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DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

Western Wildlife

NEWSLETTER OF THE *LAND FOR WILDLIFE* SCHEME
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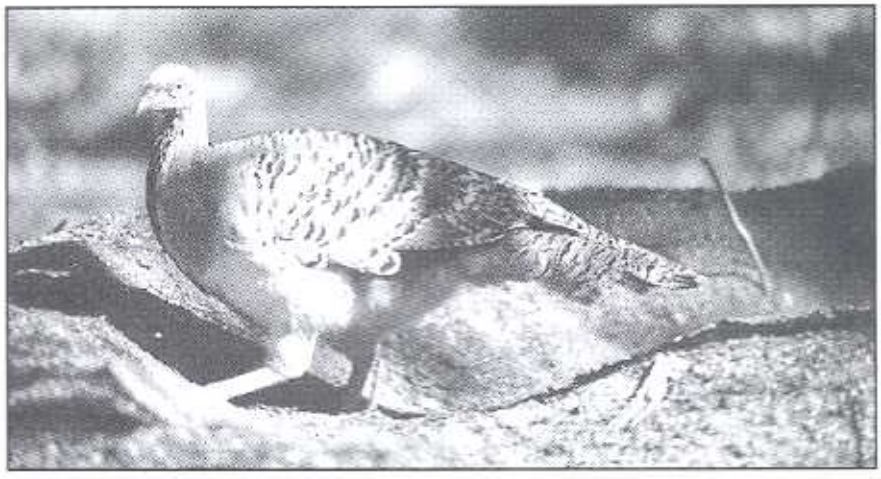
THE MARVELLOUS MALLEEFOWL - ITS GNOW OR NEVER!

From a talk given by Susanne Dennings

MALLEEFOWL use a compost heap to incubate their eggs - which is really rather an extra-ordinary thing to do. It becomes even odder when you realise that all the other 11 species of birds in its family live in tropical areas, where high rainfall rots the vegetation quicker, so making a more reliable incubator. But our malleefowl works - and works hard - in arid and semi-arid areas to keep up his strange life-style.

Inside the heap, the eggs must be kept to within 2°C pf the optimum temperature - 33°C. He achieves this by using his thermally-sensitive beak as a probe, hence an alternative name, 'Thermometer Bird'. Incubation commences about Sept/Oct and goes on until about Mar/April when, by February, the heat generated by the decomposition process begins to decline. So Dad-to-be opens up the mound to obtain a greater exposure of the mound soil to the sun's warmth, later covering it back up to keep the heat in.

Who taught him this specialised skill? Certainly its not his parents, for when, as a hatchling, he battled his way up through as much as a metre of sand and leaf litter (and it may take him up to 15 hours to achieve this!) he merely stoped for a breather before he's off on his own in the big, bad world. Meanwhile, Dad continues the thermal checks and Mum ... well ... she's out there somewhere building up her protein supply for yet another egg. Junior doesn't need an instruction book anyway for he is self-contained, being fully-feathered, well camouflaged, has strong little legs for running and can even fly within 24 hours.



Malleefowl on mound. (P. Hussey)

He needs all this and more to survive. It seems his chances are about 1%! Yet if he does make it, he may then enjoy up to 30 years of foraging and mound-building. He will mate for life when he reaches maturity.

Once the breeding season is over, it doesn't mean Dad's task is done, he has to prepare next year's incubator (no male liberation here!). Out with all the old, spent compost and in with a new layer of fresh vegetable matter in the depression he has bade at the base of the mound and piles of leaf litter above, raked in from up to 25 m away. He then digs an egg chamber in the centre of the mound, into which 18 or so very large eggs are laid at the rate of one every five days. Imagine the quantity of seeds, insects and herbs that must be consumed daily to keep up that prodidgious laying effort! Dad, meanwhile, must also eat a lot to provide the energy needed to rake out the soil or rake it back as the fluctuating temperatures of the mound demand.

The main threats to malleefowl survival are probably predators and loss of suitable habitat. To help with the first problem, the Malleefowl Preservation Group has promoted and taken part in fox control operations, and conducted a 'Kitless Kat Klinick'.

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EDITORIAL

Hi everyone!

LAND FOR WILDLIFE is a year old now - and what an exciting year it has been! By the end of November, 168 people had registered with the scheme, from all across the south-west, Galena to Esperance and Augusta to Yilgarn. However, we have still not managed to arrange visits to some areas yet - please don't despair. It will eventually happen! Sometimes I feel as though the 'powers that be' are so overwhelming that nothing one does will have an effect, then I meet some wonderful people and know that all the effort is worthwhile.

A large part of this issue is taken up with information about Bushcare Grants. If you are thinking of applying, or are a part of a Catchment Group or LCDC that is, please read the INFO SHEET very carefully. It is a sort of a 'Guide to the Guide' which Keith Claymore, the Bushcare Coordinator, has made as simple as possible. Note: Bushcare is NOT NLP under another name - your projects must have a clear natural environment focus. There's PLENTY of money for good projects - ring if we can offer more help. (For those of you on smaller properties, for whom this is perhaps not relevant, we apologise, but the practical tips could still be useful.)

How well did you read your 1997 Western Wildlife? Emma has thought up a diabolical quiz for you - we are offering a prize for the first five readers to send in a correct solution - give it a go! (We won't know if you look up the answers ...!)

There are a couple of new features in this issue, please tell us how you like them. 'The way we were' highlights changes that have occurred over the years; this month, in the attutude of landholders to tammars on their property. But I would like to include some photographs - perhaps 'then and now' showing the first trees you planted, or a family bush picnic in grandparents' time. Has anyone got any photos we could use?

Another new feature is a page of 'LFW News'. Activities, ideas and suggestions from members will be featured as we hear about them. So please send us pics of any interesting activities you are involved in!

Best wishes for 1998.
Penny Hussey

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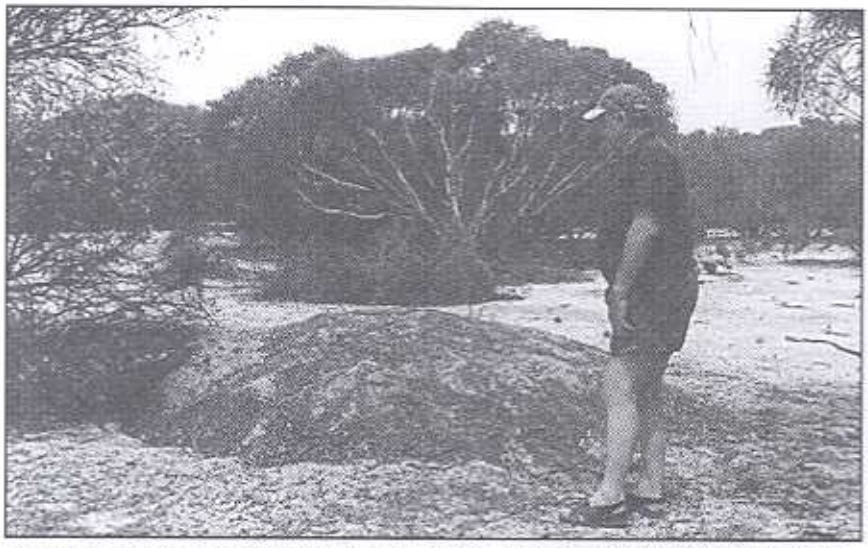


'Charlie's mound' under Burracoppin Mallee. Note that the understorey would regenerate if stock grazing was removed (photo: Penny Hussey)

Malleefowl Charlie's leaves

Frank Gould of "Albacutya Downs', Narembeen, has been watching 'Charlie' since he first started building this mound in 1994. But the silly bird chose an area of the remnant that is unfenced so that it can act as stock shelter, consequently there's not much litter around. So each year Frank collects a ute-load of mallee leaves and stuff, and dumps it off for Charlie. As you can see, he's used it to make a very satisfactory mound!

The second problem might, in the long term, be harder to remedy. At Ongerup, where we first started studying malleefowl, there are several small reserves with suitable habitat - indeed, they contain old mounds - but living birds have not been seen there for many years. We designed, found a grant to finance, and have planted and fenced 21 km of trees and shrubs to act (we hope) as bush corridors that will both lead and shelter young malleefowl dispersing away from the remnant with active mounds towards the unoccupied areas.

Our aim is to put the 'Gnow' (the Nyoongar name for the bird) back into Gnowangerup - the place where the malleefowl lays its eggs.

