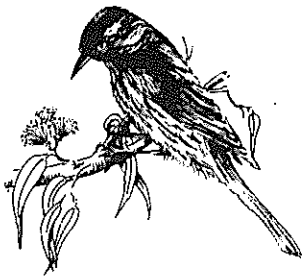
LAND FOR WILDLIFE NEWS



Newsletter of the LAND FOR WILDLIFE scheme

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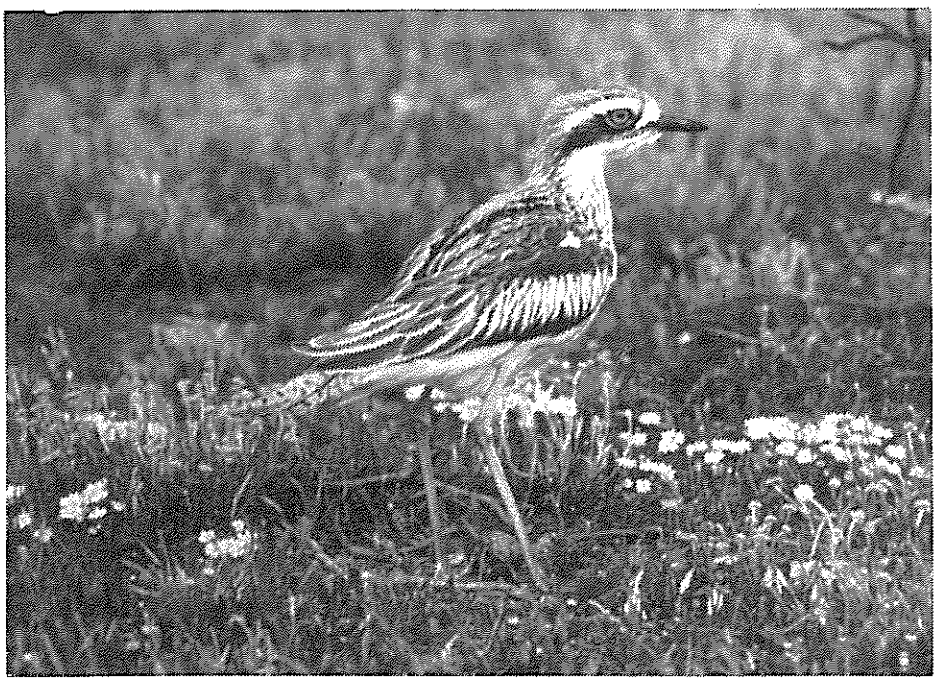
Inside



The Bush Thick-knee is a vulnerable species in Victoria. Most of its former habitat occurs on private land. Members of our scheme are making substantial contributions to its continued survival. Photo: Graeme Chapman.

The satisfaction of contributing to the survival of threatened species

In our first newsletter we gave the example of Jack Frewin at Violet Town who, by incorporating wildlife habitat into the management of his sheep property, had also provided habitat for two threatened species - the Bush Thick-knee (pictured above) and Grey-crowned Babbler. The situation facing many species and habitats is worse than most people would realise. Over 150 vertebrate animals and over 850 plant taxa are currently threatened with extinction in Victoria.

Habitats are also under threat. To understand why certain regions of the State are particularly affected we need only look back two hundred years to the beginning of European settlement. Settlers in Victoria were, of course, attracted to the most fertile soils at lower elevations. Subsequent clearing, grazing and agricultural practices, and further developments (see LFW Note 4) have largely destroyed or degraded natural habitats in these areas. It is therefore the habitats and wildlife that were formerly associated with these most agriculturally productive areas that have been hardest hit. These are primarily the areas that once carried the grasslands and grassy woodland habitats. That is not to say that all habitats haven't been affected to some extent by changes brought about by European man. Wetlands are another important habitat that are fast disappearing. For example, 95% of wetland area has been lost in South Gippsland and over half the shallow wetlands (freshwater meadows and shallow freshwater marshes) have been lost from the Campaspe river basin.

Many species (or variants within a species) and communities of plants and animals are threatened on a regional or local basis. We don't only need to conserve species and habitats that are threatened statewide or nationally. Species vary throughout their range and local variants can have unique characteristics (see page 12). It is therefore necessary to ensure that threatened species are conserved over the widest possible range across the State or Nation.

Are you familiar with the natural vegetation and fauna of your area? Throughout much of Victoria only the overstorey plants remain with few clues as to what the lower layers were like. If we are to conserve species, to retain some understanding of the history of our natural environments and to retain the diversity of nature we need to look after the remnants of our natural vegetation. In this issue we look at some voluntary contributions being made by private landholders.

Department of Conservation & Environment

Bird Observers Club of Australia

Editorial

This newsletter is the fourth we have produced and concludes the first year of an upgraded *Land for Wildlife*. Based on mid-year results, we estimate that over 400 families will join *Land for Wildlife* this year. This is a 400% increase on the 1989 figure (the year prior to *Land for Wildlife* first receiving significant funding).

If you are planning revegetation work this season, now is the time to prepare the groundwork. If you need help in planning your project, contact the Department of Conservation and Environment for advice. Some information is contained in this newsletter (see "Practicalities").

As always we would like to hear from you. What innovative ideas do you have for incorporating wildlife habitat onto your property? What are the main obstacles to taking a more conservation-oriented approach to land management? Is this newsletter fulfilling your expectations? What advice do you need?

I would like to suggest that each member makes a commitment to undertake a project in the next few months that will have positive benefits for wildlife. It might be a small project such as inviting someone to join the scheme or talking to a community group about some aspect of providing for wildlife or a larger project such as fencing off an area for revegetation, etc. We would like to hear of any projects you attempt, no matter how small. A list of what is being done will be published in a future newsletter. Existing projects that will be undertaken over the next few months are included. The aim is to show a practical commitment to wildlife and provide a range of ideas of how different people are contributing to the aims of the scheme. Please send photographs if they are available.

Increased funding in 1991/92 has allowed us to appoint an additional extension officer in the Department's Geelong Region.

Stephen Platt

Across the editor's desk

A landholder recently suggested that an area of native scrub would be cleared to provide space for planting local manna gums, thereby attracting koalas to the property. We cannot overstate the importance of natural habitats. They are unique complex systems that can never be replaced in their entirety. If you've got natural bushland don't remove it to replace it with something else. Scrub that might appear to have no apparent wildlife value to you might be just what is desirable from the wildlife viewpoint. In any case, if the area is natural and there aren't manna gums growing there (ie they haven't been removed in the past) there's probably a good reason and clearing the scrub to plant them is almost certain to fail to provide suitable habitat.

Clarification Vol 1, No. 3, p3.

Jim Maguire (DCE Horsham) noted with concern the article on page 3-4 of Vol1, No. 3. He correctly points out that using live trees as strainers can kill or damage the tree over time. As a tree grows its girth expands. If allowance is not made for this, fencewire will eventually cut through the bark and the living tissue of the tree which lies just beneath the bark. This may pose a safety risk later on when the tree may be used for firewood if buried wire is present when using a chainsaw. In the example used considerable care had been taken to avoid this problem. Polypipe was used, tensions adjusted and only mature trees selected. In balance it would appear that posts are preferable to trees as strainers.

The following questions were raised by members of a LandCare group when addressed by a Land for Wildlife Extension Officer. We would be happy to receive your answers also.

Q. What can we do about wombats eg under fences.

A. Firstly you need to assess whether there is a problem and to determine if any action is justified in terms of the time and cost involved. If the problem justifies action, take steps that get at the cause of the problem, not just the symptoms.

a) If damage is just to fences and burrowing on the property is not a problem then wombat gates may be the cheapest solution. See Vol. 1, No. 2 p 4.

b) If there is a need to exclude wombats (because they are burrowing on the property in dam walls, paddocks, etc), then electric fencing is probably the best method. Two electrified wires, 15 and 30cm from the ground offset 30 cm from the existing fence, is one configuration which has worked. Shooting of wombats, where permitted, is usually futile, since replacement often occurs within a very short time. While fumigation of burrows is still permitted (note that permits may be needed for these less desirable options subject to the parish) it has the same drawback as shooting.

Ian Temby

Q. How do I prevent leaf-eating insects (eg psyllids) from damaging remnant gum trees on my property?

A. Insect pests may cause serious damage to plants when the natural environment is in disarray. Normally there would be a predator in the food web that kept the insect population in check (although minor localised outbreaks or 'infestations' of some insects are apparently a natural phenomenon, even within balanced forest ecosystems). To remedy the problem it is necessary to re-establish a healthy ecosystem. You could begin by fencing off areas containing, or adjacent to, the gums (to avoid browsing by stock and allow natural regeneration of the vegetation) and replanting an understorey of local native species suitable for the location. Take a trip to some nearby bushland to discover what should be growing there. The understorey is an essential part of the plant and animal ecosystem. A healthy food web, created when the natural ecosystem is in balance, will assist the mature trees. Birds, small mammals and predatory insects attracted by the full complement of vegetation will help control pests. Chemical controls offer only short-term solutions to the symptoms of tree decline. Revegetation gets right at the cause.

