, bouncing along behind borrowed police horses, carrying a sandbox filled with flowers picked en route to be painted each evening.

But not only botanists use the roads — everyone does. Visitor or resident, the bush growing along the roads is the bush we look at most. It is the display window on W.A.'s unique flora — a great tourist drawcard.

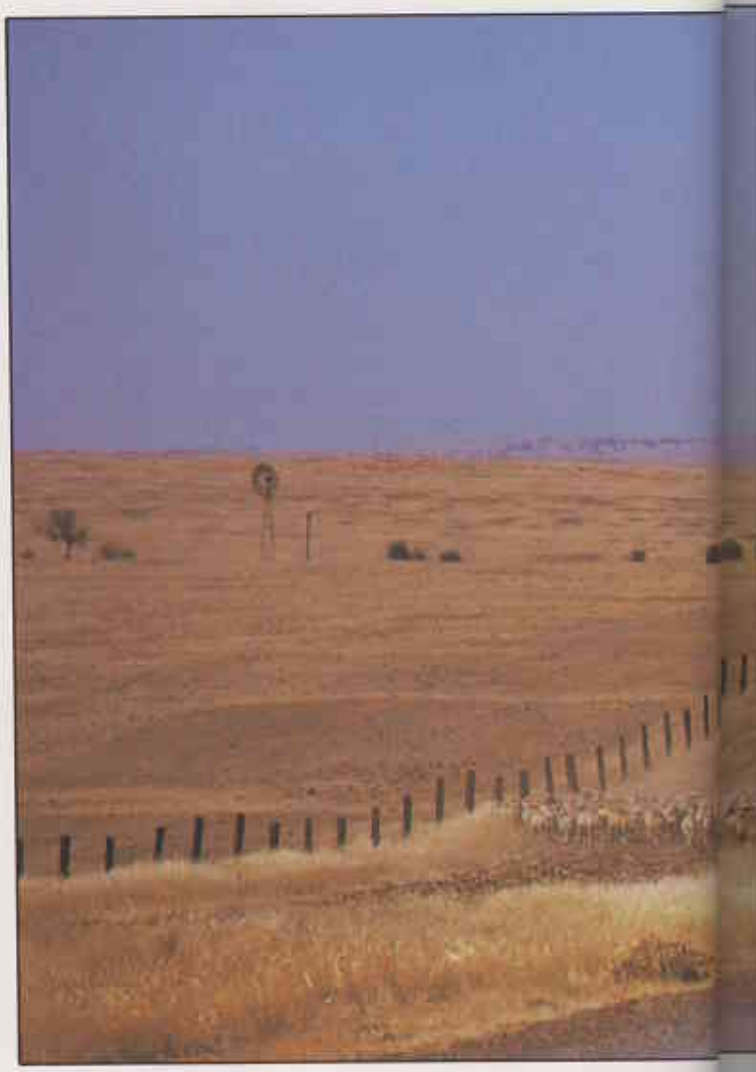
Increasing numbers of individuals and organised groups travel W.A. specifically to see the wildflowers. They bring welcome revenue into country areas. Almost without exception the flowers they look at are along the roads, so this important industry depends on attractive roadsides for its survival.

Rest areas or 'Roadside Flora Areas' could be provided at intervals along roads to allow travellers to break their journey and picnic in a natural environment. Areas could be chosen for their scenic attractiveness, their scientific or educational value, or their historical or heritage value.

Concern over the destruction of once-beautiful roadsides gathered momentum in the 1960s, as the pace of clearing in the agricultural regions accelerated. Once the bush was endless. Clearing for agriculture and other purposes seemed only to nibble at the edges. Then new developments in trace element nutrition and farming technology combined to make available vast new areas of previously unfarmable land. Huge swathes of bush suddenly disappeared. Worried about this destruction of vegetation, the Government set aside extra wide road reserves — 60 to 200 m — so that the land not required for a road could remain as a conservation area.

Now all that is left in many wheatbelt areas is a ruler-straight line of bush along a road reserve, a biological corridor, a green peninsula carrying native species through an alien sea of wheat. Occasionally this peninsula connects with islands — remnant patches of vegetation left amidst the agricultural land.

Studies of these remnants by the CSIRO, the W.A. Museum and others have shown that their



by Penny Hussey

The white-flowered Bindoon starbush *(Urocarpus nivea)* with *Hibbertia miniata*, another rare plant. Only 16 plants of the Bindoon starbush are known to exist, all on a road verge near New Norcia (right).

