With Wildlife in Mind

Ten years of *Land for Wildlife* in Western Australia

Department of
Environment and Conservation

Our environment, our future

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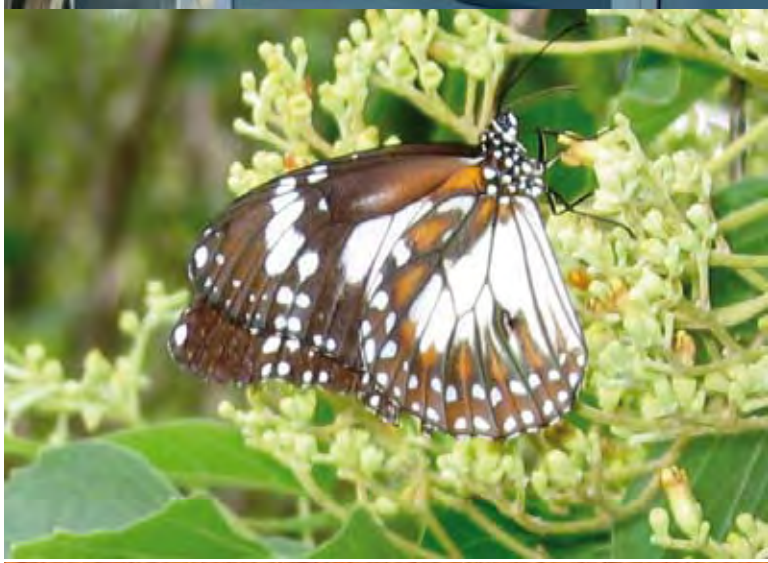


Top: Making room for wildlife.
Photo – K.Miller

Middle: A butterfly on a firestick tree, Broome.

Right: Ornate frog, Broome.
Photos – S. Griffiths

Foreword

Western Australia is internationally known for its diverse and unusual flora and fauna, much of which occurs nowhere else on Earth. Our ecosystems developed in isolation over millions of years, but have been profoundly changed by human activities. In the south-west especially, clearing of native vegetation for agriculture, urban development, infrastructure, transport corridors and mining has left native vegetation fragmented into remnants of various sizes and shapes, isolated within a sea of other land uses. Besides the isolation, the remaining native biodiversity has to cope with a number of new factors, including competition from weeds, feral animals and exotic diseases, changes in fire regimes and hydrology, including the spread of secondary salinity, and the threat of climate change. These threats to our biodiversity could undermine the very ecosystems on which Western Australians depend for much of their well being and prosperity.

To conserve Western Australia's remaining biodiversity, a coordinated effort is required across the whole of the community. It is important that all key stakeholders, government, corporate and private, share the vision of sustainable biodiversity conservation and understand what is required for it to be effective on a landscape scale. The *Land for Wildlife* program is a key element in the Department of Environment and Conservation's strategy to communicate the biodiversity conservation message to private landholders.

The severe threat posed by just one change, the increase in dryland salinity, led the WA Government to produce the Salinity Action Plan in 1996. One of its aims was to 'maintain natural (biological and physical) diversity', and to help achieve this, all landholders were to be 'encouraged to protect and manage remnant vegetation so as to maintain it in perpetuity'. But it was acknowledged that landholders needed to understand the values they were looking after, and how best to do so. The document stated 'all landholders will have ready access to up-to-date, regionally specific information on best management practices and new land management systems'. As one initiative to provide this advice for biodiversity conservation, the Department of Environment and Conservation (then the Department of Conservation and Land Management) committed itself to the establishment of a *Land for Wildlife* program, formally launched in February 1997.

Land for Wildlife was established with a central coordinator and part-time officers in rural locations across the south-west. Staff visit properties, providing detailed written reports on how to integrate wildlife management with other land-uses on the property, so as to maximise the benefits to both. In addition, they also give talks, organise field days, provide displays at agricultural shows and write segments for the local media. Truly multi-skilled people! The expertise and professionalism of the staff team is exemplified by the fact that they have won several State awards.

With the current greater emphasis on whole of community involvement in natural resource management, I believe that *Land for Wildlife* will continue to be a leading player, bringing practical, useable information to an increasing number of landholders who wish to manage their land with wildlife in mind.

