LAND FOR WILDLIFE NEWS

Newsletter of the LAND FOR WILDLIFE scheme

Protecting Riparian and Aquatic Habitats in the International Year of Freshwater

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Revegetation along the riparian zone of the Campaspe River.
Photo: Angela Gladman, North Central Catchment Management Authority

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BOCA Appreciation Education Conservation

LAND FOR WILDLIFE Voluntary Wildlife Conservation

Victoria The Place To Be

Land for Wildlife News
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Statewide Coordinator and Editor, Pam Clunie Department of Sustainability and Environment, Box 3100, Bendigo Delivery Centre, Bendigo, 3554.
Tel: (03) 5430 4363
Fax: (03) 5448 4982
Email: pam.clunie@dse.vic.gov.au

See page 16 for a list of where Land for Wildlife Extension Officers and Contacts can be found.

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Editorial

Dear Land for Wildlifers,

Welcome to another edition of our LFW newsletter. I hope you can look back on 2003 with a sense of pride and accomplishment in your achievements in conserving and protecting habitats and wildlife on your land.

This edition of our newsletter celebrates 2003, the International Year of Freshwater. The main aim of this international campaign was for us all to focus our attention on protecting and respecting our water resources, as individuals and communities. Water plays such a crucial role in almost every facet of our lives and it is important that we are aware of both its value as well as its vulnerability. Sadly, freshwater environments have suffered many forms of degradation and decline since European settlement, including changes to flow regime, loss through drainage, decline in water quality and loss of biodiversity.

This edition of the newsletter includes encouraging stories of communities and individuals playing their part in protecting, restoring and monitoring aquatic environments - from the Campaspe River to a saltmarsh on the Bellarine Peninsula.

In September 2003 we ran our 3rd annual Open Property Scheme across the State. I'd like to thank all those landholders who welcomed us to their land, as well as the guest speakers and LFW officers who organised the events. I hope the days were enjoyable and educational for all those who participated.

On a sad note, we recently farwelled the wonderful John Seebeck, an inspirational ecologist who worked tirelessly for the department for 43 years.

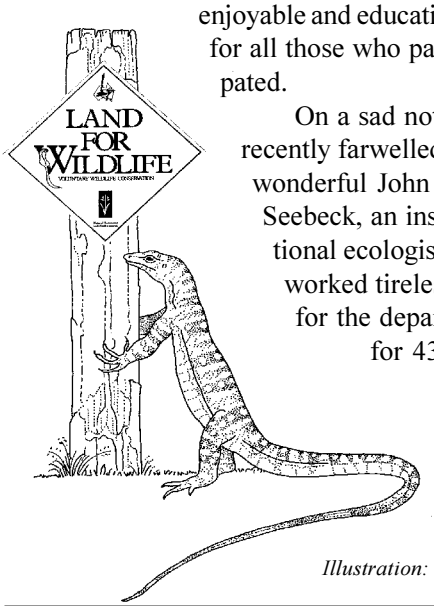

Illustration: Alexis Beckett

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Website

Go to **www.dse.vic.gov.au** and enter via plants and animals, native plants and animals and then Land for Wildlife

www.dse.vic.gov.au/notes/

Ian McCann also passed away recently, a wonderful naturalist and the author of many valuable books.

By the time you receive your next newsletter, Felicity Nicholls will be back at work. I'm sure she is looking forward to getting back to the job. So this is my last LFW newsletter and I'll be moving on around April. I have had a wonderful time and have been inspired by the many LFWers who I have had contact with and have heard about. I congratulate you all on your interest and committment to conservation, both in protecting existing important habitats and enhancing and restoring habitats for our native wildlife.

Pam Clunie, Statewide Coordinator
Land for Wildlife

Visit the Land for Wildlife Web site at www.dse.vic.gov.au

and enter via 'plants and animals', 'native plants and animals' and then 'Land for Wildlife'

LFW MEMBERSHIP	PROPERTY AREA	RETAINED HABITAT	HABITAT UNDER RESTORATION	NEW PROPERTIES SINCE LAST EDITION
5881	562,590 ha	135,138 ha	23,615 ha	89

Figures include reductions to areas due to de-registrations of properties. Current at 10 December 2003.

Letters to the Editor

Our 'Letters to the Editor' this issue come in the form of two photos provided for Bush Detective from Don and Diane Howe and the Robinson-Koss family. Turn to page 5 to find out more.

Helping small land holders develop natural resource management skills

Over the past decade, there has been a significant 'urban push' with individuals, couples and families choosing to live a rural lifestyle. This change which has been a boost to many dwindling rural populations has been witnessed by organisations such as DSE and DPI.

However, skills required to manage land and the environment sustainably are often lacking. Managing the natural landscape is one skill that, if done poorly, can have a big impact on not only the landscape, but also the whole community.

So as a small landholder or manager, where do you get the necessary skills? A number of courses that target natural resource management training have been subsidised by FarmBis (a subsidy program for primary producers and land managers). Subsidies of 75% and 90% for some of these courses are available to primary producers and land managers.

Courses run across the State at varying locations and times. For more information, contact Sam Simpson, Senior FarmBis Coordinator on 5233 5584 or ring 136 186 to contact your local FarmBis Coordinator. Examples of courses available can be found on page 16.

Sam Simpson

Vale John Hilary Seebeck 1939-2003

On 8th September the Victorian community and environment lost John Seebeck, a tireless worker for wildlife conservation, and the sciences of zoology and conservation biology.

For many decades, John was a stalwart of zoology, mammalogy and conservation in Victoria. He joined the Wildlife Research Section in the then Fisheries and Game Department in 1960. This provided a springboard for better conservation in Victoria, long before 'biodiversity' and 'sustainability' were words on the community agenda. His love and enthusiasm for wildlife, its scientific study and conservation remained a primary driving force throughout his 43-year career in this department - the longest of any currently serving officer in DSE.

Apart from his distinguished contribution to the scientific study of Australia's and particularly Victoria's native fauna, John is remembered for his mentoring and guiding role to several generations of Victorian wildlife researchers and ecologists. These people remember John as a friendly and insightful scientist and conservationist, who willingly imparted his experience, knowledge, and that elusive virtue, wisdom, to many a debate, project and emerging career.

John had worked in most parts of Victoria from the alps and mountain forests to the western grasslands and coastal heaths - he knew the fauna. In 1980 John formally described a new species, the Long-footed Potoroo (*Potorous longipes*), the last medium to large mammal to be described from Victoria. Also in the 1980s, John played a central role in the continued conservation of the endangered Eastern Barred Bandicoot *(Perameles gunnii*) in western Victoria - pioneering work in what was to evolve into "Recovery Planning" for our threatened species.