Nangetty (Dowerin).
On some verges, the pressures since European settlement have totally removed the native plants (below).

Penny Hussey

value for fauna is greatly increased if they are connected by a network of vegetation corridors.

This means that if we are to be serious about the conservation of W.A.'s natural heritage, we must protect not only national parks and nature reserves but the corridors which connect them.

Another fact of clearing is that many plants, once doubtless more widespread, now survive only in narrow roadside remnants.

In the genus *Daviesia*, for example, 14 species are considered to be endangered, and of these, six — almost half — occur exclusively on road verges.

*Urocarpus nivea* is another example. This species is known only from a population of 16 plants growing on a road verge in the New Norcia area. Careful management will be needed to ensure they survive. This year the greatest threat has been botanists' boots, tramping around looking for more plants!

Penny Hussey

Road verges are extremely important as a benchmark, to show what the land was like before clearing. Vegetation mapping is facilitated by studying roadside remnants, and the soil beneath them may retain its original structure and nutrient status, so that it can be used as a comparison with adjoining farmland.

Roadside vegetation is important also as a source of locally adapted plant material. It is beginning to be acknowledged that much of the agricultural area has been overcleared, and attention is being given to re-vegetation. To be most successful, such projects need to use locally adapted plants — especially if broadscale, no-maintenance seeding is to be used. Often, the only source of local seed will be from the roadside remnants.

As a consequence of agricultural clearing, erosion and salinity have increased in many areas of W.A. A well-conserved road verge provides both windbreak and shelter belt, and at no cost to the landholder.

Unfortunately, these benefits are often lost because of vegetation degradation caused by too frequent fires; fertilizer, herbicide, weed seeds — and sometimes soils — drifting in from the surrounding farmland; as well as insensitive road construction and maintenance.

Eventually, all that is left are flammable weeds which have none of the benefits of native vegetation but, instead, incur an annual cost for fire protection and weed suppression.

Admittedly, there are lots of pressures on road reserves. The first priority is a safe and efficient driving surface, and this may mean the removal of bush to provide drainage and to give better visibility, for example. As well, the road reserve is often a corridor for services such as telephones, electricity and water, all of which impose controls upon nearby vegetation.

Nevertheless, most road verges can be managed for conservation too. How can this be done?

Road and rail reserves are long corridors, which make them very difficult to manage for conservation. In general the best shape for reserve management is a circle which gives maximum area for minimum perimeter, since it is across the perimeter that most disturbing influences come. Roads are all 'edge' — very hard to deal with!

Primarily, verge disturbance must be kept to a minimum. Undisturbed native vegetation is reasonably resistant to weed invasion, but as soon as it is disturbed — by earthmoving machinery, increased fertiliser and herbicide drift from adjacent paddocks, or too frequent fires — the weeds, those opportunistic colonisers, take hold. They die back during summer, and so become a far more severe fire hazard than was the original bush.

Photo courtesy Main Roads Department

Wubin Mullewa
The importance of this northern wheatbelt corridor has been emphasised during surveys by the W.A. Museum. As part of its efforts for conservation the MRD has acquired a 10 m strip alongside the road (see right of photo) which it intends to revegetate and thus enhance the conservation value of the road verge.

A road verge burning policy which will be acceptable to all concerned, and allow for the regeneration of native vegetation, is vital. There must be a long enough period between fires for the shrubs to reach maturity and set seed — anything less, and even if they are capable of shooting from their rootstocks, those plants will eventually be eliminated.

It is encouraging to note that where burning has ceased, native vegetation is beginning to return. In the Shire of York, for example, the road verges are regenerating, several years after a burning ban was imposed.

The recent government decision to encourage landholders to set their fences back from the boundary should help, as now firebreaks and exotic shelter belts can be provided on the farmer's own land, instead of, as has often happened in the past, destroying valuable verge vegetation for these purposes.

Some corridors, even otherwise very degraded ones, may contain areas of significance — a 'Special Environmental Area'. It may be a population of rare flora, a unique hybrid, or the 'type locality' from which a new species has been described.

It is essential that such sites be marked, so that inadvertent destruction does not occur. The Main Roads Department (MRD), Westrail and some Local Government authorities use discreet markers to let employees know that the location is a special site, and that great care must be exercised when work is undertaken in the area.