Further reading: ***Dieback: Death of an Australian Landscape***, Heatwole, H, and Lowman, M., (1986), Reed.

Q. What can I do about mistletoe to prevent it killing my trees?

A. Mistletoe is a plant with an interesting

continued page 5

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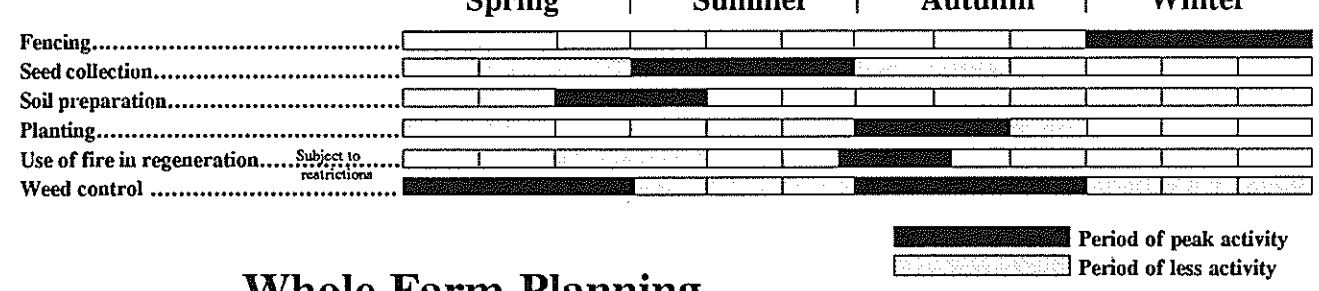
Practicalities

A planning guide for revegetation and natural regeneration.

Now (Winter-Spring) is the time to begin revegetation works on your property. We recommend that you begin by preparing a plan of your ideas and discuss these with as many 'experts' as you can. A Whole Farm Plan is appropriate for most agricultural properties. Advice is available from the Department of Conservation and Environment (DCE). Based on the plan, you might trial some revegetation techniques this year in small areas.

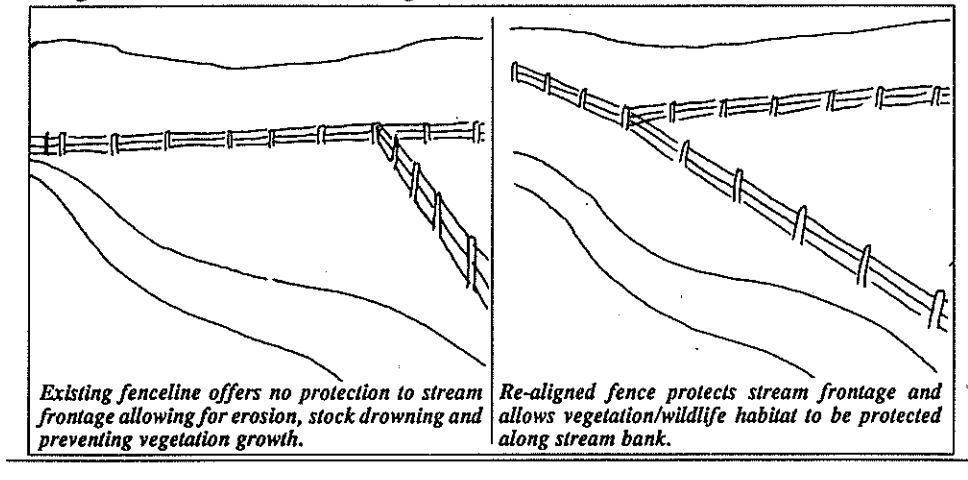
If you are interested in natural regeneration, why not fence off a few small areas near to remnant native vegetation? It may be best to do no more this year and see what happens. Additional soil bed preparation, weed and pest animal control and other practices are often required to promote natural regeneration. Make sure your fencing allows access for such work to be undertaken. A comprehensive 'Note' on natural regeneration is being prepared. We would appreciate any comments or advice you can offer from your own experiences of natural regeneration. These should be sent to the Editor, Land for Wildlife News, P.O. Box 137, Heidelberg, 3084.

Use the chart below as a very general guide to the activities you may need to carry out. Seek specific advice for your property from DCE. Fencing and soil improvement should be done prior to seed fall which occurs in summer (Dec-Feb) for most plants. There is usually a change in seed colour during ripening eg wattle pods and eucalypt buds turn brown and dry off. If you wish to regenerate wattles (*Acacia*) and other species naturally using fire then you may need to use the grass growth that occurs during spring as fuel. Be wary of this technique and seek professional advice first. Also, check with fire authorities, they may even be able to provide some assistance. You will find plants in flower throughout the year but most will flower in spring and early summer. This is a good time to get out the identification guides (see our special offer on page 10), local floras and maps (such as those produced by the Land Conservation Council). The National Herbarium or your local DCE office can help identify unknown species. Planting is best done after the first consistent rains in autumn (April). This will allow some growth during the warm part of autumn and follow up growth the next spring ready for the onset of summer. Many seeds use this strategy naturally. A suitable approach for a project using natural regeneration might be: Fence, allow grass to grow over spring and then burn late spring/summer (subject to fire season controls) or remove weeds with a non-residual herbicide/hand weeding, scarify lightly if necessary (soil compacted) just prior to seed fall and then wait for autumn germination which will occur following the first reliable rains so long as the soil is warm. Follow up pest plant and animal control may be needed. Of course, in some situations simply fencing an area off will allow regeneration. It is not possible here to give detailed advice for your specific situation. I suggest that you get local advice from DCE staff and other local groups or landholders. Some experimentation on your part could make you the local regeneration expert. It is definitely advisable not to put all your effort into one season.



Whole Farm Planning

Whole Farm Planning is an excellent way for you to enjoy greater benefits from your property. Many of Victoria's TAFE colleges offer courses in Whole Farm Planning and the Department of Conservation and Environment also provides some information and training. An example of how better planning can allow you to improve land management and incorporate wildlife habitats is given below. Simply relocating fencing to conform with land types, rather than straight lines, can allow greater and more controlled use of each area on a property. In this example, fence re-alignment will allow revegetation to be carried out along the streamside.



Existing fenceline offers no protection to stream frontage allowing for erosion, stock drowning and preventing vegetation growth.

Re-aligned fence protects stream frontage and allows vegetation/wildlife habitat to be protected along stream bank.

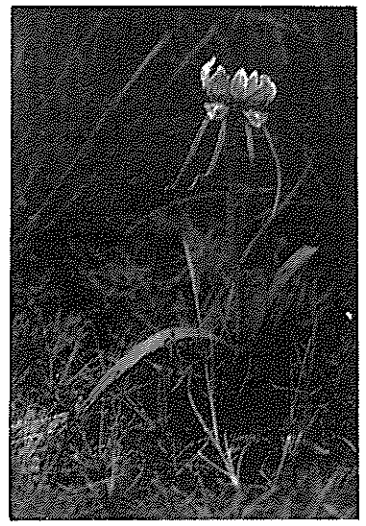
Controlling pond algae

Rotting straw produces a chemical which inhibits the growth of algae (new Scientist, 13 April 1991). Where algae have become a problem, this might be a useful method of short-term control. Two applications are suggested, one in autumn and the other in spring. It takes one month before the straw has its effect. Only 10g of straw per cubic metre of water are needed. Algae can produce chemicals that are dangerous to humans and other animals. The cause of algal problems is usually related to lots of sunshine and excess phosphates in the water. Long-term control should aim to reduce nutrient input to the water.

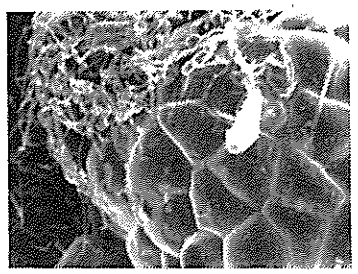
Notes

Notes 1-9 have been circulated to all members. Note 11 on the Giant Gippsland Earthworm was sent to members in the area of the worm's occurrence. Notes 9, 12 and 14 accompany this newsletter.

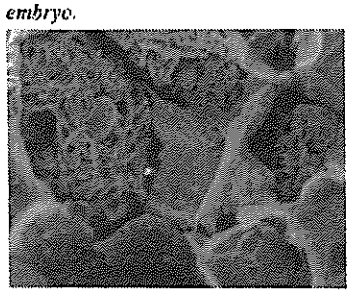
Practicalities



Diuris fragrantissima, an endemic orchid.



The mycorrhizal fungus invades the orchid embryo.



The fungus invades cells of the host orchid but does not kill it.

This rare orchid (far left) can only survive in association with a fungus that invades its cells (left). The fungus provides nutrients for the plant, especially in the early stages of seedling development. Such symbiotic relationships between plants and their fungal associates (mycorrhizae) are now known to be widespread (80-90 % occurrence) in native plants. It is a long-established connection, involving many types of fungus, and has even been reported to occur in early fossil specimens.

The absence of soil fungi can have major management implications for establishing vegetation. Introduction of radiata pine to Australia was initially unsuccessful. It was only when the necessary symbiotic fungus was added to the soil that it began to thrive. It is still the practice in nurseries to add soil from existing pine plantations to nursery seed beds so that the new plants are sure of infection by the fungus. Soil bacteria are also important to plant growth. A well known example is the nitrogen-fixing bacterium that forms nodules on the roots of subterranean clover.