Susanne Dennings is a farmer at Ongerup and Voluntary Coordinator of the Malleefowl Preservation Group (see 'About Groups'). She is also on the Board of Greening Western Australia. These notes were taken during a talk given by Susanne to the Darling Range Branch of the WA Naturalists' Club. Any mistakes are due to faulty transcription, blame me! Ed.

ECONOMIC ASPECTS OF BIODIVERSITY

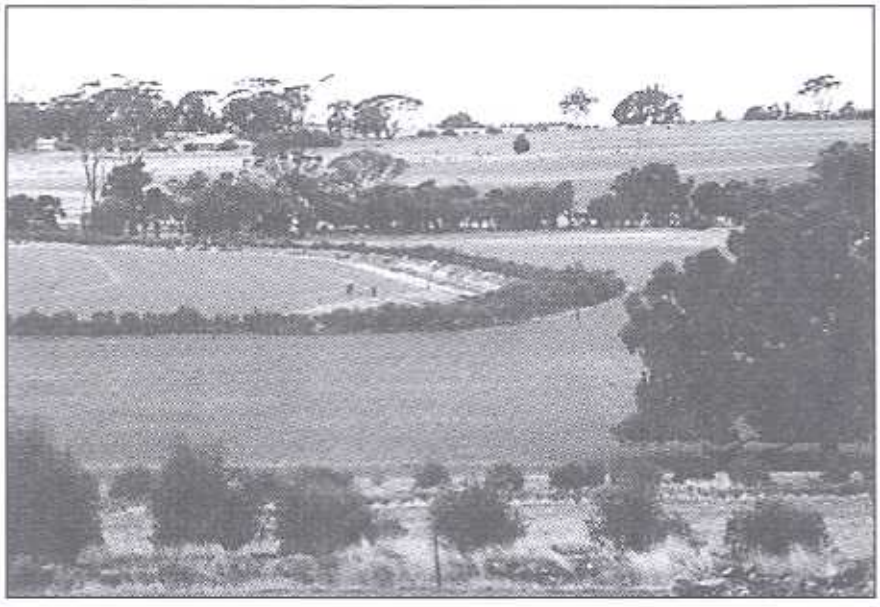
OIL MALLEE: LARGE SCALE ECONOMIC REVEGETATION WITH NATIVE PLANTS

OIL MALLEE is the first of a new generation of perennial 'woody plant' crops being developed for the wheatbelt in the south west of WA.

Woody plant crops are an essential part of the change required to achieve sustainable agriculture. The State Salinity Plan indicates the need for some 3 million ha of revegetation over the next 30 years. It makes clear that governments cannot finance this scale and rate of planting, and that the necessary degree of integration of revegetation with agriculture will require active management and universal participation by farmers. The Plan concludes that commercial incentives must be harnessed to increase farmer motivation to adopt revegetation as an integral part of agricultural practice and farm business.

From the broad perspective of sustainable agriculture commercially motivated revegetation can be seen as complementary to biodiversity conservation. The objectives of biodiversity conservation are unlikely to be met without woody plant crops or, more simply, biodiversity conservation needs woody plant crops! Furthermore, there is potential to improve the compatibility of biodiversity and woody plant crops. Since there are few options currently available (especially for the wheatbelt), development of new woody plant crop species and practices can be designed specifically to accommodate biodiversity objectives. For example, a focus on native species for commercial tree crop development would reduce the risk of woody weed introduction.

The oil mallee development embraces these multiple purpose objectives. All but one of the six currently used species are native to the wheatbelt (see Box). They have proved to be robust and adaptable and are tolerant of sheep grazing. The range of species has been selected to give good coverage of wheatbelt soils and climate. The diversity of species and genera used could easily be expanded. All are selected for high leaf oil content. The mallee habit is well suited to a short production cycle of 1 to 2 years between harvests and to large scale mechanized operations.



Oil mallee (centre and foreground) planted on drainage banks on Peter and Wendy Bessell-Browne's property, Woodanilling.

The oil has traditional uses, especially in non-prescription pharmaceuticals, but this market is small. Allan Barton from Murdoch University has shown that the natural solvent properties of eucalyptus oil could be developed for industrial use. Industrial solvent markets are large and currently in transition due to recent withdrawal of a major product called trichloroethane, the production of which was discontinued under international convention to control ozone

OIL MALLEE PLANTING STATISTICS

Planting year	Seedlings planted	Number of growers	km of hedge (seedlings/1333)
94	1.10 million	80	825
95	2.05 million	170	1540
96	2.80 million	250	2630
97	1.05 million	100	750
Total	7.00 million	Approx 300	5745

Note: a hedge has two rows 2 m apart and a within row planting interval of 1.5 m

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depletion. There is a strong preference in these markets for 'natural' replacement products. However, large-scale penetration of these markets would require prices about half those prevailing in traditional eucalyptus oil markets. This appears quite achievable given the potential for economies of scale and technical advances in genetics and processing technologies.

CALM initiated development of a eucalyptus oil industry in 1992. Extensive planting commenced in 1994 with the aim of building an initial resource upon which development of an industry might be based. Planting was initially confined to six districts i.e. Canna, Kalannie, Narembeen, Wickepin, Woodanilling and Esperance, to foster local support and reduce the large overhead costs that would be involved in widely dispersed operations. The following table indicates the scale of planting and number of growers.

The Oil Mallee Association was formed in 1995 to represent the interests of growers in the development of the industry. The Association is an incorporated body and has a regional structure built around the initial planting districts. It publishes a quarterly newsletter. Most growers have elected to become members of the Association. Membership is open to all interested parties not just prospective growers.

Total expenditure to date is estimated to have been $4 million by farmers, $3 million by CALM and $1 million from other State and Commonwealth Government programs. The reduction in number of seedlings planted in 1997 arose from the cessation of CALM finance for seedling costs and the assumption of control of the project by the Association. This necessitated change to the seedling ordering system and a much earlier seedling order deadline. Slower than expected progress on developing harvest and extraction operations also made growers more cautious.

A professional business plan was prepared during 1997 by an independent consultant. This was done concurrently with a project developing harvest and extraction systems sponsored by the Regional Enterprise Scheme. These studies indicated that it is commercially feasible to build an industry based on oil mallee but it would take longer than early optimistic schedules had indicated.

Some of the key strategies to achieve commercial success are:

- double the resource base in order to reduce overheads to a level where it will be viable to sell into existing markets.
- take maximum advantage of the existing pharmaceutical market. This market is too small for the long term objective of building a large scale industry but it will provide good prices for initial low volume production and the opportunity to learn 'on the job' to drive future expansion and new market development. An alliance has been formed with a major player in the pharmaceutical market.
- increase planting density and area: detailed analysis of harvest and transport costs show that the early approach of confining planting within a district horizon (to minimize road transport distance) was not as important as building local concentrations of planting (to minimize harvester walking distance and downtime). As a result of this analysis the Association has abandoned its focus on the six original planting districts – it will now seek good concentrations of planting anywhere in the wheatbelt.
- develop efficient bulk handling systems. Oil mallee leaf is a low value raw material that must be grown in widely dispersed patterns to meet the landcare objective. The total size of the resource base and efficient materials handling systems will be critical factors for success. Considerable design work and prototype testing has now been completed and a best-bet development plan has emerged.
- form the Oil Mallee Company to lead development of harvest, processing and marketing. Maintain majority grower shareholding and appoint professional management.

While there is optimism amongst the oil mallee developers it is not yet in the bag as a commercial success. In the meantime oil mallee is an excellent general farm tree, it is friendly to biodiversity and offers promise for future commercial return. It is now generally available. The native oil mallee species are acceptable for inclusion in Bushcare projects. Oil mallee warrants a place in any revegetation project.

If you are interested contact Oil Mallee Association administrator Ric Collins on 08 9478 0330.

OIL MALLEE SPECIES:

All the species being used are mallee eucalypts. With the exception of the NSW/Vic species blue mallee (*E. polybractea*) they are all native to the wheatbelt of WA. A brief description of them follows:

E. kochii ssp *kochii*, *E. kochii* ssp *plenissima* and *E. horistes*:
all from the oleosa group of eucalypts that occur in the northern wheatbelt and prefer well-drained light to medium soils.

E. loxophleba ssp *lissophloia*:
the smoothed bark york gum, occurs in the central wheatbelt as far east as Kalgoorlie. Prefers heavy soils and can tolerate some waterlogging and salinity.

E. angustissima:
from the inland south coast area from Ravensthorpe to Esperance. Is waterlogging and salinity tolerant.

E. polybractea:
the blue mallee from NSW/Vic. Appears quite adaptable to WA soils and has demonstrated reasonable salinity tolerance.