As the clearance of areas of privately-owned native vegetation continues, the maintenance of the remnants on publicly-owned land, including road reserves and rail reserves, becomes even more essential. The further you look into the future, the more vital it becomes. □

Penny Hussey

Belka Flat — Bruce Rock-Merredin Road.
Road verges preserve remnants of the original vegetation which are important from an historical as well as conservation viewpoint (above).

Penny Hussey

Wongan Cactus
*(Daviesia euphorbioides)*
This declared rare plant is shown growing on the backslope of an otherwise totally degraded road verge.

## THE ROADSIDE VEGETATION CONSERVATION COMMITTEE

The Roadside Vegetation Conservation Committee (RVCC) was formed in 1985 in response to concern expressed by local communities, the tourism industry, and the conservation movement over the deterioration of roadside vegetation.

The RVCC is chaired by John Blyth of CALM, and has on it representatives of MRD, Westrail and Local Government — as well as other concerned organisations, such as the Department of Agriculture, Bush Fires Board, Greening Australia and other conservation interests.

It aims to promote the conservation and enhancement of native vegetation on road and rail corridors.

Some specific objectives are:

1. Producing an inventory of Flora Roads.
2. Developing guidelines and producing leaflets on specific issues involving road verges, e.g. gravel extraction, dieback, use of fire, site marking.
3. Updating guidelines for environmental assessment and advising on where and how they may be applied.
4. Funding research such as use of road verges by vertebrates, management of a roadside population of rare flora, and eradication of spot infections of dieback.
5. Recommending the creation of Roadside Flora Areas.
6. Acting as a liaison between road managers and botanists concerning the location and marking of rare flora.
7. Investigating and inspecting problem areas.

# LANDSCOPE

Volume 2 No. 4
Winter Edition/June 1987

## Contents



Published by Dr S. Shea, Executive Director, Department of Conservation and Land Management, 50 Hayman Road, Como, W.A. 6152.

Executive Editor: Sweton Stewart
Editor: Liana Christensen
Designers: Trish Ryder/Robyn Mundy

All maps by Department of Conservation and Land Management Mapping Section.

Offset plates by Photolitho-PM.
Typesetting by Printworks.
Printed in Western Australia by the Department of Services, State Printing Division. ISSN 0815-4465.



**COVER PHOTO**
Shipwreck at Broome (Jiri Lochman).

**EDITORIAL**

For more than 100 years W.A. has recognised the importance of protecting significant areas of its natural heritage.

Today, about 4.5 million hectares of our State is classified as national parks, vibrant natural museums ranging from the hardwood forests of the south-west to vast inland deserts that represent our unique terrestrial flora and fauna.

Until now, however, there has been a missing element: the marine environment.

Clearly, its absence has made our park system less representative of W.A.'s environment, especially considering that the State has some 12700 km of coastline.

Recently a start was made to address this imbalance with the official opening of the Marmion Marine Park, W.A.'s first marine park.

The primary objective in establishing this park, which is located on metropolitan Perth's doorstep, is to conserve significant examples of our marine heritage, and to encourage public understanding, appreciation and continued enjoyment of the marine environment in ways which will leave it unimpaired for future generations.

These same values apply to the proposed Ningaloo Marine Park which is situated along 260 km of the State's coastline south of Exmouth. Ningaloo will be vested in the National Parks and Nature Conservation Authority as a marine park in July.

Both of these marine parks not only allow for the development of proper management techniques to protect the marine environment, but also to enhance recreation.

Marmion reef has long been a popular holiday destination for many Western Australians who fished for the huge groper and crayfish offshore, and swam in the protected lagoons.

Ningaloo might be less well known because of its isolation, but the tourist industry is expected to promote this area of our coastline and the adjacent Cape Range National Park and, as a consequence, it will become one of the State's premier tourist attractions.

The establishing of marine parks will provide many benefits.

Some intangible, such as the knowledge that future generations will be able to appreciate areas of unspoiled natural beauty.

Others more tangible, such as the enjoyment of visiting a marine park.

There will also be benefits in terms of jobs created and the expansion of a growing and viable tourist industry.

Furthermore, marine parks will provide ecological benchmarks for research into natural processes and into the relative effects of marine and coastal uses.

W.A. has a responsibility to protect special marine environments and to encourage public appreciation of these areas now and in the future.

Our marine parks will do this.