In degraded areas, introduction of organic material containing the natural soil flora and fauna from a healthy bushland area may be necessary to achieve successful regeneration.

This leads to an important application for bush regenerators, particularly where soils have been substantially altered from the natural condition. When trying to re-establish native plants in degraded areas it may be a worthwhile practice, particularly where previous attempts at plant establishment have failed due to poor growth or lack of germination, to introduce some soil containing organic matter (topsoil) from healthy vegetation of the same type to the area being seeded/planted. Be extremely careful not to use soil that may be infected by harmful fungi such as the cinnamon fungus *Phytophthora cinnamomi* or infested with weeds. Further reading: ***The Cinnamon Fungus in Victorian Forests***, Marks, G.C. & Smith, I.W. (1991), Lands and Forests Bulletin No. 31, Department of Conservation and Environment, Victoria. Source: talk by Dr P.J. Keane of La Trobe University to Greening Australia, Ground Flora Symposium, 22-23 Aug 1991.

Wildlife around the home

Attracting birds and butterflies

Whilst the retention and restoration of natural habitats should be our primary goal, as it provides for the long-term survival of wildlife, there are many landholders who would like to observe some wildlife at close range. If your home is in a natural bush setting, there may be little more for you to do than perhaps place a few nest boxes or a water source, on a stand (so as not to attract snakes), within viewing distance. Supplementary feeding is not recommended (see page 11). For those landholders on a farm that has been substantially cleared, or who own a modest, largely urban block, there are a number of ways that you can provide encouragement to wildlife without causing harm to the environment. A few suggestions follow:

1. Plant a wide diversity of species preferably selected from the local flora. This will appeal to a wider range of wildlife. For example, planting species with tube-like flowers eg *Grevilleas* that have a range of tube lengths will attract a wider range of birds and butterflies. Select species that complement each other by flowering or fruiting successively. 2. Create a layered structure with trees, shrubs, and ground cover. 3. Leave some areas of your lawn unmown, away from areas where children play but beware of snakes. This will allow grasses to set seed and attract seed-eating birds (see p5) and 4. Mulch garden beds with natural litter to attract ground-foraging birds. 5. Provide shelter and breeding sites for a range of birds by including dense and/or prickly plants in the garden. Trees and shrubs are suitable as are tussock grasses and rushes. 6. Combine this with a range of plants with nectar-producing flowers, such as members of the Proteaceae *(Grevillea, Hakea, Banksia, Callistemon, Lomatia, Persoonia),* Myrtaceae (*Eucalyptus, Melaleuca, Leptospermum, Kunzea, Baeckea*), Epacridaceae (*Leucopogon*), Labiatae (*Prostanthera*), Rutaceae (*Phebalium, Correa, Zieria etc*), Asteraceae (daisies) and Fabaceae, (peas). or berry producers: Chenopodiaceae, Myoporaceae (*Eremophila*), Santalaceae (*Exocarpus*), native Solanaceae, Mistletoe, and Liliaceae (*Dianella).* Wattle *Acacia* seeds are also popular amongst some birds. As a rule of thumb, look at the local vegetation and select species that are visited by the animals you wish to attract. 8. Nest boxes can be situated near the home to attract birds and mammals, including bats, or to provide alternative homes for species that might otherwise want to live in the roof of your house such as Brushtail Possums. Refer to LFW Note 14 for designs. 9. Reduce your use of pesticides and let the insect-eating birds do the work for you. Care should be taken not to include environmental weeds in your garden e.g. Ivy. Advice can be sought from your local DCE office. A list of environmental weeds is soon to be published. Details on how to get a copy will appear in this newsletter. Dogs and cats must be controlled if you wish to attract wildlife (for options see Vol 1, No. 2, p 9).

It should be noted that all wildlife is protected in Victoria and it is an offence for you to be in possession of wildlife that has not been legally obtained and held. Further information on legal requirements can be obtained from the Wildlife Licensing and Permits Unit on (03) 450 8600.

The Dynamic Partnership-Birds and Plants in Southern Australia, Ford, H. and Paton, D., (1986), Gov't Printer Sth Aust. ***Native Trees and Shrubs of South-eastern Australia***, Costermans, L., (1981)Weldon & Assoc. Pty Ltd. ***Flower Power in the Australian Bush and Garden - The Fascinating Interrelationships between Insects and Plants,*** Jan Taylor, (1989). ***How to attract butterflies to your garden,*** Clyne, Densey, (1990). ***The Butterfly Garden - Butterfly attracting and food plants,*** Dynamo House Pty Ltd.

Historical Note

From "The Infiltrators - A History of the Heytesbury 1840-1920" by Jack S. Fletcher, Shire of Heytesbury, 1985.

'Farming settlement close to Elingamite commenced in the 1860's, about the time that Cobden was surveyed as a township. Five miles from Cobden was Mr Elliot's homestead on which he principally ran cattle but also raised pigs **on boiled marsupial flesh** and had an orchard.'

Bill O'Shea, LFWEO, Colac.

from page 2 place in human culture. It had mythological significance to the Gauls in pre-Roman England and is a traditional part of Christmas in England (kissing under the mistletoe branch).

In 1904 mistletoe was proclaimed a noxious weed in Victoria. In the following decades, up to the 1950's, mistletoe was manually removed from trees by the Forests Commission. In one instance 5000 hectares were manually cleared of mistletoe. Of course, mistletoe soon dispersed into these treated areas so the problem was not overcome.

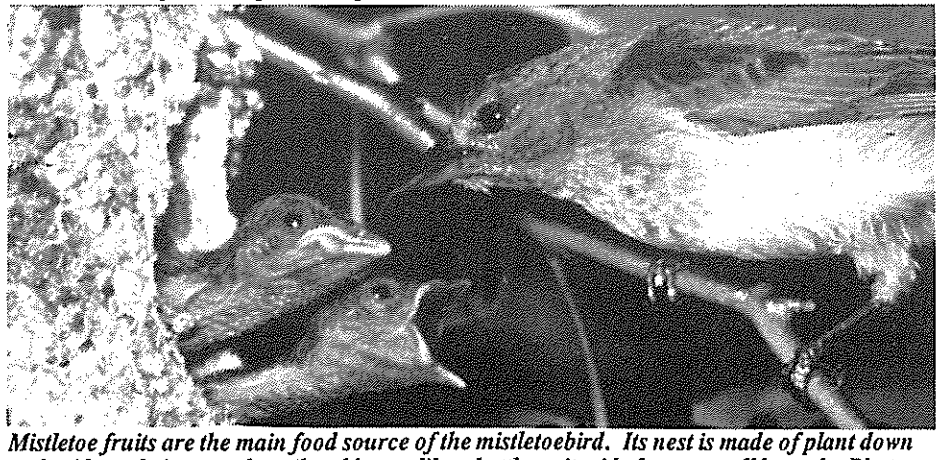
Mistletoes are a natural part of Victoria's ecosystems. They are part of the web of life in those systems. For example, the fruits of mistletoe are the main food source of the Mistletoebird *Dicaeum hirundinaceum*. This bird is an important dispersal agent for the plant. Seeds are ingested with the fruit, however, a special valve over the gizzard allows them to pass through undamaged. They then pass out with the faeces and are deposited on tree branches. Mistletoe is an important food source (see Vol 1, No. 2 p 12) and an essential part of the life cycle of some butterflies. Many native birds feed on mistletoe flowers which provide nectar in winter when many other sources are unavailable, the birds acting as pollinators of the mistletoe. Dense mistletoe plants are used as nest sites by birds and Ringtail Possums and for shelter. Undoubtedly, there are many other relationships between mistletoe and wildlife that are yet undiscovered.

Whilst some mistletoes are a parasite of eucalyptus trees, other native species are also affected, such as sheoaks *Casuarina, Melaleuca* and *Grevillea*, as are many introduced trees and shubs such as Oriental Plane trees and Silver Birches in Melbourne.

Mistletoe is a parasitic plant. It produces its own food but relies upon its host for water and essential soil nutrients. Most healthy trees appear to survive even reasonably heavy infestations of mistletoe. Malcolm Calder, of the University of Melbourne, has suggested that unless more than 20 % of the canopy consists of mistletoe no action need be taken. It is not uncommon to see dead mistletoe plants on healthy trees in the bush. The mistletoe hosts probably have some defence mechanisms against the parasite. Some hosts appear to be more susceptible to infestation than others.

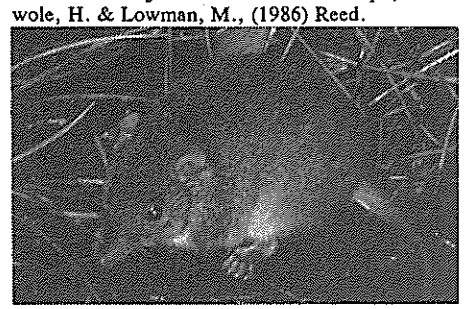
Severe infestations of mistletoe are often associated with stressed or ageing plants. Agricultural practices, isolation, fungal attack, salinity, insect predation and other agents may stress trees and lead to the symptoms of dieback. Heatwole and Lowman conclude 'that trees heavily infested with mistletoe may be killed directly by them; but probably more often they die as a result of a combination of stresses, one of which is mistletoe.'