Keiran McNamara

Keiran McNamara
Director General
Department of Environment and Conservation

Summary of achievements

(All figures calculated to end December 2006)

Principal environmental outcomes:

* 1586 private landholdings currently being managed with wildlife conservation as a compatible primary objective.
- 248,101 ha of private land now managed primarily for nature conservation using best practice techniques.
- 99 of these properties also contain populations of rare or threatened flora, fauna or threatened ecological communities.

Program outputs

- The number of properties applying for registration with *LFW*:1754.
- The number of properties visited and assessed: 1524.
- The total property area and the area of remnant vegetation assessed,respectively: 1,106,911 ha; and 429,399 ha.
- The area of dedicated wildlife habitat currently registered (*LFW* sites): 248,101 ha – this is a very significant figure, even at the State level.
- The number of landholders who have acted on the recommendations given during assessment: current 'revisits' indicate that on average 80 per cent of the *LFW* recommendations are acted upon.
- The number of landholders whose property also carries a conservation covenant on title: 80.
- The number of landholders who consider *LFW* staff to be knowledgeable and helpful: 97 per cent.
- The number of public talks, workshops, field days etc. where *LFW* is a presenter: 489 (122 'badged' *LFW*).
- The number of displays produced at agricultural shows and other events: 134.
- The number of media articles written by or mentioning *LFW*: print 262; radio 14; television 5.
- The number of publications produced:

o Magazine *Western Wildlife*: 10 volumes with quarterly issues. Current circulation list 1800.

o *Wildlife Notes*: 17 topics.

o 'How to …' booklets: four titles.

o Brochures: three titles.

o Conference or journal papers: 11.

Awards

- National Landcare Awards, 2001, Sigma Landcare Media Award WA: Winner
- State Landcare Awards, 2001, WA Landcare Officer of the Year: Runner-up
- WA Environment Awards, 2003, Promoting Behaviour Change: Winner
- A number of *LFW*-registered landholders have won awards for land management, bushcare or ecotourism. In some instances, *LFW* has nominated them for the award.

Financial incentives linked to *LFW*

- The Shire of Busselton provides pro rata rate relief linked to *LFW* registration. Other local government authorities are in various stages of implementing similar provisions.
- Some funding schemes that require Voluntary Management Agreements link them to *LFW*.

Below: An owlet nightjar dozing in a tree hollow. Photo – A. Sands

Background

Introduction

Human activities have made great changes to the Australian landscape, particularly in the South-West of Western Australia. Where once there was an unbroken expanse of forests, woodlands, wetlands and heath, there is now a mosaic of farmland, towns, industries, roads and railways with variously sized and shaped patches of native vegetation scattered in between. These remnant patches are vitally important for the survival of many species of native plants and animals.

Some remnants are formally reserved for the primary purpose of nature conservation, however, they are not the total answer to conserving biodiversity. Inevitably there will be species and habitat types that are not included within these reserves and mobile species will need to move across the countryside from one seasonal resource to another. In addition, management of land being used for other purposes can have an effect on conservation reserves. Thus, for production to be truly sustainable and biodiversity conserved in the modern world, the whole landscape should be managed 'with wildlife in mind'. This implies that the biodiversity conservation message of appropriate management needs to reach all land managers.

Genesis of *Land for Wildlife* in WA

As the number of funding initiatives grew in the early 1990s it became obvious that a major gap in WA was the provision of accurate, voluntary, non-binding, on-site conservation advice that could be provided to landholders interested in managing their land more effectively for biodiversity conservation. This gap had been highlighted by Coates (1987) as a major impediment to landholders' adoption of conservation practices, and reconfirmed by a repeat survey in 1996 (Jenkins 1996). A paper by Steve Platt at a Geraldton conference in 1994 (Platt & Ahern 1995) suggested that the Victorian program *Land for Wildlife* (*LFW*) could be adapted for WA.

Two officers from the then Department of Conservation and Land Management (this Department amalgamated with the Department of Environment on 1 July 2006 to form the Department of Environment and Conservation), John Blyth and Penny Hussey, developed a proposal to start a *LFW* scheme in WA. Strong support was received from a steering committee of non-government organisation representatives and from Gordon Wyre, then Manager of the Wildlife Branch. The concept was endorsed by CALM's Executive Director, Dr Syd Shea, and Director of Nature Conservation, Keiran McNamara as a pilot early in 1996.