FLORA - PRACTICALITIES

BIODIVERSITY REVEGETATION - HABITAT ISLANDS

by Penny Hussey

IN the past, farmers have often attempted to manage their land so that there was an even growth of crop or pasture, no matter what terrain or soil type they were planted on. This attitude is changing, with planting to soil type, and even companion planting, being undertaken, but a farm is still a relatively simplified ecosystem compared with the natural systems it replaced.

Nature seldom produces a uniform vegetation across a variable landscape. While an unbroken expanse of bushland appears superficially to be a uniform mass, in reality there are differences in soil type and topography which create a mosaic of habitats, changing constantly across the landscape. The bush is incredibly varied, and the variations permit a wide variety of plants and animals to exist alongside one another. In this diversity lies strength - the resilience that has allowed the biotic elements of the landscape to adapt and change, yet remain a functioning system, as the climate has changed over an immense length of time.

When attempting to revegetate the landscape and incorporate the needs of native flora and fauna (biodiversity), we need to recreate this natural variety. This will provide the varied resources - food and shelter throughout the year - that native fauna need.

One suggestion to add biodiversity into general or commercial revegetation is to incorporate 'habitat islands' into the replanting concept. A habitat island is a dense clump of trees/shrubs/groundcovers designed to provide resources for native fauna.

Each habitat island should be planted as a dense clump of mixed local species which attempts to eventually mimic the structure of the appropriate local vegetation community, eg trees, tall/medium/low shrubs and ground layer in a woodland, mixed shrubs and mallee on sandplain. If using a tree-planter, reduce the spacing and interplant between rows. Better still, use, or combine with, direct seeding. As the plants grow, they will adjust in density as the best adapted survive.

Firstly, as with any reveg project, good weed control is essential. Scalping is best for direct seeding.

What species should be included? As a general rule, include

CREATION OF A HABITAT ISLAND IN POOR QUALITY REMVEG - ST RONAN'S WELL RESERVE, YORK.

*Site preparation, 1991: * cool fire removed grass thatch * pile above, spray to kill Cape Tulip * cultivate to break up CT bulb mass * direct seed.*

Result: 1997, 21 species of local shrubs established.

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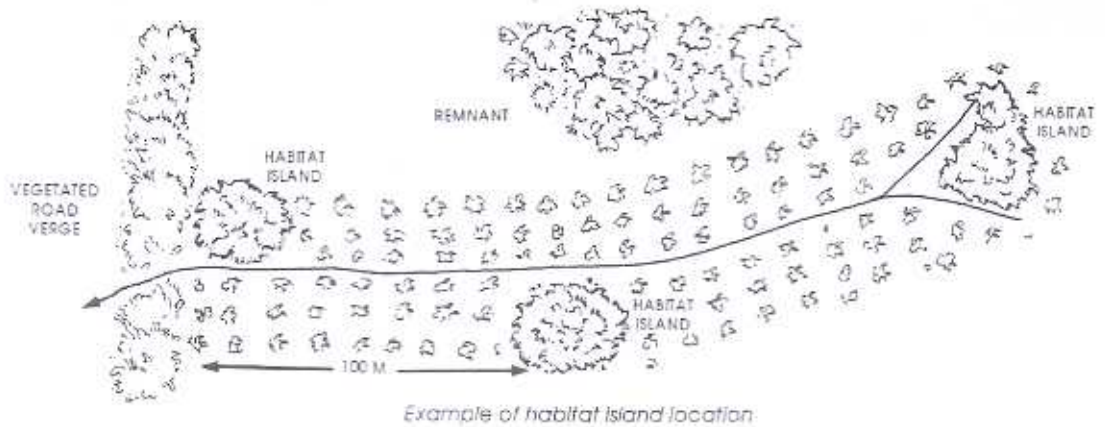
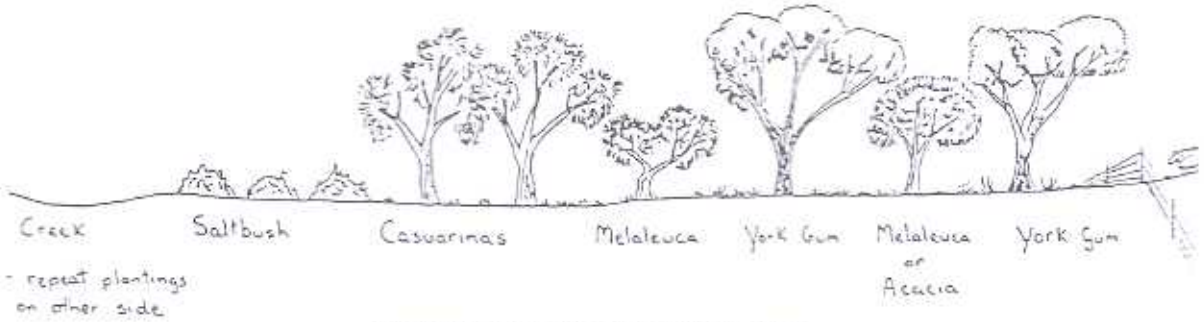


Example of habitat island location

In this example, a habitat island might look like this



Example of planting along a drainage line

(Diagram reproduced from 'Kennedy Creek Catchment Management Report' Mike Clarke 1993)

some trees for height and eventual hollows and a variety of shrubs, some prickly, which grow to different heights and flower at different times. If possible, a log or two should be placed within the area, as extra habitat for fauna. Leaf litter is necessary to provide material for nutrient recycling and the soil formation process. Brushing is the most practical way of providing sufficient litter, and the seeds in the brush will help to increase the plant diversity within the clump. Topsoil is also useful for introducing beneficial soil fungi which will provide a marvellous boost to the plants. If wildlife habitat is the prime consideration, stock must be excluded.

How big should the habitat islands be? I believe that 'one tennis court' is an excellent size but 'half a tennis court' would do!

Where should they be put? Fit them into corners, around rocky areas, in the bends of creeks, etc, within small-bird flight-hopping distance from the nearest remnant vegetation. The distance varies for different species, but they should be no greater than 100 m (or in line of sight) from other such islands or patches of native vegetation. If doing linear revegetation, put habitat islands at intervals along the line - again, 100 m would be an arbitrary figure. That is, there would be 10 habitat islands in one km of creekline corridor.

Dense stands like this are good windbreaks and water users, and will provide resources for small birds such as robins, thornbills and honeyeaters, which contribute to the ecological balance of the area. Thus the nature conservation and the agricultural values of the property may both be increased.

Much of this article is taken from a talk given by Denis Saunders and Penny Hussey to the "Productive Use and Rehabilitation of Saline Lands' Conference in Albany in March 1996. The full paper is 'Creating a Hans Heysen: Painting Saline Lands into a Nature Conservation Picture'.

Habitat islands need to contain a variety of local native species. We have already provided lists of such species for some Land for Wildlifers - if you would like help with species selection for a particular site, ring me on 08 9334 0530. *Penny*

PRACTICALITIES

RIPARIAN RESTORATION IMPROVES WHOLE FARM PRODUCTIVITY

by Alice Kammann

ALLOWING unrestricted stock access to rivers and creeks for drinking water may have environmental consequences including erosion of the riverbank, sedimentation, eutrophication, turbidity and damage to native vegetation.

By controlling and managing stock access to water courses, native vegetation will regenerate and stabilise the soil along the river's edge. Vegetation is able to filter surface water runoff to reduce the nutrients, soil and organic debris that may enter our waterways. Native vegetation also provides a habitat and a linking corridor for wildlife along water courses.

Trevor Sprigg is one of six farmers in the middle Blackwood Catchment participating in a demonstration of restoring farm riparian areas, and evaluating the costs and benefits of such work. The riparian area is simply the land on the edge of a watercourse that is regularly inundated during flood events.

Trevor said that it has always been a concern to see the degradation of the river bank, especially when compared to the thick vegetation in the reserve on the other side of the river. He realised that unless something was done, over a period of time the existing trees would fall into the river without new seedlings to replace them, causing more soil erosion and sedimentation of the river.

Two years ago, Trevor fenced off one kilometer of riparian land 20m to 50m back from the edge of the Blackwood River. He was initially reticent about fencing off the river bank because the Blackwood River was his sole water source on the property. It was unfeasible to build a dam because of his sandy and leaky soils, so Trevor decided to pump water from the river to a holding tank on a high point of the farm.. Water can then be gravity fed to strategically placed water troughs around the property.

Trevor Sprigg (second from left) demonstrating the solar pump and riparian restoration project to other farmers at a fieldday.