The cause of the problems associated with mistletoe appears to be related to an 'unhealthy' environment. A long-term solution is to try to create an environment on your property which is more ecologically healthy. Some steps that can be taken are to fence off remnant trees or bush from stock to allow for regeneration. If necessary, restore areas by planting native species, including understorey and ground flora. Leaving ground litter and fallen logs will encourage ground-dwelling animals. Encouraging regeneration in areas of salinity recharge, controlling introduced pest plants and animals and so on all assist to maintain the benefits provided by vegetation. Without this action, should the infested trees die, there will be none to replace them. If you are particularly concerned about the fate of an individual favourite tree then manual removal of mistletoe appears to be the best option.



Mistletoe fruits are the main food source of the mistletoebird. Its nest is made of plant down and spiderweb, is pear-shaped and hangs like a bottle on its side from a small branch. Photo: Ian McCann

References: ***The Biology of Mistletoes***, Calder, M & Bernhardt, P., (1983), Academic Press (not for lay readers).***The Dynamic Partnership - Birds and Plants in Southern Australia***, Ford, H.A. & Paton, D.C. (eds) (1986), Gov't printer, Sth Aust. ***Dieback - Death of an Australian Landscape***, Heatwole, H. & Lowman, M., (1986) Reed.



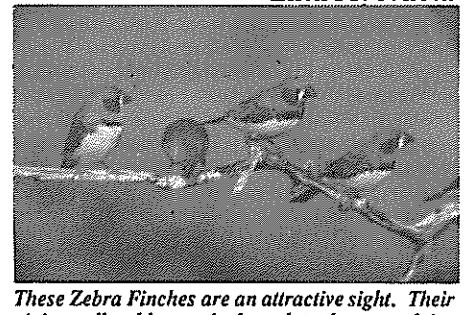
Ground-dwelling mammals such as this *Antechinus* climb trees to forage on insects that would otherwise be defoliating them. Ground cover is critical for this mammal's survival. P: Ian McCann

Habitat requirements of grassfinches

In areas where grassfinches occur much can be done to improve their habitat. Marcel Schopfer of La Trobe University, in a recent PhD study, recommended the following actions to provide for grassfinches such as the Double-barred Finch, Zebra Finch, Diamond Firetail, Redbrowed Firetail, and Plum-headed Finch: 'Planting of dense and prickly shrubs such as Paperbarks, *Melaleuca spp*, and Hakeas, *Hakea spp*' to provide nest sites. The Plum-headed Finch also used Spiny Rush, *Juncus modesta*, for nesting. Surface water must be included in any planning to attract finches as they drink daily. Ground cover should contain a mosaic of patch types composed of long, dense grass and sparse, short grass. In farmland this may be achieved by fencing off certain areas from grazing or by selective mowing. Certain patch types, containing native grasses, should not be cut until they have set seeds. Introduced grasses, such as Paspalum, provide important alternative food sources and should not be eradicated until appropriate natives have been established.

Feeding ecology of five sympatric species of grassfinches in south-eastern Australia, Schopfer, M., (1989), PhD Thesis, Dep't Zool. La Trobe Uni.

Ellen McCulloch



These Zebra Finches are an attractive sight. Their piping calls add a musical touch to the open plains of Victoria. Photo: Graeme Chapman

A decade on, the first Land for Wildlife property revisited

Noel and Wendy Fowler's property 'Brickmakers' near Bambra was, in 1981, the first property to join the *Land for Wildlife* scheme. Since then the Fowlers have increased production and turned the severely eroded Brickmakers Creek into a haven for local wildlife. Fifteen large dams have been created for water supply and waterbird habitat.

The 425 ha property, plus 80 ha leased, carries 3000 medium-fine wool sheep and fat lambs.

Noel says "About 8% of the farm is wildlife habitat in the fenced-off creek, windbreaks and woodlots and the series of dams. But it's something anyone can do on a small scale. Even an erosion gully can become an improvement to add to farm value. Less productive land can be fenced off to provide stock shelter as well as wildlife habitat."

The creek had active erosion along its length, was unfenced and suffered from a severe rabbit problem. The 3.2 km of frontage was fenced and dams created to lessen the erosive force of the water. A mixture of native trees was planted and blackwoods (*Acacia melanoxylon*) and Manna Gums (*Eucalyptus viminalis*) regenerated naturally. Ten thousand trees have been planted on the farm providing shelter which has meant lower losses with lambing and off-shears.

The diversity and number of birds has increased markedly with more vegetation and water bodies. Buff-banded Rails, Plumed Whistling Duck and Royal Spoonbill are some of the birds visiting or resident on the property. Blue-winged Parrots are nesting as are Sacred Kingfishers which have moved down the creek since it has been fenced.

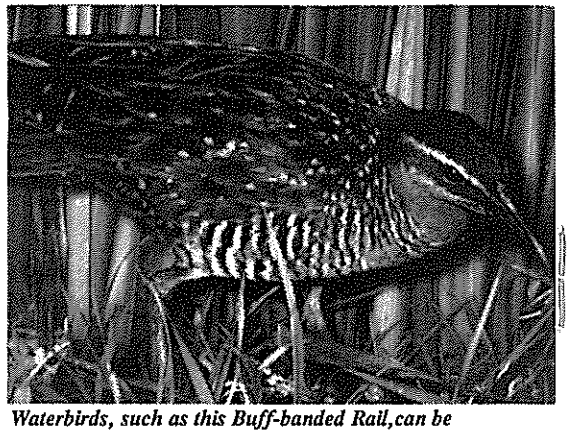
Financing the dams has been partly offset by sale of loam removed during construction. The increased water has allowed irrigation for growing potatoes and an early crop of millet or turnips.

Developing the wildlife habitat on the dams continues each year. Explains Noel "leaving loam around the edges is important for low and aquatic vegetation and for ducks and spoonbills probing for weed and crustaceans." Sections of adjacent long grass creates a feeding area for insect-eating birds and provides a refuge from aerial predators. Low islands and irregular margins provide further diversity.

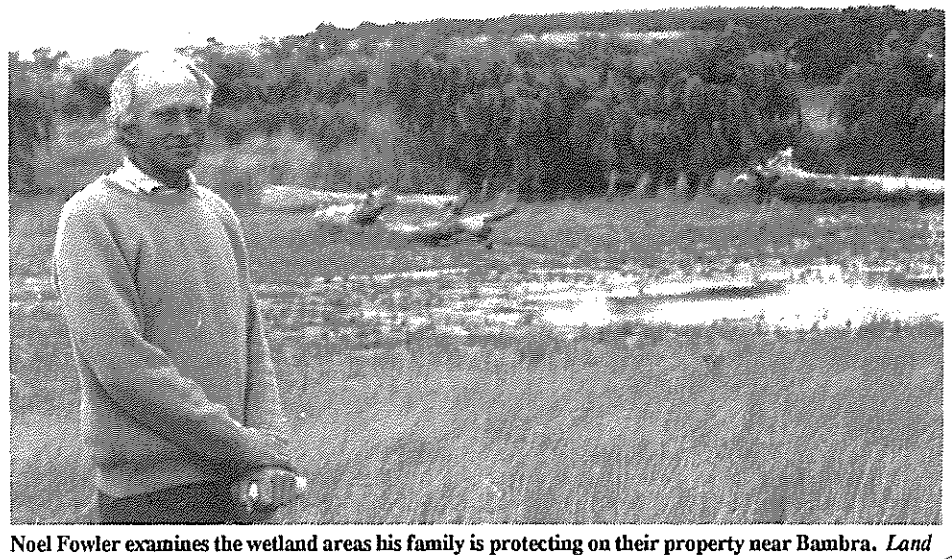
Another by-product of the dams is the fishing. Noel has caught yellow-bellies to 3kg, and they taste terrific on the barby! "The fish help to clean the water, and to establish a balance in the dams. It's a joy to catch a few nice ones."

Noel and Wendy value their land for wildlife as a better living and working environment and as an ongoing satisfying project. Rabbits and cash flow remain the biggest problems but, says Noel "It's doing something positive and it's very satisfying to see the birds and other animals surviving here when they are disappearing so fast in many places. We'd like to leave the land here better than when we started."

Bill O'Shea, LFWEO, Colac.



Waterbirds, such as this Buff-banded Rail,can be attracted to wetlands on private land.



Noel Fowler examines the wetland areas his family is protecting on their property near Bambra. *Land for Wildlife* aims, in part, to recognise the voluntary efforts of landholders, like Noel and Wendy Fowler, who have voluntarily been contributing to the survival of our native flora and fauna.