John was an active member of the Australian Mammal Society and was made an Inaugural Fellow of the Society in 2003, in the same year he received its highest award - the Ellis Troughton Memorial Award. John published many scientific papers and edited numerous books on conservation and mammalogy. He remained an active member of the Field Naturalist's Club of Victoria, where he brought his scientific and conservation expertise direct to the community.

Apart from his legacy to science and publications, John's contribution to conservation lives on through all the people he has inspired, mentored, trained and collaborated with. John played a pivotal role in exposing to us all the plight of many of our native species - from quolls, bandicoots, potoroos to native rodents and bats - they have all lost a true champion. May he rest in peace. We must honour him by continuing the work he loved.

Peter Menkhorst, Ian Mansergh and Adrian Moorrees, DSE

Ten LFW Properties Open their Gates to the Public

An impressive display of the nest boxes built by Paul Davey to establish on his and Jennifer Johnson's property near Creswick. Photo: Elspeth Swan

To celebrate Biodiversity month in September, Land for Wildlifers once again opened their properties to the public. This was the 3rd year that the Open Property Scheme has been running, and 10 properties were open across the State.

Over 300 people attended the events, which ranged both in types of habitats and activities. Many of the events involved hearing of the experiences of landholders in restoring and protecting habitats on their land, as well as guided tours and talks from experts.

Over 20 people attended a wildlife spotlighting tour at the Wyungara Nature Sanctuary near Lakes Entrance. During the spotlighting tour, visitors were very fortunate to see two Yellow-bellied Gliders feed for several minutes before one magnificant beast soared over their heads!

Dr Alan Yen demonstrates how a beating tray can be used to survey insects. Photo: Kate Mackie

Visitors were able to admire a stunning property at Christmas Hills which comprises Grassy Dry Forest and Herb-rich Foothill Forest. About 30 people heard from Dr Alan Yen who gave a facinating talk about insects and their important place within the ecosystem and then demonstrated the equipment he uses when undertaking surveys. This included a beating tray - a large canvas sheet on a frame which is held under a tree and then hit with a stick. It was amazing to see what insects landed on the tray and how these varied from eucalypts and wattles. This talk was followed by a pleasant walk around the property.

Another property, 'Karrik' on the Mornington Peninsula was visited by over 60 people who were able to take themselves for a self-guided tour of the property armed with tour notes, a map and instructions. This enabled visitors to see first hand a happy marriage of high quality habitat management and sustainable horse grazing and to pick up some tips about how to maximise the health and productivity of pasture. Visitors gathered in a shed for afternoon tea where there was plenty of lively discussion and sharing of experiences.

Meigan Waayers demonstrates direct seeding equipment. Photo: Geoff Harvey

At the Crinigan Road Bushland reserve at Morwell, about 50 people heard from a representative from the Committee of Management about the reserve's history and management issues which range from fire management, creating frog habitat, plans to create a wetland, controlling weeds, and the importance of raising community awareness to look after the reserve. Kylie Singleton, the Land for Wildlife Extension Officer in Traralgon demonstrated how to press plant specimens. These talks were followed by a walk through the reserve and a BBQ lunch.

Over in Franklinford, about 50 visitors were fortunate to hear from the Sartoris about the geology and history of their large property which includes about 1km of stream frontage along Jim Crow Creek (see LFW News 5_5, page 9 for their story). Visitors undertook bird surveys in three different habitat types found on the property. After returning to the old milking sheds for a BBQ, Dr Jim Radford interpreted the results of the bird surveys and explained why particular species were found in certain habitats. Thirty-nine native species were recorded, including some exciting records for Scarlet Robins and Speckled Warblers.

At Mt Hooghly near Dunolly, visitors were able to inspect a large ex-grazing property where revegetation and habitat protection is occurring. The landholder, Alby Wright spoke of his and partner Eleanor's plans. Geoff Harvey, Land for Wildlife Officer in St Arnaud, and Meigan Waayers salinity project officer DPI, spoke of conservation issues and direct seeding of the property.

These represent just a few of the activities which occurred over the 10 Land for Wildlife properties open in September.

Land for Wildlife would like to thank all the property owners who kindly allowed visitors to inspect their properties. Such opportunities represent a strength of the scheme, where like-minded people are able to meet and learn from each other, discuss ideas and see the fruits of their enthusiastic endeavours.

Pam Clunie, Land for Wildlife Coordinator

Bush Detective
Who made this?
Who did this?

Don and Diane Howe, LFWers from Lake Tyers, were thrilled to recently observe a juvenile Satin Bowerbird on their property putting on quite a display - dancing around, spreading his tail and flapping his wings.

Satin Bowerbirds build and decorate a bower to attract potential mates. The bower consists of two walls of sticks, which are then decorated with blue coloured objects - these objects can often include bottle tops, pen lids, feathers and flowers. The walls of the bower are painted with saliva and chewed up material. The male will maintain the bower throughout the year, while the breeding season usually occurs from September to February.

When a female is present, the male will put on a ceremony such as the one Don and Diane observed. These exaggerated movements are accompanied by a range of calls. If the female is impressed, she will move into the bower for mating, and will then leave to build her own nest in a tree where she will care for the young by herself. Males may mate with several females in a season.

Satin Bowerbirds occur in eastern and south-eastern coastal areas of Australia. They are found in rainforests and the edges of drier forests.

Photo of bower: Don and Dianne Howe
Photo of bird: BOCA

Photo: The Robinson-Koss family

The Robinson-Koss family wondered what had caused this damage to a Messmate *Eucalyptus obliqua* on their property near Colac. The bark is most likely to have been stripped off by Yellow-tailed Black-Cockatoos *Calyptorhynchus funereus.*

These birds mainly feed on seeds of native and introduced trees and shrubs, wood-boring insect larvae and sometimes seed capsules, nectar and blossom. It is thought they find the larvae by visual signs on the surface of trees and by listening to their movements behind the bark. These birds have very tough beaks, and can tilt their heads to one side with their ear against the bark, listening to the invertebrates inside. They will then tear off large strips of bark to reach their prey.

Did you know.....?

Mosquitofish *Gambusia holbrooki* are small fish, native to America, that were released into Australia in the 1920s to control mosquitoes. Their value as a control method if questionable, and unfortunately this species has now spread far and wide, particularly in south-eastern Australia. They occur in many different habitats, from rivers, farm dams, to small ponds. The species is very hard to control.