Above: Kevin Binning with blue smokebush, Greenhills.
Photo – P. Hussey

A *Land for Wildlife* coordinator was appointed in July 1996. Aims were written together with strategies for achieving them and indicators to measure performance, all covered by the development of a 10-year plan. The first *Western Wildlife* magazine was produced and the first properties were surveyed in January 1997. The scheme was officially launched in February 1997. A part-time administration officer and one part-time field officer were appointed in March 1997. Six more part-time field officers were appointed in June 1998, and other positions have followed as need dictates and funding permits.

The *LFW* philosophy

Land for Wildlife is a voluntary scheme that aims to encourage and assist private landholders in WA to conserve nature and provide habitats for wildlife (plants and animals) on their property, even though the property may be managed primarily for other purposes.

LFW achieves this in two main ways. Firstly, there is property registration and a site visit that caters for landholders who believe that they have a role to play in nature conservation and wish to be kept informed and encouraged. In this case, the registration acts as a sort of club from which participating members can obtain information and continuing support. Secondly, there is the broader program which aims to assist landholders to find better solutions to management problems that involve protection and enhancement of wildlife habitat. In an ecological sense, the program aims to encourage maintenance of native species and communities across the landscape by encouraging management actions that positively increase conservation value as well as minimising threats to sustainability. In summary, *Land for Wildlife* seeks to encourage a change in behaviour and promote an ethic of conserving nature on private land.

Land for Wildlife complements a range of other nature conservation programs. It provides a way of increasing the visibility and broadening the practice of nature conservation, without being coercive or binding. It is an element in the overall framework of support for biodiversity that provides an introduction to other, more committed approaches to conservation.

Benefits

The strength of the program lies in its simplicity and informality. It identifies and acknowledges those who are doing what they can for nature conservation, providing a network of contacts to researchers and flora and fauna experts. It brings up-to-date information directly to those who can use it in their management, in terminology that is clear and non-technical. Through participation in the program, landholders become aware that incorporating nature conservation is both a desirable, and also a non-threatening, approach to managing the landscape. Above all, it is voluntary and reversible.

Thus the benefits of *LFW* lie in the way it recognises and supports landholders who take a positive approach to nature conservation. This encourages them to face management challenges and, through networking, to exchange ideas with other like-minded landholders. It provides ready access to experts and distributes best practice information to a committed audience, allowing people to adopt ideas at a rate they feel comfortable with. It is essentially an educational role, providing landholders with the basic information needed to make their own, informed, decisions on biodiversity management actions. A major program outcome is an increase in the area of land managed effectively for conservation outside the formal reserve system.

Below: *LFW*, with DEC Albany, organised a four-day workshop to train participants in techniques for fauna surveying.
Photo – Anon