After investigating various types of pumps and power sources, a solar powered pump from B & W Solar was chosen. The power obtained from the sun by the solar panels is maximised by a battery operated tracking frame. The jack pump has the advantages of being made from plastic components which are non-corrosive in saline water. It runs very quietly making only a soft purring noise, and with its double acting style, it produces a steady flow of water. The solar pump is most effective in the summer months when more water is needed. Trevor has been pleased with the output from the pump with flow into the tank at a 30m head of about 10 litres per minute and an average of 5000 litres per day.

The Blackwood Catchment Coordinating Group through LWRRDC (Land and Water Resource Research and Development Corporation), have been monitoring the results of the

The pump.

riparian restoration along with Neil Pettit who is studying the site as part of his PhD in riparian restoration. Initial monitoring has indicated that *Eucalyptus rudis* and *Melaleuca rhaphiophylla* are regenerating well along the water's edge and in places where soil is exposed. Neil has found that the soil seedbank consists mostly of *E. rudis, M. rhaphiophylla* and various introduced annual grasses. Trevor is considering various revegetation options to encourage more trees and shrubs to cover the riparian area.

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PRACTICALITIES

RIFFLES AS PART OF RIVER HABITAT

by
Avril Baxter

THINKING of creating a creekline corridor? Then why not create the best possible habitat for the animals that need water as part of their life cycle, the birds, fish, gilgies and smaller creatures that are the basis of their food chain?

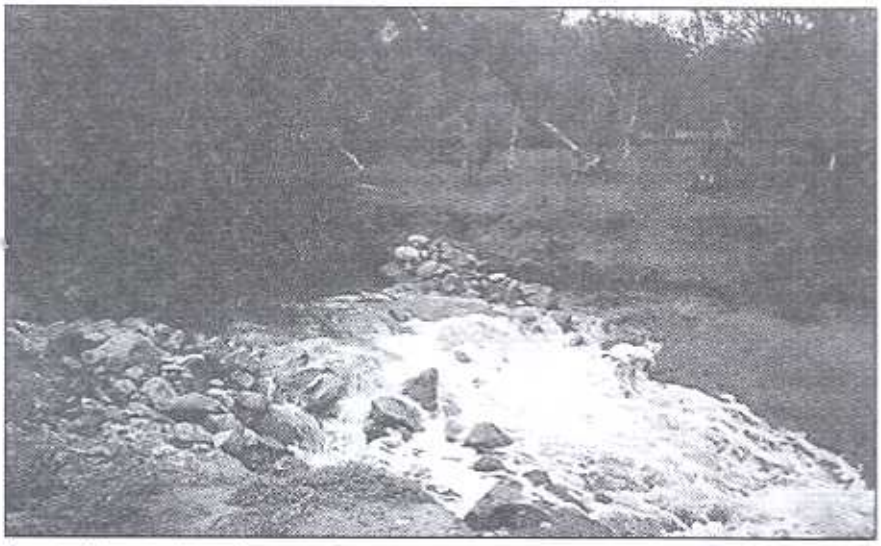
The creekline corridor is a good start. Fencing prevents livestock from damaging banks and polluting the river with urine and manure. Revegetation along stream banks will help stabilise the bank and if ground covers, rushes and sedges are used, will improve water quality by filtering out sediment, organic matter and nutrients that may run off surrounding farmland. Leaf litter from trees and shrubs planted close to the river channel provide a "slow release" food source for aquatic animals, and the shade they produce will reduce the amount of sunlight available for algal growth.

If your river bed is falling on a slope of at least a 2% (40 cm in 100 metres) you could also consider building a riffle system. Riffles are rock or woody debris bars across creeks and rivers that act as mini weir, and hence create a greater array of habitats. Some creatures, such as gilgies, live in the pools and actively seek their food, other filter feeders such as blackfly larvae live in the riffles and wait for their food to be carried to them by the flowing water. Surveyed rock or woody riffles are built with a 1:20 slope allowing fish of all sizes to move upstream into the pools ahead.

Riffles also help in stabilising creeks which are down-cutting their beds. A stream can get out of balance due to catchment and channel clearing, which produce greater run-off and faster flows, and these can lead to major problems of flooding, down-cutting and bank erosion.

A rock riffle can take some of the erosive energy out of the stream by slowing the flow of water. Surveyed to the level of regularly occurring winter flows and having a V-shaped channel, they reduce upstream slope by impounding the water upstream over several tens or hundreds of metres, reducing the erosive force and taking the fast flowing away from the banks and directing it towards the middle of the channel. Energy is also taken out of the river as it tumbles over the rocks and debris of the gently sloping downstream face of the riffle.

Riffles can be relatively cheap to build, especially where field stone and woody debris are plentiful, and offer many ecological advantages. Apart from increasing the range of habitats available to support a wide variety of native animals, they also act to oxygenate the water. By bubbling and boiling the water, riffles become the "lungs" of our rivers, providing much needed oxygen for the microbial breakdown of organic matter and the recycling of nutrients. These processes reduce the likelihood of noxious algae blooms and increase the health of our rivers.



A rock riffle as built on Spencers Brook.

If you can see a need for a riffle as part of your creekline regeneration, then contact me on 08 9881 1444.

Thanks are given to Luke Penn for his comments on this article.

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An economic analysis of the restoration work was done on the site by Agriculture WA to evaluate the costs and benefits of such restoration work. The analysis showed that profitability over the whole farm is likely to increase as a result of the restoration work. With the new efficient stock watering system distributing water across the property, the stocking rate on the farm is likely to increase from 8.22 dse/ha to 10ds/ha. An increase of only 0.79dse/ha will be sufficient to recover the costs of lost production from the riparian area, and to cover the establishment and maintenance costs over a 20 year period. Any increase above 0.79dse/ha will result in improved productivity of the farm.

This Blackwood project is demonstrating that restricting stock access to riparian areas and providing alternative watering points for stock not only provides environmental benefits, but can improve whole farm productivity.

For further information on the project, contact Alice Kammann at the Blackwood Catchment Coordinating Group. ph: 08 9765 1555

THE NATURAL HERITAGE TRUST: AN OVERVIEW

INTRODUCTION

THE Natural Heritage Trust (NHT) aims to encourage a more rapid and effective shift towards ecologically sustainable development, including biodiversity conservation. This will be achieved through the expenditure of funds across a suite of 17 programs that are focused on addressing key environmental issues. Table 1 lists the major programs.

The NHT will be largely delivered through direct investment grants between the Commonwealth government and incorporated groups, local government or State agencies. The call for grant applications will be once a year through a One-Stop-Shop arrangement that receives applications and priorities project proposals. The merit of proposals is considered through a process that is modeled on the previous National Landcare Program where all NHT applications are assessed and ranked by community-based regional assessment panels (RAPs), then a State Assessment Panel (SAP).

For this round of funding, there will be **a single set of guidelines** *(Natural Heritage Trust Funding: Guide to New Applications 1998-99)* for all applicants and programs, whether for a community group, State agency, local governments or NGOs with a closing date of **6th March 1998**. Accompanying the NHT Guidelines will be supplementary guidelines that provide State and regional priorities and detail specific information requirements that WA applicants must supply. These should be read thoroughly before attempting to develop a project application.

TABLE 1. LIST OF THE NHT MAJOR PROGRAMS

Bushcare: The National Vegetation Initiative
Murray-Darling 2001
National Wetlands Program
Weeds and Introduced Pest Animals
National Landcare Program
Farm Forestry Program
Endangered Species Program
National Rivercare Program
Fisheries Action Program
National Reserve System Program

NHT Principles

Underpinning the Natural Heritage Trust and the delivery of its component programs are a number of key principles. In order that applicants have a greater likelihood to receive funding, they are encouraged to develop projects that meet the following requirements.

- NHT funding is intended to be **catalytic** rather than subsidization of particular activities that are regarded as core business of land managers or having high private benefit. As funding through the NHT is from the public purse, the Trust intends to maximize environmental outcomes by funding activities that will promote ecologically sustainable land management practices across the community, as well as having a noticeable change in the landscape. Accordingly, **projects that demonstrate the greatest public benefit will receive priority consideration.**
- Grants are aimed to help groups get over a self-reliance hurdle and make them more self-sufficient. Projects that require on-going funding will need to develop other mechanisms for funding.
- The project **must address the cause** of natural resource or environmental problems rather than solely the symptoms. For example, if a group is intending to address human induced salinisation, revegetation of recharge areas and not saline scalds must prominently feature in their proposal.
- **Project must be integrated** across soil, water, vegetation and biodiversity issues and take a long-term approach that is **linked to regional strategies** or fits regional initiatives.
- The applicant must **contribute** some of the costs (in kind or cash) in order to demonstrate a lasting commitment to the project and help foster a conservation ethic.
- **Projects must address a national, Statewide or regional issue;**
- Project must be **technically feasible** and **propose the most efficient solution**
- Priority will be given to projects developed in **partnership** with other proponents (such as State agencies, local government or catchment groups)

THE NATURAL HERITAGE TRUST: AN OVERVIEW

This year's guidelines are in 5 parts:

1. DEVELOPING AN ELIGIBLE APPLICATION

▷ read to see if your project fits – if it does, go ahead and read the rest of the guidelines – if it doesn't, rethink your idea.