While we still need to learn more about the species' impacts, we do know they can predate on small native fish and some frog speces. They are very aggressive and can 'fin nip' other fish and cause them stress. You've no doubt seen these fish - large numbers can often occur at the edge of waterbodies near the water's surface.

Illustration: Trevor McKay

A Success Story along the Campaspe River

On the 24th September, landowners from along the Campaspe River celebrated the completion of a large-scale project to improve the health of the river from Barnadown to Echuca with a BBQ. The project, which involved a community effort between the North Central Catchment Management Authority (NCCMA), local landholders and community groups, has been a prime example of successful partnerships in natural resource management.

Following a significant amount of local interest in improving the health of the Campaspe River, the NCCMA applied for and received Natural Heritage Trust funding on behalf of the local community.

The project aimed to improve water quality by maintaining a sediment and nutrient filter from surrounding paddocks while increasing the biodiversity and habitat of the river environment. Many rivers and streams in Victoria now experience water quality problems because of high nutrient and sediment levels. This is largely a result of past clearing of riparian vegetation, fertiliser runoff and unrestricted stock access. Riparian vegetation acts as a filter, slowing the overland flow of water and allowing sediment and nutrients to settle out before they reach the river. Therefore revegetation and fencing of riparian areas can play an important role in improving water quality.

The benefits of improved water quality to the landholder include better stock management, decrease in insect pests on farms, shelter for livestock, lowered water tables, an increase in capital values, increased fish stocks and fewer algal blooms.

Throughout 2001/02, over 20 enthusiastic landholders and community groups took part in the project, including a number of Land for Wildlifers. While NCCMA Project Manager Angela Gladman attended local Landcare meetings and held several field days to promote the project, above all, word-of-mouth was the best way of engaging the community.

Photo: Angela Gladman

The project attracted a further 11 property owners from along banks of the river from Barnadown to Echuca. A total of approximately 31km of fencing materials were provided and erected by landholders at a minimum distance of 10m from the top of the bank. Fences were often erected up to 60m from the river which allows the area to be managed differently: as a supply of emergency feed during drought or as a sheltered paddock for newborn or newly shorn sheep.

In some cases, an alternative source of water was required and offstream watering equipment was supplied.

Reduced grazing pressure along the river encouraged the natural regrowth of River Red Gums and native grasses. However, due to a long history of grazing and clearing since European settlement, few shrub species reappeared naturally as their seeds have long since lost their viability in the soil. Approximately 120,000 shrubs and grasses have been planted along the fenced riverbanks beneath the River Red Gums. The seeds were collected from as near as possible to the Campaspe River and grown at local nurseries. Plantings occurred during winter/spring over 3 years. Despite recent dry weather, a 50–70% survival success rate was achieved, providing a sparse cover of shrubs.

In the past 2 years, 30km of direct seeding has occurred on some properties, particularly along the wider frontages amongst the River Red Gum woodland. This method is considerably more resource-efficient, however, follow-up rainfall and grazing by wallabies and rabbits influences results.

In about 3 years time, the plants will have matured enough to allow controlled grazing within the fenced areas to restrict excessive grass and weed growth, although the shade provided by the shrubs is expected to outcompete the majority of weeds.

Projects such as this, which tackle protection and enhancement of riparian areas along stretches of river, rather than individual properties, are likely to lead to greater improvements in water quality. So much can be achieved through cooperation and enthusiasm.

To find out more about improving the health of waterways in the North Central region of Victoria, contact the NCCMA on 5448 7124.

Angela Gladman, NCCMA Riverine Officer

Practicalities.... *handy hints and ideas*

Collecting Seed

Are you considering revegetating areas on your property? You may want to collect seed to establish vegetation yourself. You'll need to think carefully about the range of plants that you want to establish on your land (e.g. grasses, ground covers, shrubs, trees), and then consider how to obtain this material.

So where do you collect seed?
It is best to collect seed from the nearest patch of remnant vegetation with similar conditions to your property. How easy this will be depends on how much remnant vegetation exists nearby and if you can access such remnants.

Permission to collect seed
There are regulations in Victoria relating to collecting seeds. To obtain seed for most plants from private land, you'll need the owner/manager's permission; if on public land you'll need a permit. There is a range of permits required for different types of public land, and so it's best to ask the advice of your local DSE Flora and Fauna officer on what you'll need to do.

So when should I collect seed?
Timing is everything! Naturally, different species flower and then produce seeds at different times of the year. With some keen observations, you can note which plants flower when – your early warning that seeds are on the way. Try and be ready to collect material when seeds have matured. There are many different types of fruits and seeds - obvious woody capsules and seed pods, papery capsules, nuts, berries and the grains of grasses.

There are signs you can look out for when seeds are maturing. Fruits will change colour, the surfaces of woody capsules will begin to harden or become dry and brittle, some grains and berries will fall off the plant easily, and some seed capsules will open. For many species in Victoria, the best time to collect seeds is between November and March, during the warmer and drier time of the year.

So how do I actually collect seed?
Take care when collecting seed to minimise any damage to plants, and only take material you need. Collect seed from a number of plants in an area (>10) – this increases the genetic variation and reduces the amount of material taken from each plant. Avoid overcollecting from specific plants or specific populations.

There are several ways to collect seed, the ease of which depends on the size and characteristics of the plants. Obtaining seed from tall trees usually requires experience and specialised equipment. Collecting material from shrubs and ground covers is much easier. For such plants you may be able to pick material by hand or shake it into a large bag or onto a trap. You can also place bags around parts of the plant to capture seed; such bags must allow light and air through, so materials such as stockings are suitable.

Once you've collected your material, you need to allow it to dry out for a few days (on a tray or trap in a warm space) in order to separate out the seed from the fruits and other plant material. This is straightforward for most species when the seed is ripe and ready for release. Shaking the material may allow the seeds to drop out; using a sieve can help in this process.

Make sure you label your seed supplies when you collect them, so you always know what you've got (e.g. location, species, date collected, number of plants collected from). Seeds can be stored if properly dried and kept in cool, dry conditions in airtight sealed containers. Once you've collected your seeds, you'll be ready for the next step – either to use them in direct seeding, or to propagate plants in growing trays. We'll explore how to grow plants from seed in our next LFW newsletter.

If you are keen to try collecting seed, there are many useful resources available. Much of the information in this article comes from a great book "Seed Collection of Australian Native Plants" (1999) by Murray Ralph. Try out the FloraBank website (www.florabank.org.au/) or Greening Australia website (www.greeningaustralia.org.au/GA/NAT/) for more information.