Don't forget the soil

The soil is essential for plant nutrition and stability. Soil compaction caused by stock and the death of soil flora and fauna are major obstacles to plant survival and natural regeneration. To achieve regeneration in areas with compacted soils it may be necessary to lightly scarify compacted areas and add some natural organic material (see page 4). Chemicals such as herbicides and fertilizers should be used wisely as these can be detrimental to living organisms in the soil and the natural balance of soil chemistry. Substantial soil disturbance, particularly in natural bushland, should be avoided as this provides sites for colonisation by weeds and increases the risk of erosion. When creating a dam, topsoil should be carefully removed and stockpiled then replaced over all surfaces of the dam, including those that will be underwater, prior to filling with water.

New members

The Shire of Mornington has recently registered 'The Briars', Woods Reserve and Mt Martha Park as *Land for Wildlife*.

Land for Wildlife extension officer Jean Edwards presents registration certificates to Mornington Shire President, Michael Blyth at the opening of Mornington Environment Week on 30 April 1991. Community-owned lands are eligible for *Land for Wildlife* registration.

Vol 1, No. 4

Threatened species - can we provide a positive future?

Victoria's flora and fauna has undergone major changes since European settlement. Twenty-four vertebrate species are extinct. In addition, thirty mammals, seventy-six birds, eleven frogs, forty reptiles and thirty-seven invertebrates are listed by Baker-Gabb (1991) as threatened in Victoria. Gullan et al (1990) list 866 taxa of rare or threatened plants in Victoria, of which 36 are now considered extinct (there are over 3000 species of native flora in Victoria). The habitats in which these species exist are also under threat. Frood and Calder (1987) reviewed nature conservation in Victoria, concluding that the lowland plains, riparian habitats and wetlands, tall open forests and intensively utilized areas were of particular concern for conservation.

The former habitats of many of these species are restricted to, or largely occur on, what is now private land. So there exists a great opportunity for those landholders who wish to contribute to the survival of threatened wildlife species to do so. Almost certainly, there is a species in your area which requires assistance in some form.

The *Flora and Fauna Guarantee Act (1988)* was passed to provide much needed assistance for the protection of both species and habitats. There is a Flora and Fauna Guarantee officer in each DCE Region. They are an excellent source of advice concerning threatened species in your area and what can be done to assist them. Regional wildlife officers and Land for Wildlife Extension Officers in DCE are other sources of advice concerning the management of habitats and threatened species.

References: ***List of threatened fauna in Victoria in 1991,*** Baker-Gabb, D. (1991), Department of Conservation and Environment, Victoria.

Rare or threatened plants in Victoria, Gullan, et al, (1990), Department of Conservation and Environment, Victoria.

Nature Conservation in Victoria, Frood, D and Calder, M., (1987), Victorian National Parks Assoc. Inc.

Land for Wildlife Note No. 5.

Wetland Grants

The Department of Conservation and Environment is encouraging the retention and restoration of wetlands in Victoria through the Wetlands Incentive Scheme. The principal aims in 1991 are to provide money for works that will re-instate wetlands that have been drained and to encourage the conservation of existing wetlands. The scheme provides grants to landholders for works such as fencing, earthworks and other siteworks. Landholders are expected to share the cost of the project and provide labour. If you are interested in applying for a grant you should seek specific advice on the application procedure from the Regional office of the Department of Conservation and Environment nearest your property. The scheme is currently available in the Bairnsdale, Ballarat, Benalla, Bendigo, Colac, Geelong, Horsham, Portland and Yarram Regions of the Department. Information courtesy of Glenn Wallace, Wetlands Unit, DCE.

The Regent Honeyeater - an endangered species dependent on eucalypts in farmland.

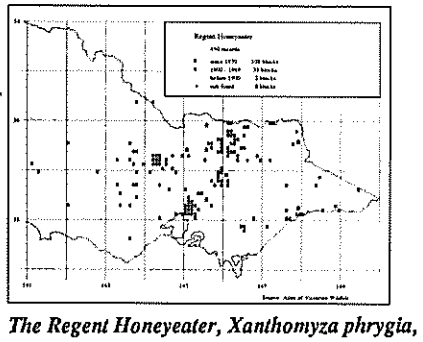
The Regent Honeyeater is a classic example of a species whose habitat has been severely depleted by European settlement of south-eastern Australia. Formerly widespread in dry open-forest along the inland slopes of the Great Dividing Range and in parts of coastal eastern Australia, Regent Honeyeaters have declined alarmingly since the 1940's and may now number fewer than 1500 individuals.

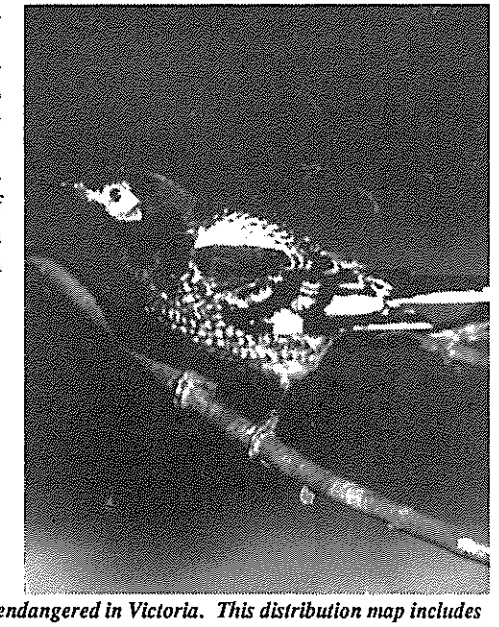
Recent studies by the Wildlife Branch of DCE and Bendigo Field Naturalists Club have shown that Regent Honeyeaters are dependent upon nectar from a few favoured eucalypt species: Red Ironbark *E. sideroxylon*, White Box *E. albens*, Yellow Box *E. melliodora*, Yellow Gum *E. leucoxylon* and Blakely's Red Gum *E. blakelyi*. Regent Honeyeaters are highly mobile, moving between areas where the flowering of these 'key' eucalypt species is fairly predictable.

Unfortunately, **most of these eucalypt species grow and flower best on fertile plains or foothill country** in temperate zones - exactly the sort of country selected for farmland by our forebears. Further, most of the remaining box-ironbark forests grow on less fertile sites not taken up for farming. They have also been heavily exploited for timber - poles, fence posts, firewood - and most have been silviculturally treated to produce a dense stand of tall straight trees. Individual trees in such dense, immature stands are probably both less dependable and copious producers of nectar. Consequently, the best Regent Honeyeater habitat has been destroyed and the species is now dependent upon isolated remnants of quality habitat within large expanses of cleared or poor quality habitat.

In Victoria, the stronghold of the species is in the north-east, particularly Chiltern State Park and Killawarra State Forest, but it also regularly occurs in the Alexandra-Jamieson area and north-east of Melbourne. In all areas it frequently utilizes remnant stands of the 'key' eucalypt species growing in farmland or along roadsides. Thus, concerned landholders within the species distribution (see map) can make a significant contribution to the future of the Regent Honeyeater simply by retaining stands of the 'key' eucalypts and encouraging regeneration of these species. Priority should be given to replanting these key species wherever they naturally occur.

Peter Menkhorst, DCE





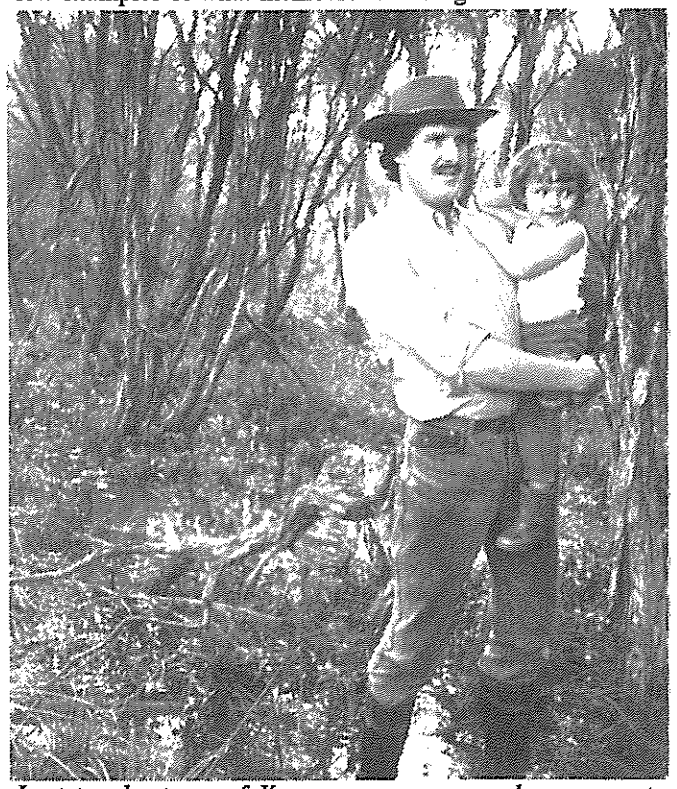
The Regent Honeyeater, Xanthomyza phrygia, is endangered in Victoria. This distribution map includes historical records. Source: Atlas of Victorian Wildlife, Wildlife Branch, DCE. Photo: Graeme Chapman.