2. PREPARING YOUR PROJECT PROPOSAL

(the amount of information requested will depend on the amount of funding you are seeking)

▷ for projects <$10,000, you need to answer 7 general questions on page 44 and attach your answers *(no more than 3 A4 single-sided pages)* to the application form;

▷ for projects between $10,000 and <$50,000, you need to answer 16 general questions on pages 26-29 and attach answers to the application form *(limit your answers to 7 A4 single-sided pages)*. In addition, you will also need to answer specific questions for each type of project and attach to the application form;

▷ for projects >$50,000, you need to answer 16 general questions on pages 26-29 and attach answers to your proposal. *(You must provide more information than projects that are less than $50,000 but limit your answers to no more than 10 A4 single-sided pages.)* In addition, you will also need to answer specific questions for each type of project and attach to the application form.

3. WORK OUT YOUR BUDGET

▷ read carefully and be certain all rules are followed;

▷ double-check to make sure the arithmetic is correct.

4. WHAT NEXT

▷ Outlines information on where to send your application and the assessment process.

5. YOUR APPLICATION

▷ This is the application form – fill it in carefully.

▷ Attach your answers from Part 2.

▷ Send to the address in Part 4.
(For on-ground native vegetation management and revegetation activities, you must supply maps, aerial photographs and on-ground photos, which should be attached to your application).

■ SUMMARY

Under the NHT over the next 3 years, there will be an increase in funds for direct grants. However, this will also mean greater competition for funds both within the State and between States. In order for applicants to have a greater likelihood to receive funding, they are encouraged to develop projects that meet the NHT funding criteria and complement the above principles.

Regional Bushcare Facilitators

To assist in the delivery of Bushcare in Western Australia, it is proposed to establish a skeletal network of regional Bushcare facilitators (Bushcare Workers) across the southwest agricultural areas and metropolitan Perth. The primary role of the Workers will be to promote nature conservation and ecologically sustainable land management. This will include assisting stakeholders in the development of projects that will improve native vegetation at a local level as well as complementing biodiversity conservation at the regional scale. The Workers will also provide native vegetation management advice and promote conservation mechanisms such as the *Land for Wildlife* Scheme, State Remnant Vegetation Protection scheme and other incentive schemes aimed at improving native vegetation management. It is anticipated that the Bushcare Workers will be in place early next year and community groups, local governments and State agencies are encourage to contact them to seek assistance on native vegetation matters, as well as NHT funding. In addition, to assist Aboriginal Communities there will also be a number of Indigenous Land Management Facilitators. Further information on the location of the facilitators will appear in a future addition of Western Wildlife.

■ For further details on NHT or NVI/Bushcare, contact:

Keith Claymore
WA BUSHCARE CO-ORDINATOR
Tel. 08 9334 0438 Fax. 08 9334 0278
Email: keithc@calm.wa.gov.au
Postal Address:
Locked Bag 104 Bentley Delivery Centre
PERTH WA 6983

THE NATURAL HERITAGE TRUST: AN OVERVIEW

National Vegetation Initiative

Bushcare

BUSHCARE is a major program established under the NHT that expands on former Commonwealth government native vegetation initiatives, primarily the Save the Bush and One Billion Trees programs. The program takes a more holistic approach towards native vegetation management than previous programs and encourages integrated management planning, where existing native vegetation is better managed and complemented by strategic revegetation activities.

As native vegetation is central in maintaining productive capacity of the land and ecological systems, the Bushcare program aims to reverse the decline in the quality and extent of native vegetation, with a view to making significant changes in the landscape. Applicants seeking Bushcare funds through the NHT must clearly indicate how their project will achieve lasting on-ground outcomes that will benefit native vegetation.

Bushcare's **primary objectives** are to:

- conserve biodiversity through improved management of native vegetation and complementary strategic revegetation activities;
- conserve remnant native vegetation by implementing a range of conservation measures, e.g. controls on land clearing, State Remnant Vegetation Protection Scheme; and
- restore productive capacity of degraded land/water by significantly increasing revegetation activity within an integrated landscape-planning context.

AREAS FOR FUNDING

Bushcare encourages applicants to address a range of native vegetation management issues. This may include:

- collection and collation of information (to better understand the role of native vegetation and identify significant areas for protection and key sites for revegetation);
- planning (management plans and strategies);
- implementation/management (e.g. better management of existing vegetation and revegetation activities);
- monitoring and evaluation;
- investigations and trials (identification of the conservation value of major areas and trialling of innovative vegetation management technology);
- community support (directed towards community and regional projects); and
- training and education awareness.

All projects must clearly indicate how they will achieve lasting on-ground outcomes that will benefit native vegetation.

THE NATURAL HERITAGE TRUST: AN OVERVIEW

The 4 major steps in developing a Bushcare project

1. GET INFORMATION

- First, find out what other vegetation management activities are planned in your local area. *(Your local facilitators may be able to assist you, or try contacting other local catchment groups and landholders directly);*
- Find out if there is a regional land management strategy for your area and what are the State priorities. *(Your local landcare facilitators will be able to help you here.)*
- Contact your local council(s) and find out what plans they have for your area.

2. PLAN WITH OTHER PEOPLE AND ORGANISATIONS

- Involve relevant interested local people in the development of your proposal. If possible invite local experts, including local representatives from CALM, AgWA, Water and Rivers Commission, local government and expert field naturalists to a meeting to finalise your proposal.
- Identify land management issues, degraded land and causes of land degradation relevant to your area.
- Draw up a map of your catchment or region.
- Map areas of remnant vegetation and identify which areas need protecting and how you will go about protecting these areas.
- Identify where revegetation needs to occur, which will complement existing areas of remnant vegetation *(i.e. buffer plantings around existing remnants, and/or wildlife corridors to connect remnants).*
- Identify areas for agroforestry and how these areas can be integrated with nature conservation activities.
- Identify what plant species to use for revegetation activities, where to find the local seed source and whether to replant or direct seed areas *(priority will be given to projects that use local provenance indigenous species).*

3. DETERMINE WHAT RESOURCES ARE NEEDED

- Draw up an action plan of *proposed* works, including what activities will be carried out and when, what will be needed and who will do what.
- List what on-going management activities are needed (eg: weed control, fire management, rehabilitation activities, pest control).
- Develop a monitoring program to use during the years of funding and beyond.
- Determine how much time and money will be contributed by the landholders and by other groups.
- List what activities it has been decided to undertake and which are eligible under the NHT.

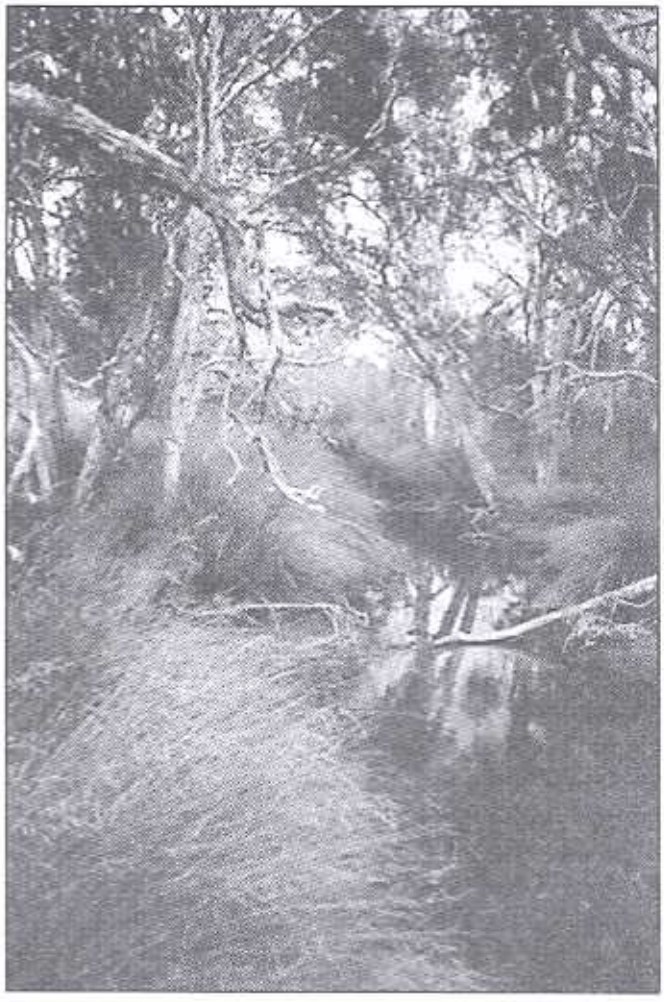
4. PREPARE YOUR PROJECT PROPOSAL

- Incorporate all your ideas into the proposal and submit to the Natural Heritage Trust for funding by the closing date.