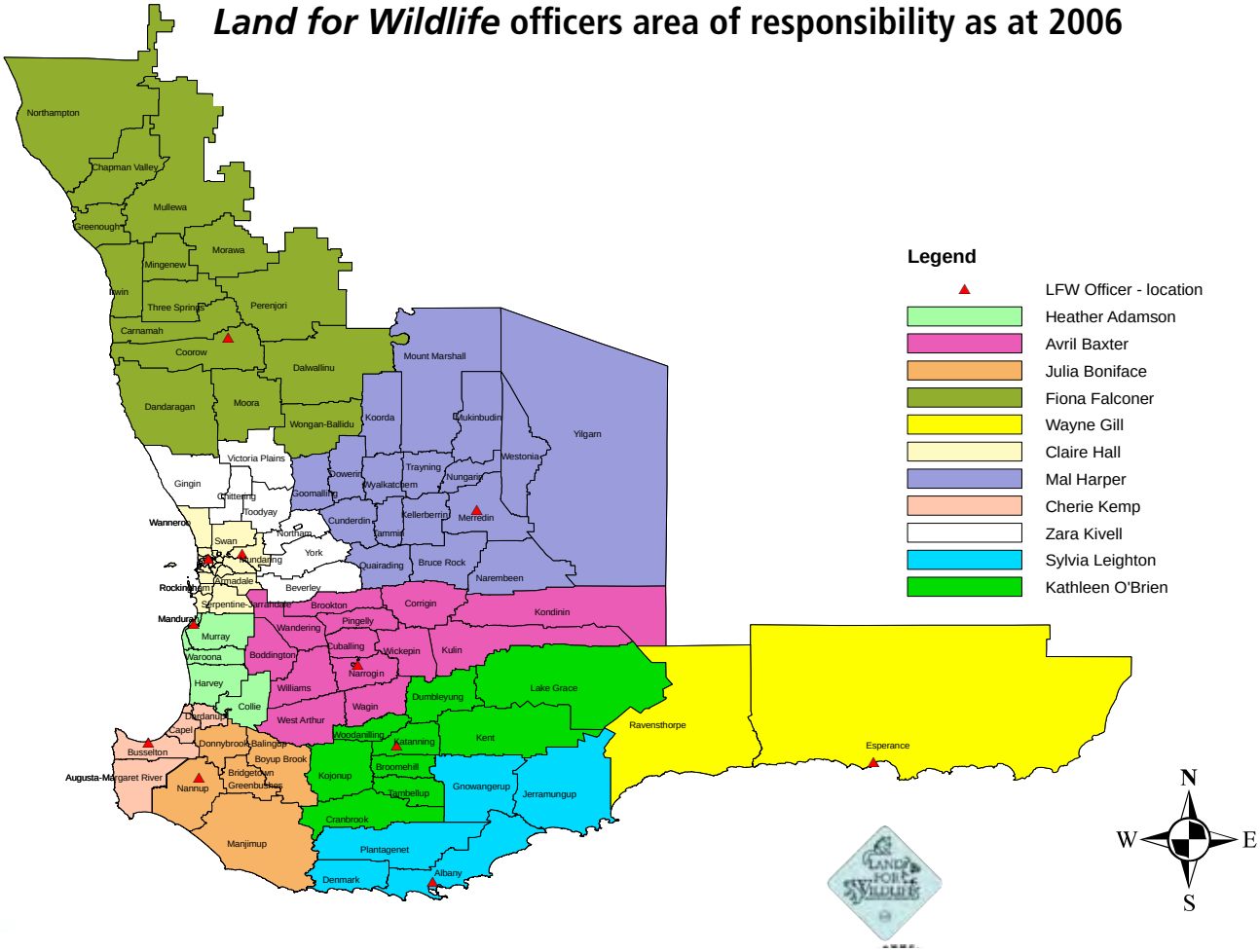
Organisation

Land for Wildlife is a program within the Nature Conservation Division of the Department of Environment and Conservation (DEC). It consists of full-time staff located in Perth at DEC's State Operational Headquarters and regionally-based extension officers.

Full-time staff are located in the Division's Species and Communities Branch at Kensington and consists of a senior project officer, who coordinates and manages the program, assisted by a technical officer and an administration officer.

Field staff are based throughout the South-West agricultural area (see map 1). From the start, a decision was made to employ part-time *Land for Wildlife* Officers (*LFWOs*) who are already members of the local community and have an understanding of local attitudes and concerns and an existing network of contacts. This has been outstandingly successful, enabling a wider network of employees that could be supported by fewer, full-time positions. In addition, the *LFWOs* already have status and recognition within their community, as well as a formidable bank of detailed local ecological, agricultural and historical knowledge. (For list of staff employed, see Appendix 1.)

Map 1: Location and area of responsibility of *LFW* staff



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Funding

Initially, the program was part supported by the then Commonwealth Government's *Bushcare* program under the Natural Heritage Trust. One of DEC's predecessors, CALM, committed to support *LFW* as part of its contribution to the State Salinity Strategy through the Salinity Action Plan (SAP). When the *Bushcare* funding ceased, CALM picked up the continuing funding. Extra funds were made available from the 'salinity dividend' package generated by the sale of AlintaGas (see Table 1).

Above: Mervyn and Brenda Beachham, North Dandalup.
Photo – C. Hall

Table 1: *LFW* expenditure, July 1996–July 2007

year	SAP $	DEC$	Other $	Total $
96/97	-	-	50,000 (Bushcare)	50,000
97/98	150,000	-	113,000 (Bushcare)	243,000
98/99	250,000	-	113,000 (Bushcare	363,000
99/00	250,000		113,000 (Bushcare)	363,000
00/01	300,000	80,000	-	380,000
01/02	300,000	100,000	-	400,000
02/03	300,000	100,000	-	400,000
03/04	300,000	140,000	-	440,000
04/05	300,000	140,000	-	440,000
05/06	300,000	80,000	116,000 (AlintaGas sale)	496,000
06/07	300,000	200,000*	116,000 (AlintaGas sale)	616,000*

* estimate

Activities

Interested landholders register their property with *LFW*. An on-site visit is then arranged. The principal way *LFW* staff provide information to landholders is through discussions during the property visit which is then followed by a written report.