Pam Clunie, Land for Wildlife Coordinator

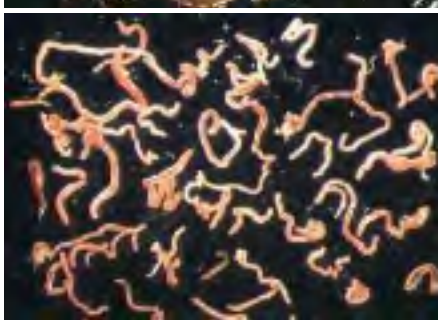
Above: Acacia seeds almost ready for picking. Photo: Ian Higgins

Testing the Waters in Kororoit Creek

Left: Testing the water along Kororoit Creek.
Photo: Waterwatch Victoria

Top image: An example of a water sample of good quality - see the wide diversity in species which are pollution sensitive.

Bottom image: An example of a water sample of poor quality - the sample only consists of worm and midge species which are pollution tolerant.
Photos by Frank Coffa, and taken from a Waterwatch poster "Small critters painting a big picture" by Phil Papas. Available for download from the ARI website www.dse.vic.gov.au/ari, under publications.



Kororoit Creek runs through industrial and suburban areas on its journey through Melbourne's western suburbs and out into Port Phillip Bay. Houses and factories face each other across the creek corridor in some areas. The residents of some of these houses have watched the decline of the Kororoit Creek corridor, and now they have taken the matter into their own hands. Along with plantings, rubbish removal and weeding activities the Friends of Kororoit Creek are also testing the waters.

The creek has been a Waterwatch site since 2000 when the highly motivated group started weekly testing at 7 sites. A group of 14 Friends organised a Waterwatch equipment roster to each conduct monthly testing of a site. Jason Summers then working as the Brimbank Council Environment Officer assisted the group to get going. "The residents really wanted to look after and improve the creek and their dedication has really driven the results".

John Zitta lives 200m from the creek and tests his site with help from his children. "The kids enjoy doing the testing and my nine year old son especially loves looking for invertebrates". During the Waterwatch invertebrate snapshot the Zittas found mosquitofish (bad) and shrimps (good) existing in the creek. John feels the work done over the past 10 years has helped make the creek look more like a creek and less like a dumping ground. "People used to swim in the creek. We are not back there yet but I have been in a few times during testing and it has not done any harm!"

The testing provides data that enables pollution incidents to be identified when results vary significantly from the baseline information collected by the group. Recently Sunshine magistrates court fined a company $40,000 for an EPA pollution breach in the creek. A proportion of this money is going back into local Waterwatch.

Waterwatch is now the proud owner of two La Motte Smart Colorimeters and three primary kits, which the Friends have access to. These instruments are the best available for field testing and are fully endorsed by the USA EPA.

The work being done along Kororoit Creek is a case of Waterwatch in action. Local people are being proactive in protecting and enhancing the natural amenity of their creek, which could so easily be lost to the ravages of rubbish and pollution.

Jane F. Ryan, State Coordinator, Waterwatch Victoria

Waterwatch

Waterwatch is a national water quality monitoring program that has been operating since 1993. Volunteers from the community collect water quality information which can help regional community and government agencies in their decision-making. Individual monitoring groups usually consist of people who live close to a particular waterway. These people know their area well and can observe changes on a regular basis.

There are many regional Waterwatch Coordinators around the State. If you're interested in becoming involved in Waterwatch, please check out the website at www.vic.waterwatch.org.au for information on regional activities and contacts, or ring Paul Puhar on 03 9412 4072.

Property Profile

Saltmarsh Provides Habitat For Orange-Bellied Parrots

Land for Wildlife volunteer assessors, most of whom are located in the east of the Port Phillip region, have been assisting local LFW Extension Officers for more than 13 years. For the last 5 months, Kate Mackie, our local LFW Extension Officer, and I as Coordinator of the LFW volunteers in the Port Phillip region, have been establishing a new group of volunteer assessors in the western half of the region.

Volunteer assessors have the opportunity to apply their knowledge of species, habitats, and ecological processes during property assessments in their local areas. This can be a rewarding experience for both the volunteers, and the landholders who benefit from this local input and advice. Jane Abbott and Brian Hart, both new volunteers on the Bellarine Peninsula, accompanied me during a recent property assessment at Queenscliff where they shared their knowledge of coastal plants and birds. The 4ha property, owned by Patsy Blair, includes an area of coastal saltmarsh, and an old shell-grit mine that is now a shallow brackish lake with islands.

The saltmarsh comprises a fairly narrow band of vegetation communities that vary in species composition from areas that are periodically submerged or waterlogged with saline water, to the better drained higher ground. Areas subject to regular inundation have vegetation including Shrubby Glasswort and Beaded Glasswort. Both of these species are food plants of the Orange-bellied Parrot. The vegetation of the higher areas, away from the influence of inundation, includes Sea Rush, Chaffy Saw-sedge, Coast Spear-grass, and Coast Saltbush. Sloping embankments around the lake and above the saltmarsh have been colonised and stabilised by Salt-grass, Bower Spinach, Southern Sea-heath and Rounded Noon-flower.

The property has an area that is about 1.5-2m above the water level of the lake. The vegetation of this area includes Boobialla, Coast Beard-heath, Coast Wattle, Coast Tea-tree, and Knobby Club-rush. The quality of this habitat has been degraded by the invasion of environmental weeds, and the planting of non-indigenous native species by previous owners.

In order to achieve her aims of restoring and maintaining habitat suitable for wildlife including Orange-bellied Parrots, Patsy has embraced the ongoing management tasks of hand removal of exotic grasses and other environmental weeds, prevention of nutrient flow from the household and garden, and monitoring of habitat quality and regeneration.

Jane's recognition of plant species, and Brian's identification of birds, including a Swamp Harrier seen overhead, Pied Oystercatchers (considered vulnerable in Port Phillip) on the island's water line, and a Great Crested Grebe on an adjacent area of water, have given Patsy a greater understanding of the significance and diversity of the species and habitats on her property.

John Hicks, LFW Volunteer Coordinator, Port Phillip

Above: Saltmarsh vegetation.
Below: The shallow brackish lake.
Photos: John Hick

OBPs

The Orange-bellied Parrot (*Neophema chrysogaster*) is considered critically endangered in Victoria, with a current population of only about 200 birds. It is a migratory species, spending its summer in south-west Tasmania, and visiting the coastlines of Victoria and South Australia in winter. In Victoria, birds mainly occur in western Port Phillip Bay, Bellarine Peninsula and the coast of western Victoria. While in Victoria, birds can be found in saltmarshes and sometimes also feed on the weed seeds growing in rough pasture near the coast. Reasons for the species' decline are likely to include competition for food, predation by foxes and cats, and parrot diseases. Recovery efforts for OBPs include protection of habitat, control of predators, research and yearly surveys to monitor numbers. For more information about this species, go to the DSE website, click on Native Plants and Animals, and find the Threatened Species Fact Sheet.