Good luck!

Bushcare

PRACTICALITIES



(photo: A. Baxter)

Native grasses to the fore!

The photo shows a beautiful stand of *Austrostipa juncifolia* along the creek at Bruce Ivers' place at Kojonup. The water quality here (on 24th Nov 97) was 1040 mS/m. Slightly further inland, Lyn Coleman has had this plant regenerate into a bare salt scald, once grazing was removed. Lyn also reports that Melaleucas are able to reseed through the grass tufts.

Native grasses have been a neglected area in regeneration efforts so far. Avril Baxter is working with Bruce, and Terry McFarlane (CALM's grass expert, who is based at Manjimup) to develop a project to test the suitability of native grasses for direct seeding in rehabilitation areas. They hope to be trialling a native *Puccinellia*, for example.

If you'd like to know more about this work, contact Avril on 08 9881 1444.

[Note: The genus *Stipa* has recently been changed to *Austrostipa* to avoid confusion with Northern Hemisphere species. Just thought you'd like to know!!!! - Ed.]

For natural regeneration - mimic nature!

When planning revegetation, imitate nature. For example, York Gums regenerate where pools of more-or-less-fresh water are left standing after summer floods. (So do Salmon Gums, Gimlets and Morrell.) So, if you have seed trees left, scoop a hollow adjacent to those trees along your fenced-off creekline, and wait for nature to take its course!

The photos show a natural example along the Doodlakine - Kunnunoppin Road. These young Yorkies probably germinated after the big floods of 91/92. Note, the (saline) creekline is 10 m further along the road.

A Table drain diverts water off the road (P. Hussey)

B Roadworks had left a hollow - bingo! Young trees! (P. Hussey)

Cheaper fencing for remveg and reveg

Mary and John Squire of 'Hawthorn', Mukinbudin, believe that remveg and reveg must be fenced if it is to survive in the long term. But, for people like themselves with many kilometres of shelter belt, creekline and rock outcrop - all in odd shapes - the cost of 'standard ringlock' is prohibitive. They have found that four plain wires, two hot, energised from solar panels, is quite sufficient. Another plus is that the fibreglass posts are exceptionally easy to install. The whole can be obtained for the NLP/NHT grant rate of $600 / km.

If you'd like to know more, ring John on 08 9047 1140.

LFW NEWS

Seed Collecting

Our new seed collecting leaflet 'Wildlife Note No 4' being trialled by members of the Botherling Springs CG in Goomalling. (photo: E.Bramwell)

THE Botherling Springs CG in Goomalling has a grant from Greening Western Australia (under the 'Trees and seeds for Diversity' programme) to trial direct seeding in three revegetation corridors they are planning, so they wanted to know how to collect the seed. The group also has taken the very ambitious step of deciding the incorporate a rare plant - the Mortlock River Grevillea, *G. christinae*. If they succeed in re-establishing the plant in places where it probably originally grew, this will be a first for a catchment group in WA - and maybe in Australia!

For more about the project, contact John Silver, Community Landcare Coordinator, Dowerin/Goomalling Community Landcare Centre, on 08 9631 1464.

Attractive plant collected on the day, Kunzea pulchella. (photo: Geoff Smith)

LETTER TO THE EDITOR

Victorian *LFW* visitor

Victoria's *Land for Wildlife* Planner (Coordinator), Steve Platt, is on long service leave and touring around Australia. While in Perth, he, and all the family, called into the office for a chat. Steve clearly enjoyed our wildlife, as he wrote from Mt Barker:

"We are having a fabulous time touring the south-west. ... At Dryandra we had a very successful night spotlighting, seeing many woylies, a barking gecko, burrowing frog, kangaroos and possums. The next day we came upon a 2 m long carpet python crossing the road ... Were it not for relations, I feel we'd be very happy to settle in the south-west with its magnificent countryside and relatively low population. ... Happy Christmas to all *Land for Wildlife* people!"

Best wishes for 1998 to Steve and all Land for Wildlifers in Victoria!

?

Do you want help with your Bushcare project? Ring your local CALM office.

LFW NEWS

Visit to WA of 'ANZECC Working Group on Nature Conservation on Private Land' *

By Emma Bramwell

ON the 21st October 1997 a group of interstate representatives arrived in Perth for four days to see what we get up to in WA as far as nature conservation on private land is concerned. The first item on the agenda was a 2-day bus tour, accompanied by Ken Atkins (WA's delegate to the Working Group), Keith Claymore (Bushcare) and myself.

First we visited 'Taminga', Judy and Brent Schillings' property at West Dale. There we discussed funding matters as well as visiting a LFW site. Our visitors were fascinated when Brent showed them York Road Poison *(Gastrolobium calycinum)*, and described its effects! Nothing like it in the East! Then on to Dryandra for BBQ dinner with the woylies and overnight at Narrogin.

The next day was hectic! First we looked at roadside conservation techniques with David Lamont (Roadside Conservation Committee) and Grant Hanson (Main Roads). Then off to Dongolocking to hear about the excellent work done on creation and management of bush corridors. Terri Lloyd (Dongolocking Farming Community) and Geoff Burrows (Malleefowl Preservation Group) spoke here.

Neil Ballart's farm was the next visit we made, where he spoke to us about the many issues facing farmers downstream, and how farmers upstream can help to prevent things such as salinity, by using a bit of planning. He also gave us a tour of his 160 acre Salmon Gum remnant and his regeneration paddock. In return, I gave him a LFW brochure!

Judy Schilling (third from right) discusses bush management with the visitors.

Then we went to Toolibin Lake, one of the few remaining freshwater lakes containing living vegetation in the Wheatbelt. CALM Narrogin's Jackie Nichol, Peter White and Ken Wallace told us how the lake is under threat from salinity due to the rising watertable and about measures such as groundwater pumping and a massive bund which have been installed in an attempt to combat these problems, while regeneration of the surrounding vegetation is occurring. In an adjacent paddock the landholder, Cameron White, was trialling alley farming methods using oil mallees and other species for a potential commercial return as well as revegetation. Avril Baxter (LFW Officer at Narrogin, but that day wearing her AgWA hat) gave a chat about the 'Toolibin Catchment Revegetation Manual', which offers lots of ideas based on landcare techniques and issues in conjunction with revegetation of farmland. I found all this most interesting, as I have been predominantly city based.

Taarblin Lake was our final stop before heading back to Perth. It is the complete opposite of Toolibin - just a massive saltpan. There are ideas in the wings for the recovery of this lake once Toolibin is stabilised.

A most interesting trip for all involved - I know I certainly learnt a lot!

For the next two days the delegates discussed policies and recommendations to be put to the Ministers. *Land for Wildlife* was a major item on the agenda. Doubtless Ken Atkins will report on this in due course!

* ANZECC stands for Australia and New Zealand Environment and Conservation Council. It is the main discussion forum for State and National Environment Ministers.

* Working Groups are composed of State and Commonwealth agency staff working in relevant fields.

Emma Bramwell is Land for Wildlife Administration Officer at CALM, Como. She can be contacted on 08 9334 0427.

THE WAY WE WERE ...

ON 23rd March 1921 the Minister for Agriculture called a Conference to decide whether certain fauna should be declared vermin. The discussion covered, among other things:

WALLABIES AND TAMMARS:

Mr Crawford [Chief Inspector of Rabbits] said that a great number of complaints had been received from the Augusta, Denmark and Manjimup districts, and also from the South-west District Vermin Board, but action could not be taken as the Fisheries Department [which then had responsibility for terrestrial wildlife also] declined to declare the wallabies vermin. For many years the country between Denmark and Yallingup had been the principal breeding ground of the dingo. The Department had taken extreme measures against dingoes during the last two or three years, and had destroyed some five or six thousand. Dingoes, which were a natural check on the wallabies and tammars, had been removed, and the latter were now increasing

enormously. In many places it was impossible to grow vegetables and potatoes, and in the drier time of year the wallabies bark the fruit trees.