Wetland Tour

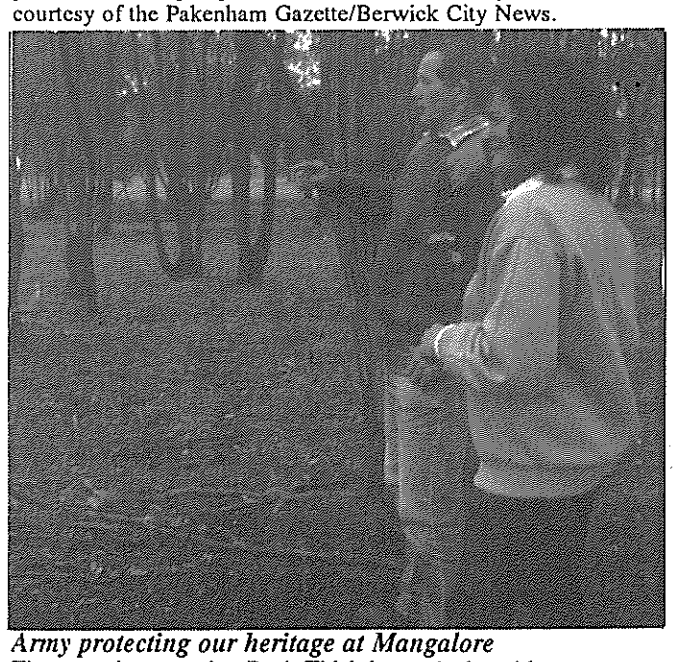
A wetland tour of the Ballarat area will be held on Sunday 10 November 1991. The 160km car tour leaves from the Ballarat Civic Hall at 9.30am and will visit 10 wetlands to the west of Ballarat. BYO lunch will be held at the historic 'Mooramong' homestead. A charge of $4.00 per visitor will cover tours of the nature reserve and homestead. Enquiries: Gavin Cerini, Ballarat (053) 331519 AH.

Your contribution to threatened species survival

Members of *Land for Wildlife* are contributing to the survival of threatened species and habitats. Every species is potentially threatened. The more common species on your property may not be so common if it were not for the protection you provide. A few examples of what members are doing are shown below.



Last two hectares of Kooweerup swamp under covenant.
David and Sue Young are protecting a remnant of natural swamp vegetation on their property near Pakenham with a conservation covenant. Once covering 40 000 hectares the Kooweerup swamp presented a nearly impenetrable barrier to the early settlers. Photo courtesy of the Pakenham Gazette/Berwick City News.



Army protecting our heritage at Mangalore
The army is protecting Bush Thick-knees (vulnerable - see cover photograph) and Swift Parrots (vulnerable) at its Mangalore facility. Brian Cambrey (AMF) and Liz Chambers (*Land for Wildlife* Benalla) inspect the open habitat that is preferred by Thick-knees on the base. Brian removes foxes and cats which would otherwise find Thick-knee chicks easy prey. Photo: S. Platt.

Helmeted Honeyeater gains more living space
Colin and Margaret Richards have fenced off remnant vegetation adjoining the Woori Yallock Creek to provide additional habitat to this State's faunal emblem, the endangered Helmeted Honeyeater. The bird is now restricted to a single population in the Yellingbo Reserve. Part of the recovery effort involves encouraging landholders to increase the habitat available to this species. The 'Friends of the Helmeted Honeyeater' group has been of great assistance in raising awareness of the status of the bird in the local community and assisting landholders with on-ground works.

Rufous Bristlebirds are rare in Victoria but have a future at Port Campbell.
Land for Wildlife farmers Annie Schofield and Phillip Younis are protecting Rufous Bristlebird habitat on their Port Campbell property. Photo: Bill O'Shea

Foxes: their effect on wildlife and control methods

by Brian Coman, VERNOX

Foxes and Wildlife Conservation

The fact that foxes kill and eat a variety of native wildlife in Australia has been known for a very long time. Indeed, one of the early commentators on the importation of foxes last century felt that the animals might help to keep the numbers of 'native pheasants' (Lyrebirds) in check!! What is not well known is the actual extent and severity of fox predation on wildlife. I refer here to species or populations of animals and not individuals. Are the foxes endangering a particular species or, perhaps, a local population of that species? In a wider sense, that is the critical question and, in the last few years, we have begun to get a few answers.

There are, in the southern wheatbelt area of WA, a few small colonies of a particular rock wallaby, *Petrogale lateralis*. In the few areas where they existed, numbers were always small and, apparently, declining. Then, in the late 1980's, the Department of Conservation and Land Management in WA began a very intensive fox baiting campaign in some of these areas. The results were staggering. Numbers of wallabies increased dramatically in the 'treated' areas, compared with those 'untreated'. Clearly, foxes were having a major impact.

Other, less direct evidence is also coming to hand now. Scientists who release captive-bred Mallee Fowl or bandicoots or a range of other small animals often attach radio transmitters to them so that their subsequent fate can be followed. Often these animals are subsequently quickly killed by foxes and/or cats.

So, we may take it that foxes are a threat to certain wildlife species in some situations. Generally speaking, foxes are opportunists - they will eat whatever is readily available and palatable. Thus, in areas where rabbits are thick and relatively easy to catch, we might expect that they will constitute the major part of the fox's diet. In wilderness areas or reserves, however, where rabbits are scarce relative to other food sources, foxes will inevitably turn to the next item on the larder, be it possums, bandicoots, ground-nesting birds or whatever.

And this, really, is often the problem confronting the landowner or manager who wishes to attract native wildlife to some part of his or her property. When the guests move in, so do the predators. The situation becomes particularly serious if, after a series of good years for rabbits, fox and cat numbers build up to a high level. Then, when the rabbits crash, we are left with an abnormally high (and hungry) fox population. This could well be the time when native wildlife are hardest hit.

What can be done? Unfortunately, there is no simple answer to this question. A concentrated and long term baiting effort might provide some relief (it certainly worked for the rock wallabies in WA) but, in my experience, there are often foxes which will not eat baits - at least, not at certain times of the year. And, baiting must be carried out regularly over time. Once you 'clean out' foxes from an area, new foxes quickly migrate in - there always seems to be more foxes than there are territories to contain them. In autumn, particularly, an area 'cleaned up' by poisoning or shooting will be re-invaded in a matter of weeks.

Fencing is another alternative but it is very costly and not altogether foolproof. Foxes can easily jump a four-foot fence and, if necessary, they will scale fences much higher than this. Electrification is a better option but, even then, foxes have an uncanny ability to breach an electrified barrier. Often, they will jump straight up on the corner post, avoiding all wires. But the worst feature of electric fences is the need for constant checking and maintenance. Just one limb down on the fence for one night could easily mean the end of your clutch of ducklings or your plover's nest near the dam. Despite all this, a well-designed and well-maintained electric fence will keep foxes out.

In the longer term though, I think the best strategy is a district approach to fox control. There is little point in you cleaning up your foxes if they simply stream in from next door. In many classes of country, I believe that high levels of control are possible by a combination of techniques. Fumigate all the breeding dens in the district each October (this will get the pups only). Organise some shoots of local 'cover' - swamps, thickets, areas of scrub, etc., keep the local lads going with the night spotlight shooting, lay baits in a co-ordinated way and do it more than once or twice a year. In winter, don't leave sheep and lamb carcases about - burn them. You are only providing food for the foxes. Give them a bait instead. Poisoning is probably best done in the autumn and winter when foxes are hungry. Advice on poisoning can be obtained from your local DCE office. In general you should use an attractive meat bait (I have used ox liver lightly fried in fat and obtained good results), handle the material with gloves and bury the baits under a few centimetres of soil to prevent non-target species from picking them up.

In summary, you need to keep the pressure on the fox population at all times. Do it on a district basis to prevent rapid re-colonisation. Nearly every farmer or landowner knows where their fox dens are located. Why not make up a district map with all locations shown and have a few volunteers gas them every spring? Here is a good project for the local LandCare Group or Service club!

Editor's note:
The effects of any pest plant or animal control should take into consideration any non-target effects on wildlife or the habitats you are trying to protect. Seek advice from the Department of Conservation and Environment.
Further reading: The Bird Observer, November 1979, No. 576, p77 'Vermin control and hazards to non-target species, Rabbit bait acceptance by birds in a Southern Victorian Forest.'

A burning issue

The removal of timber for any purpose raises issues regarding the effect on wildlife and its habitat. Where is the timber obtained which is used in your open fire? To reduce the impact you have on wildlife habitats you could 1. reduce your usage of timber and recycle wherever possible, 2. select timber that has been grown in plantations created for that purpose rather than from areas of natural habitat. For example, if you have the land area you could create your own woodlot. 3. reject timber containing hollows and not remove dead trees or fallen timber. 4. tell your supplier of timber that you are not prepared to purchase timber that comes from natural habitats or contains hollows used by wildlife.

Bush detective

Tracks of the Water Rat. This species will be found close to rivers and lakes, especially those with undergrowth along the banks. Often associated will be refuse of broken shells of molluscs and crustacea.

Front foot Hind foot

Further reading: ***Mammal Tracks and Signs: A fieldguide for south-eastern Australia***, Triggs, B., (1984), Oxford Uni. Press

Are we learning from history?