Illustration of Orange-bellied Parrot: Dawn Harris

Southern Ark about to Set Sail Without the Fox!

While the quick brown fox may have been able to effortlessly jump over the lazy dog, his forest-dwelling relatives in Far East Gippsland are about to find life increasingly more difficult!

The Ark is launched!

The end to their carefree, wildlife-gobbling lifestyle is being brought about by the commencement of an on-going fox control program that will be undertaken across one million hectares of public land east of the Snowy River. This exciting new project is known as the Southern Ark Project.

Illustration of Long-nosed Potoroo: Dawn Harris

Southern Ark is one of the largest and most significant attempts to improve biodiversity ever undertaken in Victoria. The primary aim is to significantly reduce the fox population in the far eastern corner of Victoria (approximately 5% of the State), thereby enabling populations of mammals, birds and reptiles to recover to their pre-fox level. Time and again it has been demonstrated that foxes have contributed to the decline of a large number of species in Australia, most notably those bandicoot and potoroo-sized mammals that live or spend a fair amount of time on the ground. A team employed by DSE will be involved in the program. DSE and Parks Victoria jointly fund the project, and the fox control program will be implemented on state forest land as well as in national parks and reserves.

The fox population will be reduced as a result of an ongoing baiting program. The baits contain the poison 1080, and are buried deep within specially constructed bait stations, that will be established at 1km intervals on the network of tracks running throughout the forest. The method of bait deployment is very important. By paying special attention to the way that the bait stations are constructed, we are ensuring that non-target species are effectively avoided. Foxes are willing and enthusiastic diggers in their efforts to find the baits, whereas quolls, goannas, dingoes and other native animals are not that interested. The bait stations will be maintained throughout the year, to ensure that once the resident fox population has been reduced any young foxes dispersing into the area are also likely to encounter a bait station and consume a bait.

Restoring the Balance

Mammals living in deserts and woodlands have suffered most from fox predation, and while the forests of Gippsland have afforded native mammals a higher level of protection, the fox has still had an impact. Eastern Quolls and Rufous Pademelons have disappeared, but they are still common on fox-free (until recently) Tasmania. The Brush-tailed Rock-wallaby is critically endangered in Victoria, with the last few animals hanging on to the precipitous rocks of the Snowy River gorge by their toenails.

Apart from the rock-wallabies, a wide range of threatened species exist in Far East Gippsland that will benefit directly from the reduction in the fox population, such as Long-footed and Long-nosed Potoroos, Southern Brown Bandicoots, Hooded Plovers, Sooty Oystercatchers and Diamond Pythons. Another suite of what are regarded as more common species, such as Common and Mountain Brushtail Possums, Common Ringtail Possums and Long-nosed Bandicoots, will also benefit from the reduction in the fox population. The native predators, such as Sooty, Masked and Powerful Owls, the Spotted-tailed Quoll and the Lace Monitor should all benefit indirectly, from the reduced competition from foxes, and the greater prey abundance.

Recovery of Ecological Processes

It is obvious that we want to see a recovery of those species that have been driven to the edge of extinction by foxes. Equally important, however, but much less tangible, is the reinvigoration of the wide range of ecological processes that forest-dwelling mammals are involved in. These processes include seed dispersal and pollination, soil aeration and the breakdown of the leaf litter. Their presence may even influence fire behaviour, as areas that support high numbers of ground-dwelling mammals tend to have less fine fuel (grass, twigs) on and near the forest floor.

One of the most interesting processes that mammals are involved in is the dispersal of the spores of particular hypogeal

(underground) fungi. These fungi live within the roots of particular species of trees, shrubs or grasses. The fungi are provided with a moist environment, and in return they assist the plants in the uptake of nutrients from our generally nutrient-poor soils. Research has shown that seedlings inoculated with fungal spores grew more vigorously than those seedlings that were grown in their absence. The fungi are therefore important to the overall health of the individual plant, and therefore probably to the forest as a whole entity. These types of fungi don't produce mushrooms or puffballs in order to disperse their spores. They produce underground sporocarps, or fruiting bodies, that rely on mammals to dig them up and eat them. The potoroos and bandicoots that eat the sporocarps are after a kernel of carbohydrate that lies at the centre of the sporocarp, surrounded by spores. The spores that are eaten are not digested, and are deposited in new locations, ready to inoculate the next generation of plants. Without these mycophagous (fungi-eating) mammals, the hypogeal fungi have little chance of being dispersed, and we can only guess at what this might mean for the overall health of the forest.

Why East Gippsland?

Far East Gippsland is an ideal place to undertake such a large fox control project, as it is mostly forested public land, with ecosystems still quite intact compared to the rest of Victoria.

The Southern Ark project follows the promising results of an earlier research project - Project Deliverance. Starting in 1998 this project aimed to develop and implement a cost-effective and fox-specific baiting technique, apply this technique to three large areas of forest, and monitor the response of the native mammals. The project's results showed clear benefits to native wildlife. Numbers of Long-nosed Potoroos in trapping programs at Cape Conran increased from about 1 or 2 before baiting in 1999 to up to 26 after baiting in 2003 - a very encouraging result (see figure).

Monitoring

The results of the Southern Ark baiting program will be monitored in several ways. A decline of bait-take by foxes as their numbers decline will be an obvious sign of success. Fox numbers will also be monitored using sand pads established at regular intervals across tracks - less foxes should mean less footprints. Scats will also be counted to measure fox density.

Native mammals will be monitored by regular trapping, dig counts (more potoroos should mean more digs!), and placement of hair tubes. Hairtubes are devices that lure animals in with a bait - the animals leave some hair on the double-sided sticky tape, which can later be examined and identified. More animals and more species should mean more lengths of hairy double-sided tape!

The Beginning of the End

It is often argued that we will never be able to get rid of the fox from Australia. While this is probably true, it may well be that we do not have to kill every single fox to ensure that our native species recover. While we hope that every single fox in Far East Gippsland does eat a bait, it is likely that a few foxes won't visit our bait stations and therefore survive. These few survivors will, however, have a great deal of difficulty in finding a partner with which to breed, and even if they do, their young will be at risk when they venture from the den. Eventually the fox population across great tracts of forest and coastline will collapse.