Mr Glauert [WA Museum] pointed out that there were various species of wallabies, and suggested that steps be taken to identify the harmful species, so that those not responsible for the damage might escape destruction.

Messers Crawford, Wickens [Officer in Charge of Fruit Industries], and Le Souef [Director of the Zoo] continued the discussion, and Mr Aldrich [Chief Inspector of Fisheries] added that, if the desire was to declare wallabies vermin throughout the State, he would offer strong opposition. He considered that if the marsupials were exterminated the dingo would become a bigger menace than ever.

After Mr Male [Pastoralists' Association] and Mr Crawford had made further remarks, the motion "That Wallabies and Tammars be declared vermin in certain districts, these districts to be defined by the Chief Inspector of Fisheries and the Chief Inspector of Rabbits" moved by Mr Crawford and seconded by Mr Wickens, was carried.

[Ah well, the fox was soon to fix that problem ... Ed.]

Notes recorded in the Journal of the Royal Society of Western Australia, 1921.

Meet Avril

AVRIL BAXTER is the *Land For Wildlife* Officer working part time from our Narrogin office.

Trained as a Community Landcare Technician, Avril has spent the last 5 years working on farms and in Shire reserves. Her work involves whole farm and remnant bush planning, surveying earthworks, farm water supplies, implementing revegetation plans, rehabilitating gravel pits and running the Ribbons of Blue program in Narrogin.

"It's great that *Land for Wildlife* is providing a focus on farm remnants and nature conservation. It has enabled me to step across the 'fence' and work in an area that traditionally has not received a high priority in farm budgets. But with sensible planning, nature conservation and farm productivity can be improved at the same time.

"I love putting the 'whole picture' together. Water management, creekline protection, paddock shelter, farm productivity, diversification and wildlife habitat are some of the elements that farmers deal with. The beauty of working with *Land for Wildlife* members is that they can see how it all ties together."

If you want nature conservation built into your farm plan, contact Avril on 08 9881 1444.

FLORA

COMMUNITY REGIONAL HERBARIA VOLUNTEER PROGRAM

by Jan Gathe

WANT to know the names of the plants in your bushland? Consult your Regional Herbarium!

It became obvious that groups interested in their local flora needed help, and so the WA CALM Herbarium and Greening WA put together a program to assist setting up Regional Herbaria. Now in its second year of operation, there are 48 Regional Herbaria forming a network from Broome to Esperance.

Helping these groups identify their local flora are 15 volunteers who work in the reference section of the CALM Herbarium. Each volunteer has 'adopted' particular Regional Herbaria and work closely with them in the naming and processing of their plant specimens (vouchers). All the information submitted with each voucher is databased and the mounted voucher is incorporated into the main collection of the CALM Herbarium. Each voucher represents a particular taxon (named plant) at a specific locality and a particular habitat and becomes a vital tool in the botanical research of our unique and complex flora.

Because of this databasing, any change in the status of the voucher (for example, if the name is changed) can be assessed readily and the information passed on to the Regional Herbaria. This keeps them as up to date as possible. The correct name of all plants - trees and understorey species alike - is vitally important, whether a group is interested in conservation, land management or tourism.

In 1997 four country workshops were held to help collectors choose good quality specimens and submit full field notes. An additional two workshops on the genera Acacia and Eucalyptus were held at the CALM Herbarium.

If you are designing a NHT project this year, which involves surveying or managing native vegetation, I suggest you liaise with your local herbarium group. There are many ways in which they can help, and, in the process, we will all learn more about our wonderful Western Australian plants!

You might be interested in joining one of the regional groups or, if there is none nearby, starting your own Regional Herbarium.
Contact the Coordinator, Jan Gathe at Western Australian Herbarium, LB 4, Bentley Delivery Centre, WA 6983
phone: 08 9334 0587

What plant is this?

Upright prickly shrub to 1.5m

mauve flowers. December

On laterite in Jarrah forest

Drawing by M.Pieroni from 'Leaf and Branch'

Location of Regional Herbaria

1	Albany	17	Esperance	33	Nabawa
2	Beacon	18	Garden Island	34	Newdegate
3	Bindoon	19	Jerramungup	35	Nungarin
4	Bridgetown	20	Katratha	36	Perenjori
5	Boyup Brook	21	Katanning	37	Pingelly
6	Brookton	22	Kojonup	38	Ravensthorpe
7	Broome	23	Koorda	39	Rockingham
8	Bruce Rock	24	Kulin	40	Three Springs
9	Bunbury	25	Manjimup	41	Toodyay
10	Busselton	26	Meekatharra	42	Wadal Forest
11	Chapman Valley	27	Merredin	43	Wannamal
12	Corrigin	28	Miling	44	Watheroo
13	Cue	29	Mingenew	45	West Arthur
14	Denham	30	Morawa	46	Wyalkatchem
15	Denmark	31	Mt Newman	47	York
16	Dumbleyung	32	Murchison		

RESEARCH - PRACTICALITIES

WILDLIFE AND EDGES

by Gary Luck

EDGES are the places where two different landscape elements meet. In agricultural areas they often occur at the boundaries between open paddocks and patches of remnant vegetation. 'Edge effects' are processes occurring at these boundaries. Our knowledge of edge effects, especially in Australia, is in its infancy. A lot more work needs to be conducted to determine how processes occurring at edges influence plants and animals that rely on remnant native vegetation.

Edge effects can be positive or negative. In this article I am going to concentrate on some of the negative impacts of edges and suggest ways in which you can plan your revegetation programs to help reduce these impacts.

The negative effects of edges on remnant bush can be many and varied. Environmental conditions at the edge of a vegetation patch can be quite different from those in the interior. For example, plants living on the edge may be exposed to higher temperatures or greater wind forces. These changes can be detrimental to the plants' survival. They may also assist in the establishment of weeds, which often invade from adjacent cleared land.

Edges between remnant bush and open paddocks may also favour certain animal species. For example, common birds like magpies, ringnecks or galahs are able to feed in open paddocks and use the edges of vegetation patches for nesting and roosting. An increase in the number of these species, at edges, may adversely affect other birds that rely totally on the remnant.

Recent research has found that certain bird species avoid edges. Although increased competition, from species like those listed above, may be one cause, other factors like changes in vegetation or an increase in predation can also have an influence. Birds that avoid edges generally rely heavily on native vegetation and are unable to use adjacent cleared land for feeding. They are often absent from very small remnants and may only be found near the centre of large vegetation patches. To help conserve these species we need to increase the size of our remnant vegetation and reduce the amount of edge.

The impact that processes occurring at edges have on remnant bush are often associated with the size and shape of the remnant. An example of this is illustrated in Fig. 1. Looking firstly at 1a, imagine this as a square patch of remnant vegetation that is 100 ha in size. If an edge effect, eg weed invasion, penetrates for a distance of 80 m into the remnant from all sides, this effectively reduces the size of the remnant to 68 ha. That is, 32 ha of the remnant is affected by weed invasion.

Now take a look at 1b. The area of this remnant is exactly the same as the first, however, its shape has changed. If our edge effect penetrates 80 m from just one side of the

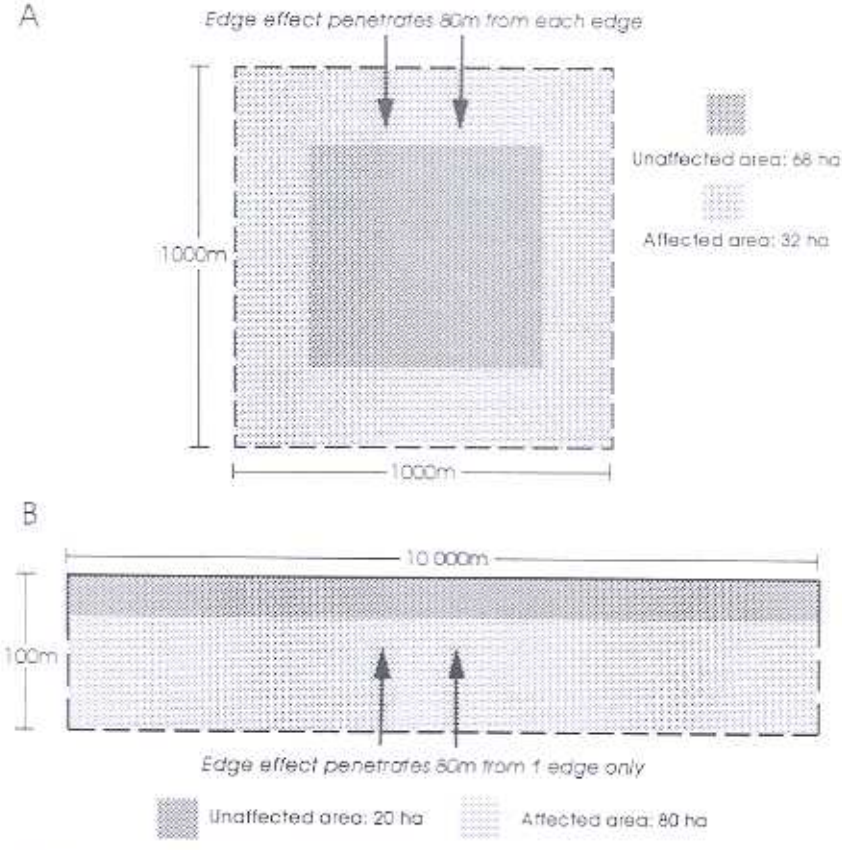


Figure 1: Illustrates how the shape of a vegetation patch can influence edge effects. Both patches are 100 ha in size, however, the affected area in patch B is much greater.