Over and over again we have urged that steps should be taken to protect our forest lands, not only because extravagance will lead to scarcity, but also because the local climate will be affected in all those places where the forests are removed. In protecting the forests we do more than increase the growth of timber - we prevent waste of soil, we conserve the natural streams, it is not improbable that we prevent decrease in the rainfall, and it is certain that we largely affect the distribution of storm waters.' The ***Argus***, 1865

From: Dingle, A.E., (1984) *Settling*, Fairfax Syme Weldon & Assoc., p138.

A list of wildlife in your area.

Members wishing to obtain a list of wildlife species recorded from their local area are invited to make an application to the Atlas of Victorian Wildlife on the form enclosed in this newsletter. The Atlas contains over one million records collated from wildlife surveys, Museum of Victoria records, clubs, institutions, journals and individuals. The service is offered free to members of *Land for Wildlife*. Note that records for private land are often poor. Please enclose a stamped self-addressed envelope with your application.

The Australian Trust for Conservation Volunteers 'A Helping Hand for Wildlife'

The importance of considering wildlife in farm management is something which has become widely accepted. However, the expense involved in implementing the desired management strategies can often be prohibitive.

The time, labour and material costs of protective fencing, planting to enhance habitat, and weed and vermin control can strain the farm budget. Because of these costs, much of this essential work will only be achieved by the use of volunteers. The Australian Trust for Conservation Volunteers (ATCV) can help landholders by providing teams of volunteers who are willing to assist with the necessary work.

The ATCV is a non-profit community-based organisation, self-funding and non-political. Its philosophy is simple: the ATCV aims to provide a link between landholders with conservation problems and concerned volunteers who would like to help. They are a 'hands-on' practical conservation group, and work all over Australia all year round.

ATCV teams consist of a task leader, usually 6-8 volunteers, and their own food and transport. The landholder contributes all materials required, accommodation, and costs (generally between $150-$250 per day).

Teams are not available for commercial work such as agroforestry planting or general sub-divisional fencing. However, ATCV can provide volunteers to assist with labour-intensive conservation related projects.

In the past the ATCV has assisted farmers with tree planting and habitat revegetation, manual weed control, protective fencing, fumigation of rabbit warrens and erosion control works.

While the ATCV are not 'conservation experts', they are available to provide assistance and willing hands. If you would like further information regarding the ATCV and its activities, contact the operations manager Terry Peacock at ATCV, P.O. Box 423, Ballarat, 3353. Telephone (053) 331 483, Facsimile (053) 332 290.

Jo Firth, State Manager, ATCV.

Books

Ballarat - trees & shrubs

A Guide to Indigenous Trees and Shrubs for the Ballarat Region, Lisa J. Beamish, Department of Conservation and Environment, May 1990. Ballarat Region, Cnr Mair and Doveton Streets, Ballarat, 3350. Tel. (053) 336782.

Grass identification

Grasses of Temperate Australia, Lamp, C. et al (1990), Inkata ($54.95 at 'Greens' bookshop, Flinders Lane). Might be worth suggesting to your local library. A guide to identification with B&W sketches and description of species.

Sustainable Farming

Planning for Sustainable Farming, the Potter Farmland Plan Story, Campbell, A., (1991), Lothian Books & Greening Australia. (approx. $19.95). Detailed discussion and analysis of Whole Farm Planning projects on selected properties around Hamilton.

Frogwatch Field Guide to Victorian Frogs

An informative and easy-to-use guide to the identification of all Victorian frogs. Includes distribution maps and biological information such as breeding periods. Excellent colour photographs.
Cost: $15.00 postage $2.50
Available from: Hawthorn Junior Field Naturalists Club, c/- 5/24 Richards Street, COBURG, 3058. Proceeds to FROGWATCH. Excellent companion to Melbourne University 'Calls of Victorian Frogs' tape (see Vol 1 No. 1 p 12). For more information on Frogwatch contact the Wetlands Unit, Department of Conservation and Environment, P.O. Box 41, East Melbourne, 3002; tel. 412 4011.

Special Book Offer

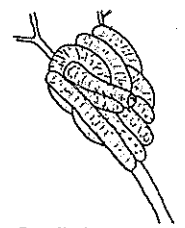
The Bird Observers Club of Australia has arranged for a special discount price on Leon Costerman's excellent reference **Native Trees and Shrubs of South-eastern Australia.** This book is available to members of *Land for Wildlife* for $32.00 (including handling and postage). Rec. Retail is $39.95. This book provides easy identification to over 900 native species. It includes regional guide lists and full colour photographs. Covers all native species over 1 metre. Does not include non-natives. We will refer to this book frequently in the newsletter and 'Notes'. Payment can be made by Bankcard, Mastercard, Visa or cheque and should be sent to Bookshop, Bird Observers Club of Aust., P.O. Box 185, Nunawading, 3131. Ph 03-877 5342. You should state where you saw this offer (LFW News p10). Delivery will occur within 28 days or you will be notified otherwise.
Editor: I would be pleased to receive nominations for books, that are standard texts and should be part of any *Land for Wildlife* library, so that we might arrange similar discount offers to benefit members.

Beauty & the beast

Sawfly larvae, commonly called spitfires, those gregarious black caterpillars that eat our new trees and spit a horrible fluid when threatened, are disliked by many people. On the other hand, the intricate designs of many native orchids attract our attention and sympathy. You might be surprised to find an orchid that would not exist without these common caterpillars.

The male sawfly, the adult form of the caterpillar, is a pollinator of the Large Duck Orchid *Caleana major*. The hood of the orchid is triggered by the presence of a sawfly and closes on the insect long enough to deposit its pollen - thus the amazing shape of the orchid. Without the sawfly pollinator the orchid could not survive. Such interdependent relationships are common in nature. If the pollinator is lost, so may be the orchid it pollinates. Whilst nature's links are complex and we have only limited information on their extent and complexity, there are a few simple rules you can follow in managing or re-creating bushland for wildlife. For example, the use of local native species will help recreate the natural web for that area. Use of other plants may not complement one another and, in some cases, can be directly deleterious. Similarly, all native species, even the 'ugly' ones, have a role to play in the environment. **Further reading:** *Natural Victoria*, Pescott, T., (1934), Rigby p 79. Sawfly. Gould League booklet on orchids. From a talk by Cecile Falkingham.

Large Duck Orchid



Sawfly larvae

Rates and taxes

The following information is taken from **1. An article by Steve Matthews in Local Environs, April 1991.**

Section 169 of the Local Government Act 1989

Under Section 169 of the Local Government Act 1989, councils may grant rebates or concessions on any rate levied on land of environmental significance. Proposals should contain evidence to support claims of a property's environmental values, with benefits to the community being clearly outlined.

Differential rating

Section 161 of the new Local Government Act will allow councils to set differential rates for different classes of land, provided they use the capital improved system of valuation. Councils that do not adopt the capital improved system will still be able to set different rates for farms and urban farmland. To qualify, land must be used for agricultural purposes (differential rating will not be proclaimed until Oct 1992).

Rezoning

Applications for rezoning may be possible if a property of environmental significance is rated too highly through inappropriate zoning. This can be a long process.
2. Australian Forest Grower, Spring 1989. Michael Hall 'Federal Taxation applying to trees on farms for purposes of primary production'.

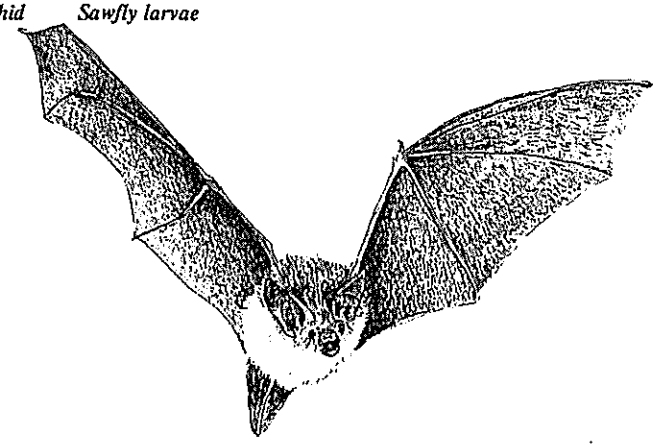
Tax deductions

The Income Tax Assessment Act recognises the importance of retaining and using trees on farms for a variety of purposes. Arresting land degradation, including tree establishment and fencing, is deductible for primary producers (section 75D(1)), tree establishment and maintenance (section 51), as well as commercial applications may also be deductible. We suggest that you talk to your council and tax adviser about these matters. In future editions, we hope to provide more detail relating to *Land for Wildlife*.