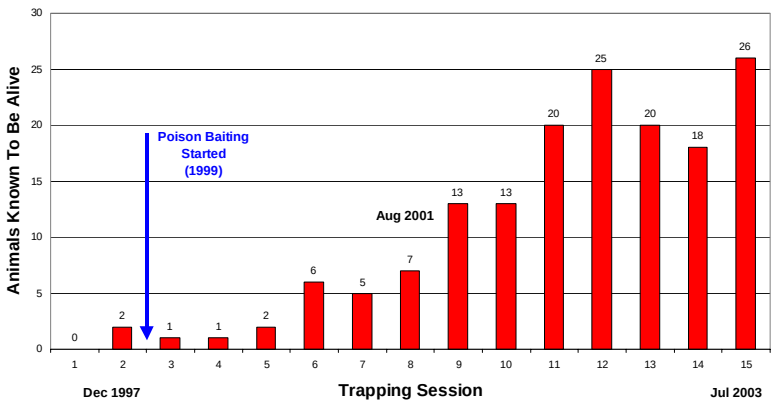
Foxes have been around in East Gippsland for over 100 years. The Southern Ark project will ensure that their domination of the bush comes to an abrupt end, and that the forest floor is once again alive with potoroos, bandicoots, possums and quolls.

Andrew Murray, Team Leader, Southern Ark Project, Forest Management Gippsland

More information about the Southern Ark project can be found at www.dse.vic.gov.au/southernark, or specific questions can be emailed to southernark@dse.vic.gov.au

Figure below shows how numbers of Long-nosed Potoroos trapped at a study site increased significantly over time, following effective fox control.

Long-nosed Potoroos Recorded at Cape Conran



Economic Benefits of Biodiversity

Managing Threatened Species on Farms

Agricultural clearing and management practices have contributed to the decline of threatened species of flora and fauna. However, farmland now provides the last refuge for some species, and some management practices may be compatible. For example, rotational grazing may have benefits to some threatened species as well as providing better financial returns for the farm.

A joint DPI/DSE project is currently looking at how to manage threatened native animals and plants on farms. The project's aims are to:

- improve the understanding within DPI agriculture extension and research programs of the need to conserve threatened species.
- document management techniques that combine protection of threatened species with profitable agricultural production.

In the long-term we hope to see:

- an increase in the viability of threatened species on private agricultural land.
- adoption of ecologically sustainable agricultural production practices by land-holders

This project will identify how agricultural practices might be modified to help conserve selected threatened species without affecting farm profitability. Research experiments have been set up for 7 threatened species in 4 bioregions: the Victorian Riverina, the Wimmera and the Victorian Volcanic and Gippsland Plains. Case studies are located on farms representing the meat, wool dairy and grains industries. Issues being looked at include grazing regimes, cropping practices, preparing whole farm plans, and previous management regimes. The threatened species being investigated are the Brolga, the Red-tailed Black Cockatoo, the Corangamite Water Skink, the Giant Gippsland Earthworm, the Strzelecki Gum, the Small Scurf-pea and Chariot Wheels. Details are provided below regarding two of the case studies.

Photo of Brolga: Matt Herring, photo of Small Scurf-pea: John Eichler

Brolga - Management of breeding wetlands in the Riverina and north-east Victoria

- To identify the effects of current wetland management and grazing regimes and Brolga breeding habitat availability.
- To determine practical management guidelines for maintaining, enhancing and creating Brolga breeding habitat.
- To determine if different land uses (e.g. cropping) adjacent to breeding wetlands are important for Brolga breeding habitat selection.

Small Scurf-Pea – Grazing season and strategy on the Western Plains

- To undertake research to assist in assessing if rotational grazing systems would be beneficial for the species, and the potential for Small Scurf-pea as a valuable summer fodder plant.
- To set up experiments to observe the effects of timing and intensity of grazing on growth, seed production and survival of the species.
- To measure the forage quality (digestibility and crude protein) of Small Scurf-pea through the growing season and compare this with other plant species present in the grassland.

Social and economic effects of the altered farm practices will be investigated during the project. It is anticipated that this research will be able to demonstrate benefits to maintaining native species on farms to balance out the costs. We will communicate the outcomes of the case studies to farmers via publications such the LFW newsletter, and field days associated with agriculture extension activities.

Annette Muir, DSE

For more info contact Annette on 9761 9893, or from

www.dse.vic.gov.au/land and water management/victorian resources online/ biodiversity/biodiversity in agriculture/threatened species and farming

Daughterless Carp May Help the Cause

Carp *Cyprinus carpio* is a native to Asia, however extensive introductions have helped to make it the world's most widely distributed freshwater fish. Given the poor perception of Carp as an eating fish in Australia, you may be surprised that it is the most farmed fish in the world and is considered quite a delicacy in areas in Europe and Asia!

While several different types or 'strains' of Carp have been introduced into Australia since the 1850s, the 'Boolara strain' has been most successful. Unfortunately these Carp were released into waterways in the 1960s and are now widespread throughout the Murray-Darling Basin and many other waterways in Australia. Carp can sometimes make up 90% of the total fish population in some rivers, with densities of up to one carp per metre recorded in some areas. Have you ever battled a fish on your line only to curse the appearance of a Carp?

Carp have become very successful in Australia because of their general habitat requirements and biology. They can grow rapidly, produce huge numbers of eggs (1.5 million for a 6kg female), tolerate many water quality conditions, disperse rapidly, are long-lived (30 years), and have a flexible diet. No wonder they have been called the 'rabbit of the waterways'.

Our waterways are degraded for many reasons - clearing of riparian vegetation, changes to flow regimes and temperature regimes, declines in water quality through input of nutrients and sediment, as well as the introduction of species such as Carp. This species is believed to degrade waterways by increasing water turbidity and water nutrient levels. Carp also damage some habitats by uprooting aquatic vegetation and competing with native fish for food and habitat.

One technology now being investigated by CSIRO and Pest Animal Control Cooperative Research Centre, following funding from the Murray-Darling Basin Commission, is the manipulation of carp genes to produce an inheritable 'daughterless' carp. This technique biases sex ratios toward males which over time may result in fewer and fewer females occurring in the population. Within 20-30 years of first release, carp numbers should be reduced. Since carp are long-lived and extremely abundant, it will take this amount of time to achieve results. The technology was first trialed on Zebrafish and is now being trialed with Mosquitofish since these species are quite short-lived.

A final decision on whether carp carrying the modified gene will be released will not be made until 2009. There are many details that still need to be worked out and the project is in its early stages. Here's hoping this technology continues to show promise.