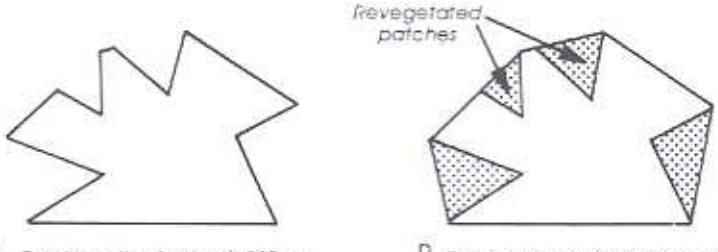


Figure 2: Illustrates a vegetation patch before and after revegetation. By revegetating in this way the length of the edge is reduced and the total area of the patch is increased.

continued on page 19

continued from page 18

remnant, its size is effectively reduced to just 20 ha.

As we can see, shape does influence the impact of edge effects. However, it is often very difficult for us to just change the shape of our remnant bush. Fig. 1 illustrates another important point that may be of more practical benefit. You may have noticed that the total length of the edge increased when we changed the shape of the remnant. For example, the length of the edge in Fig 1a is 4000 m, whereas in 1b it is 20,200 m. The greater the length of the edge, the greater the impact of the associated edge effects.

Bearing this in mind, carefully planned revegetation may be able to limit the effect of edge effects in some of your remnant vegetation patches. This is illustrated in Fig 2. Looking firstly at 2a, you can see that we have an odd shaped remnant. The total length of the edge of this remnant is 325 m. The best way to reduce edge length is to revegetate as suggested in Fig 2b. Now the length of the edge is reduced to 225 m and there is the added benefit of increasing the total area of the vegetation patch.

Other ways to limit the impact of the edge effects are to revegetate close to existing remnants or to join remnants that are close together. Keep an eye out for weed invasion at the edges of vegetation patches and conduct suitable control methods on a regular basis.

Certain processes occurring at edges can have a detrimental effect on the wildlife that relies on your remnant vegetation. However, there are practical ways in which you can limit these impacts and help protect and enhance the value of your native bush. It is also important to remember that any remnant vegetation, whatever its size and shape, has some value and should be protected.

Gary Luck is a PhD student in the Department of Environmental Management, Edith Cowan University, Joondalup. He can be contacted on 08 9400 5056.

ABOUT GROUPS

Malleefowl Preservation Group (Inc)

Concern for the decline of the Gnowangerup Shire's emblem, the Malleefowl or 'Gnow', led to the formation of the Malleefowl Preservation Group in 1992 as a sub-committee of the Gnowangerup LCDC. There are now 450 members, spread throughout WA.

The Group organises field study surveys to search prospective remnants for active mounds (an interesting, though sometimes exhausting, process!) in which over 150 volunteers have so far been involved. Feral animal control is also a very important activity. Revegetation projects designed specifically to act as bush corridors for young malleefowl have also been implimented.

Community awareness is one of the Group's most important goals. A quarterly newsletter 'Malleefowl Matter' is produced. A school education program is run throughout the drier areas of the Wheatbelt. Displays are taken to shows, and one member, Ross Strahan, has even recorded a song 'Old Man Malleefowl'. Our T-shirts and jumpers, featuring a superbly-drawn malleefowl, are proving very popular! And so is the 'home brew' at our social events!

The Group welcomes new members, and public speaking invitations. We would especially like to hear from you if you have Malleefowl on or near your place. Please contact:

Malleefowl Preservation Group (Inc),
PO Box 3, ONGERUP WA 6336
phone: 08 9828 2007
fax: 08 9828 2018

Email: malleefowl_wa@bigpond.com

BUSH DETECTIVE

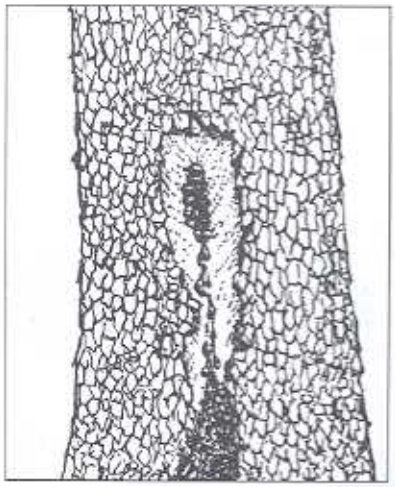
Who's been ripping into the Marris?

Do your Marri trees look as though someone has taken to them with the point of a chainsaw? A deep vertical cut, through the bark and into the wood, with the shavings in a pile on the ground below?

No, its not a human vandal, its a White-tailed Black Cockatoo in search of a fat borer grub for munchies!

Look carefully at the centre of the wound and you will see the tunnel cut by the borer (maybe partly filled with frass, its excretory material). They are huge grubs (sometimes larger than a thumb), packed with protein and well worth the effort that the birds use to get at them.

A black cockie moves along the branch or trunk, moving its head from side to side, "listening?"



for the grub. When it locates a promising site, it uses its powerful beak to rip off the bark and the underlying wood until it reaches the tunnel, and eventually the grub.

The tree seals off such wounds with kino, the red gum which gives Marri its alternative name. The gum contains a fungicidal substance which helps to prevent rot entering the wound.

COMING EVENTS

▶ DRYANDRA WOODLAND ECOLOGY COURSE

CALM will hold another Dryandra Woodland Ecology Course in April or May 1998. These very successful weekends are held in one of the western wheatbelt's most significant conservation treasures, Dryandra Woodland.

The hands-on weekend is run by CALM officers with a broad knowledge of Dryandra woodland and its inhabitants. Tony Friend, the course leader, has a long association with Dryandra and one of its many fascinating animals, the numbat. Participants get the chance to try radio tracking, trapping native animals, spotlighting and participating in Nyoongah cultural activities such as firelighting. This amazing weekend costs just $185 which includes all accommodation, food and transport around Dryandra.

To be put on the mailing list for the next Dryandra Woodland Ecology Course please contact CALM's Narrogin District office on 08 9881 1113.

NEW BOOKS

'HAKEAS OF WESTERN AUSTRALIA: BOTANICAL DISTRICT OF AVON'

by Jennifer Young

pub: WA National Parks and Reserves Association.

This book describes and illustrates 44 Hakeas found throughout the agricultural area. It is very easy to use, and an especially good point is that the plants can be identified from the fruit alone. This is most important if you are collecting seed for revegetation projects. Tips about growing each species, and possible uses, are also included. Whether you just like plants, or whether you are contemplating designing a revegetation project that would apply for NHT 'Bushcare' (biodiversity) funding support, you should have a copy of this book.

Cost : $15.00 + $5.00 postage
From: WANPARA, PO Box 270,
MAYLANDS, WA 6931 ph: 08 9370 5901

FUNDING

Bushcare

See centrefold!!

Gordon Reid Foundation for Conservation

1998 PROGRAM FUNDING

Community organisations can now apply for small grants of up to $5000.

To obtain the form contained in the booklet
Gordon Reid Foundation for Conservation
'Funding Policy and Application Guide'.

Please write to :

Executive Officer
Gordon Reid Foundation for Conservation
Lotteries Commission
P.O. Box 1113
OSBORNE PARK 6197

This Newsletter is a compendium of articles written by many different people. The views expressed are those of the authors, not necessarily those of the Department of Conservation and Land Management.
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