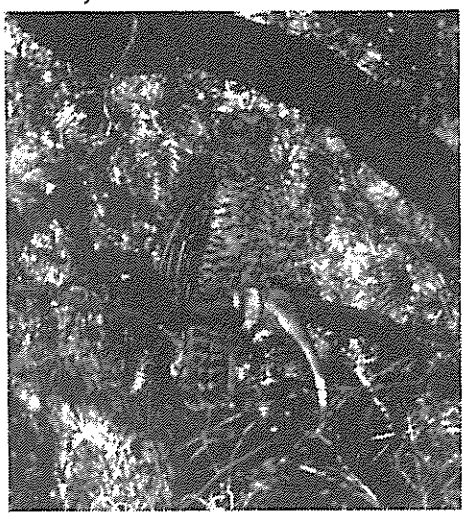
Living with Wildlife

Feeding wildlife is a popular activity but one that has serious consequences for wildlife. For example, White-winged Choughs (pronounced chuff) *Corcorax melanorhamphos*, are attracted by donations of bread provided by landholders wishing to observe these birds. This has resulted in artificially high populations of choughs. Choughs feed in groups. When not being supplied with food from our larder, they seek natural foods. A group of choughs can cause tremendous disturbance to the bush. One food item that can be severely affected are orchids. The choughs dig up the orchid tubers and will systematically excavate complete colonies of orchids. This probably occurs to some extent in nature, however, the artificially high numbers of choughs and acquired taste for high-starch foods, such as bread supplied by people, is having major unnatural consequences for orchid populations in foothill areas north of Melbourne and perhaps elsewhere. Feeding animals leads to many other consequences such as the flocking of starlings with rosellas at Wilson's Promontory National Park. Habituation to and reliance on humans, rather than natural sources of food, can disrupt natural feeding patterns and lead to dietary imbalances. When our supply of food is suddenly stopped, so the dependent animal is suddenly left without food and faces starvation. It is believed that much of the Sulphur-crested Cockatoo damage to houses, particularly those constructed of Western Red Cedar, is exacerbated by the attraction of birds to feeding stations in the area. The cost can be substantial to the unfortunate home-owner. Most animals find reliable sources of food in a variety of habitats, perhaps switching between different sources at different times of the year. **We suggest that if you are concerned about the welfare of the wildlife then you do not feed wildlife.** Regular feeding is to be avoided at all costs. The occasional food left out to attract a few animals, perhaps when you have some international friends visiting and you want to introduce them to our wildlife, is likely to be less harmful.

Stephen Platt, from comments by Cam Beardsell, Ian Temby.

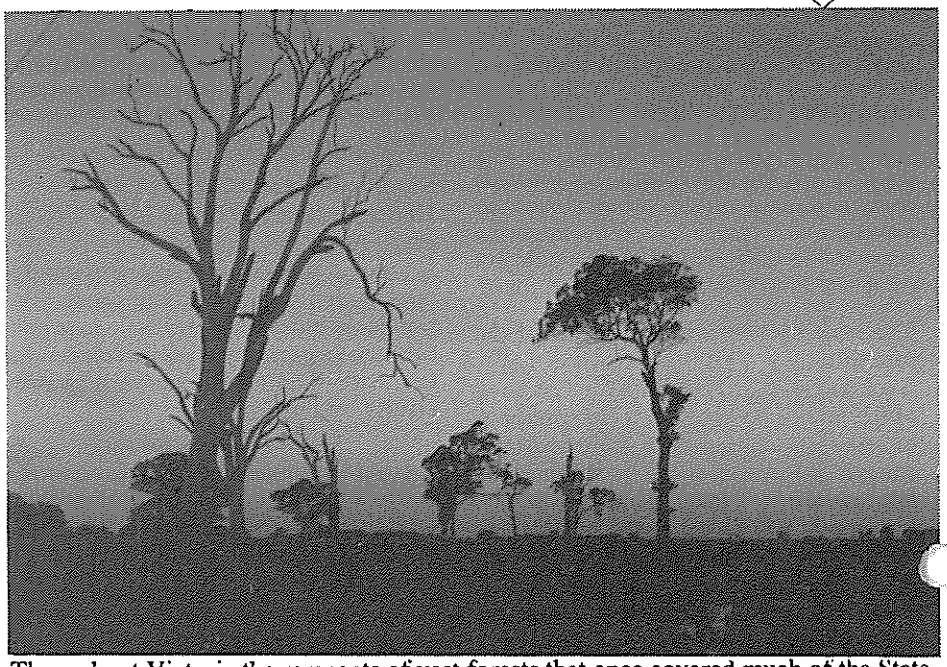


When the naturalist Gerard Krefft asked aboriginal people on the Murray to collect bats for him they refused because they regarded them as 'a departed friend and relative'. When Krefft caught one himself he was told it was 'brother belonging to black-fellow who kill lubra if you kill him'. From Dingle, A.E. (1984) Settling, p 15, Fairfax Syme Weldon & Assoc. Greater Long-eared Bat sketch courtesy of Sharyn Wragg.

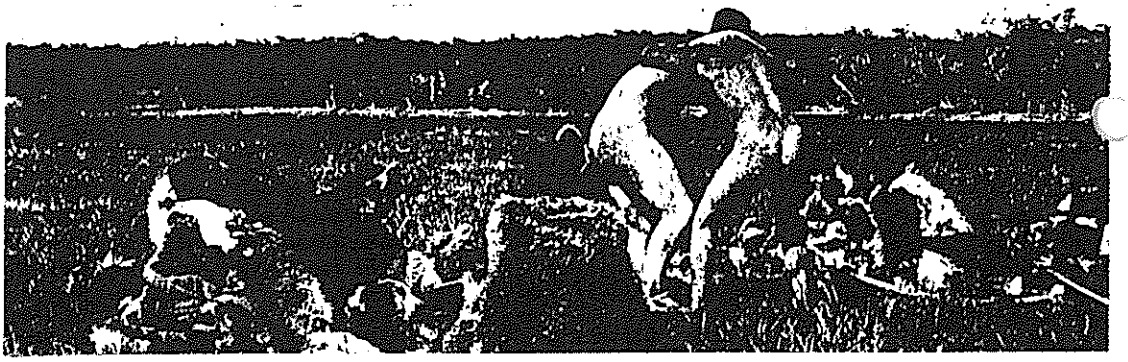


The Powerful Owl, *Ninox strenua*, is the largest of its kind in Australia. Greater Gliders, *Petaurus volans*, Common Ringtails, *Pseudocheirus peregrinus*, and Sugar Gliders, *Petaurus breviceps*, are the most common prey items. Recent studies by Rod Kavanagh in NSW have shown that this owl can virtually 'eat out' an entire population of its prey. It is suggested that this is the reason for very large distances between the home ranges of Powerful Owls, the intervening areas being in a state of reduced prey populations, and highlights the need for corridors to facilitate recolonisation of areas devoid of these mammals following losses due to Powerful Owls. Despite the abundance of the Yellow-bellied Glider, *Petaurus australis*, it is rarely taken by Powerful Owls. Whilst studying the Powerful Owl in south-eastern NSW Paul Peake recently reported Yellow-bellied Gliders 'mobbing' a tape recorder playing Powerful Owl calls. In one case it was observed that the Gliders chased a real owl away. Self defence might be an explanation for the very conspicuous vocalisations and unusual behaviour of Yellow-bellied Gliders.

References: Kavanagh, (1988) Aust. J. Ecol. & 'The Age', 28/11/88, **Night nemesis feasts on hapless greater gliders.** Paul Peake, 'Man bites dog - Glider bites owl!!' The Australian Mammal Society Newsletter, Autumn, 1990. LFW News Vol1, No. 2, p1, 12. Photo: Ian McCann.



Throughout Victoria the remnants of vast forests that once covered much of the State now stand as isolated trees in farm paddocks. Many of these trees are now in the latter stages of their life and are plagued by the various diseases and ailments of old age and stress caused by isolation and a disrupted ecology. They are dying. Dying from dieback, a 'disease' with many causes. Often the trees that remain are now sterile or, in the case of bisexual plants such as Casuarina's, only one sex may be left. Many others have been blown over due to exposure in the recent strong winds. The contribution of these plants, as providers of shade, in improving the aesthetics of country Victoria and as wildlife habitat, is being lost. Some estimates suggest most will be gone in 10-15 years. Something can be done to halt this decline. We must aim to restore a 'healthy' ecosystem, allowing for natural regeneration, natural pest control , nutrient recycling, and so on. You can save this asset on your property by - fencing off the area from stock, encouraging natural regeneration or planting the full range of local native species that naturally occur in the location and soil type. Photo: Stephen Platt.



The indians of Tierra Del Fuego, at the southernmost tip of South America, live in a harsh environment of extreme cold and strong winds. The Feugian tribe of indians, whose metabolic rate was greater than ours, allowing them to survive in spite of minimal clothing and shelter, is now extinct. Here is a group of humans, unlike us, adapted to an environment we could hardly survive, now lost forever. There is variation in populations of all animals and plants. This is particularly true of many plants because they lack the ability to move and are subject to very localised environments. A Red Gum from the Murray is not the same as one from the north of Melbourne. Botanists will record them as the same species, meaning they share many similar characteristics, but this does not mean that they are the same. The native species on your property are unique, they may even be rare on a regional basis. Like the Fuegan indians they are worth protecting. This will require some care on your part. For example, use of natural regeneration will ensure the survival of local plant species. Check with your nursery to ensure that 'natives' are of local origin. Try not to introduce foreign material to existing habitats. Don't plant environmental weeds or allow pest species to thrive at the expense of natives. Life of Feugan indians from Life Nature Library, 'Evolution' (1962) by Ruth Moore, Time Life International.