It is unlikely that this technology, however successful, would lead to the complete eradication of Carp. A variety of methods will be needed to tackle the problem which include capture and removal, building screens to prevent entry to spawning areas, manipulating flow regimes to drop water levels at important times, and restoring instream and riparian habitats.

Significant reductions in the number of Carp within our waterways would be a great step forward in improving riverine health. Control of introduced species needs to be done in conjunction with many other management actions which include revegetation of riparian zones, restoration of components of flow regimes, improved fish passage, and restoration of habitat components such as snags.

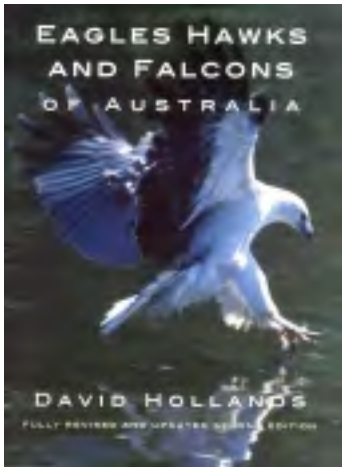
Pam Clunie, Land for Wildlife Coordinator.

Above: An adult Carp. Below: Numerous Carp seen around some snags at Barmah. Photos: Ivor Stuart, DSE.

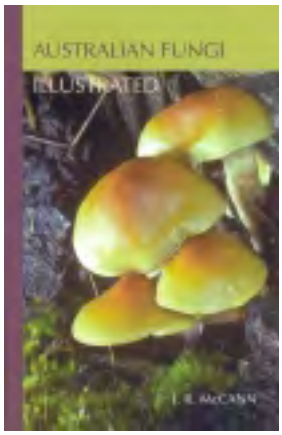
Recent Publications (see page 2 for member discount)

Foothills to Foreshore - A Field Guide to Selected Indigenous Plants of Southern Victoria Suitable for Cultivation. (2003). K. and P. Strickland. This field guide provides details about 200 indigenous plant species, including where they grow, types of soils they can be found in, hints on seed collection, propagating and growing. While Kathie provides the plant descriptions, Peter has drawn the illustrations. Both strong supporters of LFW, Kathie and Peter have written this book for local gardeners and those wishing to develop their properties using local indigenous vegetation. $32.95. Available from DPI/DSE Info Centre, local bookshops or from the authors, PO Box 31, Balnarring, 3926 or kpstrick@satlink.com.au

The Mornington Peninsula Through the Eye of a Naturalist. (2003). T. H. Sault. This new book presents a naturalist's account of his exploration of the Mornington Peninsula. It comprises informative and interesting text, colour plates of bushland and geographical features, drawings of native flora and fauna, maps and much more. The book is printed on a special gloss recycled paper and has a spiro-wire binder, which enables it to be used for easy reference during bush walks. The proceeds of the book will go to the Stefanie Rennick Book Bequest, Trust for Nature (Victoria) to fund selected conservation work on the Mornington Peninsula. $19.95. Available for Bloomings Books (03) 9427 1234 or email sales@bloomings.com.au



Eagles, Hawks and Falcons of Australia. (2003). D. Hollands. 2nd Edition. This beautifully presented book provides essays on the 24 species of eagle, hawk and falcon in Australia, drawn primarily from the author's observations. Also included is a comprehensive range of photographs and a new field guide which discusses field characteristics, voice, habitat distribution and breeding details. $49.95. The book is available from DPI/DSE Info Centre, bookshops or by mail order at a reduced price from the Green Book Company (03 9427 8866) or outside Melbourne freecall 1800 646 533 or email sales@greenbook.com.au



Australian Fungi Illustrated. (2003). I. R. McCann. This book represents a useful overview of the amazing diversity of Australian funig, featuring full colour photos of over 400 species of fungi. Both common and scientific names are provided, as are brief notes on habitat and substrates, and the months when photos were taken. $30.00. Available from DPI/DSE Info Centre (see page 2 for more details).

Ian McCann - An Appreciation

Ian McCann was born in Stawell, western Victoria, some 89 years ago and lived there for most of his life. As a field naturalist of the old school he was interested in the full spectrum of natural history. Living where he did he was ideally placed to explore not only the nearby Box Ironbark country, but also the semi-arid Mallee and Wimmera, as well as his beloved Grampians.

He started taking photographs shortly after he came home from WW2. Over more than 50 years he amassed a treasure trove of natural history transparencies. This collection provided the illustrations for the 9 books published under his own name and the many more to which he contributed. Ian's intention with his latest book, *Australian Fungi Illustrated* as with the previous ones, was that it be of interest to advanced naturalists and yet accessible to beginners and hopefully to encourage them to develop a greater interest in the natural world.

In the last week of his life he was able to take 2 "octogenarian shuffles" into the bush looking for orchids and fungi. He died peacefully on 29th July. He will be sorely missed.

Dave Munro

Conservation Properties for Sale

Wooragee. 'Nullegai' is a LFW property located in Wooragee via Beechworth in North East Victoria. 30 plus square brick veneer ranch style home on 40 acres. 10 acres suitable for grazing, olives or grapes and 30 acres of natural bush land. The property offers a spectacular panorama of the Wooragee Valley and the opportunity to enjoy the wonderful bird life, granite rock formations and wildflowers. Excellent car accomodation plus workshop and sundry shedding, 30,000 gallons of rain water for house hold use and dam and well for the extensively landscaped gardens. The home has four bedrooms, three bathrooms, two living zones and is suitable for B&B. Asking price $498,000. Contact agents Beechworth Real Estate Pty Ltd 03 5728 1999.

Strathfieldsaye. A picturesque well treed undulating 20 acre property divided into four paddocks with views of Mt Alexander, Mt Ida and the rolling hills towards Bendigo.The vegetation is box ironbark, including red stringybark, red box, grey box, with twiggy bush-pea, gold dust wattle, tangled guinea flower, cranberry heath and Bendigo wax flower. Wildlife seen on the property include breeding tawny frogmouths, stumptails, wood ducks, grass parrots and willy wagtails. There are also echnidas, kangaroos, wallabies, ringtail possums, yellow-footed antechinus, diamond firetails, currawongs, crimson and eastern rosellas and pelicans on the dam after storms. Part of the property (6 acres) adjoining state forest at the rear of the property is under Trust for Nature.

The 20 square home consists of three bedrooms, main with WIR and ensuite with spa, study, formal lounge and dining room, open plan family and meals area, large timber kitchen with magnificent 180 degree views. Wide 8 foot verandahs and a large pergola/BBQ area provide for outdoor entertaining amongst landscaped reticulated gardens. Shedding consists of large 50' by 25' three open bay/two bay enclosed workshop, woolshed, chook/feed shed, hay storage and machinery bay. 4.5 meg water storage capacity in two dams and 12,000 litre water storage for household use. Asking price $335,000. Contact owner 5439 6236 or 0419 504 276.

Cottlesbridge/Hurstbridge. A LFW 9 acre property of undulating bushland, mostly box and stringybark, some wattle and a variety of native wildlife and flora. The mudbrick and timber home is made up of 2 separate living areas (perfect for a B&B venture) or a large family. Upstairs has 2 bedrooms, bathroom, a kitchen and living room. Downstairs has an open plan large living area, 3 big bedrooms, countrystyle kitchen and bathroom. Car parking for 4 cars. Three rainwater tanks provide ample water for house and garden. Electric hot water. Panel heating throughout and wood heaters in living areas.A beautiful inground pool is a God send during the summer months. Relax in beautiful gardens surrounding the house and enjoy the evening sunsets. A perfect setting for those seeking a retreat, or for busy city commuter with a taste for country life. Only a short drive from Hurstbridge. Asking price $720,000. Contact Vicki 03 9714 8772, vickistar@minopher.com.au or Fiona 0438 930 187.

Have you sold or are you thinking of selling your Land for Wildlife property?

If you sell your Land for Wildlife property, please inform the Extension Officer or Statewide Coordinator. We can then alter the database and invite the new owners to join. **The Land for Wildlife sign is the property of DSE and needs to be returned or picked up.**

Advertising your property here is free to Land for Wildlife members.

Is it a Native? A Weed Identification Guide for Central Victoria. (2003) E. Perkins.

This weed identification guide for Central Victoria has been written for landholders, Landcare members and other interested people who wish to distinguish between native and introduced plants. It is an easy-to-use guide where you can identify a particular plant step-by-step by visually keying it out e.g. does it have large showy flowers, a distinctive growth habitat, small green or brown flowers etc? The CD includes weeds and some native plants that are sometimes mistaken for weeds. For each species there are clear photographs, and details on occurrence, identification and similar species. $5 (or $7 including postage). Available from Castlemaine Field Naturalists Club Inc, PO Box 324, Castlemaine 3450.

Land for Wildlife **Extension Officers are at the following Department of Sustainability and Environment Offices:**

Alexandra
- (03) 5772 0257
Bairnsdale
- (03) 5152 0410
Ballarat
- (03) 5333 6967
Benalla
- (03) 5761 1526
Bendigo
- (03) 5430 4368
Central and West Gippsland
- (03) 5172 2111
- (03) 5172 2550
Geelong
- (03) 9785 0134
Portland and Colac
- (03) 5523 3232
Melbourne area & Port Phillip East
- (03) 9785 0134
St Arnaud
- (03) 5495 1700
Wodonga
- (02) 6043 7947

Other *Land for Wildlife* contacts:
Horsham
- (03) 5362 0765
Swan Hill
- (03) 5036 4824

Bird Observers Club of Australia
PO Box 185,
Nunawading, 3131
(03) 9877 5342 or
1300 305 342
(country callers).

Courses/Field Days/Information Sessions

6 February 2004. Introduction to Seed Collecting. Victorian Landcare Centre. Cost $35, concession $20. Gayl Morrow (03 5345 2200).

17 February 2004. Habitat Conservation and Management Course. Greening Australia. 15 week course. Cost $880 or $88 for FarmBis subsidy. Whittlesea. Benita De Vincentiis (03 9450 5321).

25 February 2004. Small Property Design. Peppermint Ridge Farm, Tynong North. Cost $25. (03 5942 8580).

28 February 2004. Living with the Land - The Inaugural Mt Toolebewong Festival at Moora Moora. Near Healesville. Cost to be decided. Contact Festival Coordinator by email on bobrich@bobswriting.com or phone (03 5962 1535).

6 March 2004. Indigenous Plant Propagation. Victorian Landcare Centre. Cost $45, concession $30. Gayl Morrow (03 5345 2200).

12 March 2004. Establishing a Seed Production Area. Victorian Landcare Centre. Cost $35, concession $20. Gayl Morrow (03 5345 2200).

14 March 2004. Introduction to Sustainable Land Management. Peppermint Ridge Farm, Tynong North. Cost $220 or $22 for FarmBis subsidy. (03 5942 8580).

17 March 2004. Weed Management. Peppermint Ridge Farm, Tynong North. Cost $110. (03 5942 8580).

20 March 2004. Farm Forestry. Peppermint Ridge Farm, Tynong North. Cost $70 ($20 for Cardinia Shire residents). (03 5942 8580).

21 March 2004. Introduction to Landcare. Peppermint Ridge Farm, Tynong North. Cost $70 ($20 for Cardinia Shire residents). (03 5942 8580).

6 April 2004. Soil Ain't Dirt. Victorian Landcare Centre. Venue in Mortlake (to be decided). Cost $35, concession $20. Gayl Morrow (03 5345 2200).

18 April 2004. Grey Water Systems. Peppermint Ridge Farm, Tynong North. Cost $70 ($20 for Cardinia Shire residents). (03 5942 8580).

21 April 2004. Introduction to Sustainable Land Management. Peppermint Ridge, Tynong North. Cost $220 or $22 for FarmBis subsidy. (03 5942 8580).

28 April 2004. Weed Management. Peppermint Ridge Farm, Tynong North. Cost $25. (03 5942 8580).

FarmBis courses

Course Name	Training Provider
Box Ironbark Ecology	DSE
Native Grassland Management	Victorian Landcare Centre - DSE
Managing Our Water Resources Wisely	University of Melbourne
Master Tree Grower Course	University of Melbourne
Managing Our Water Resources Wisely	East Gippsland Institute of TAFE
Habitat Conservation and Management	Greening Australia
Grassland Identification and Management	Greening Australia
Soilcare: Managing Soil for Australian Farming Future	Integrated Agri-Culture
Environmental Management Farm Planning	Land Connect
Managing the Environment Profitably and Sustainably	Farm Business Consulting
Introduction to Sustainable Land Management	Peppermint Ridge Farm
Planning for Sustainability and Stewardship (Off Farm)	Peppermint Ridge Farm
Environmental Management Systems (EMS) for Agriculture (External Short Course)	CB Alexander College - Tocal
Sustainable Soils	Go Mark Sustainable Agriculture

See page 3 for contact details to find out more about FarmBis courses in your area.