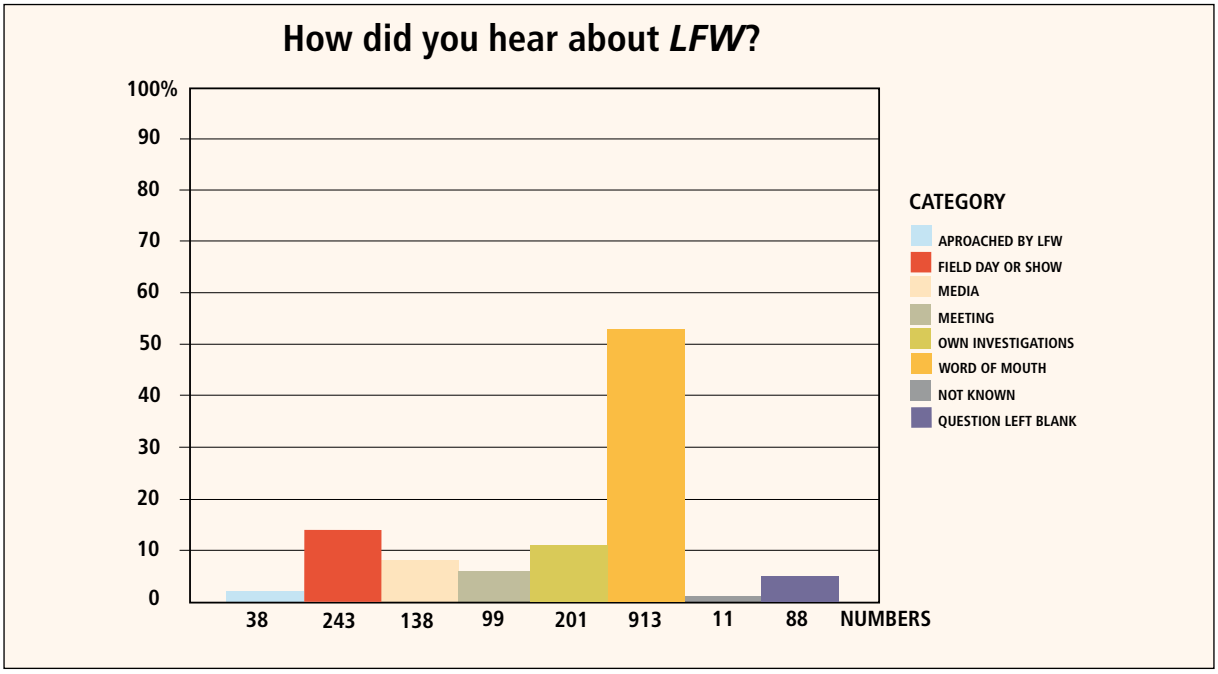
Staff also organise field days and workshops, give talks, lead excursions and write articles for the media, as well as answering queries from *LFW* members and the general public. *LFW* also publishes a newsletter, brochures, fact sheets and booklets.

Promotion of the program

There has been no major promotional campaign for *LFW*, all promotion has been low-key, by talks to groups or letters to key persons such as natural resource management officers. Word of mouth has been very much the primary promoter of *LFW*. Care is taken not to advertise the program where there is not an officer in place to service the demand. Nevertheless applications continue to be received as the community gains awareness of the program. The registration of a number of properties in Broome, for example, has occurred despite no local officer being appointed in the region.

The application form contains a question: 'How did you find out about *LFW*?' The answers (n=1738) were sorted into categories and given in Fig. 1 below. This clearly shows that the program is being promoted within the community. Sixty-one individuals have mentioned using the web, these are included in 'own investigations'.

Figure 1: Source of information about *Land for Wildlife*



In spite of the care taken not to publicly advertise widely, throughout the 10 years of its existence, applications for registration have continually exceeded the ability of staff to undertake the site visit within the given timeframe.

The delay between registration and property visit is termed the 'waiting list' or 'backlog'. The existence of a backlog is not an issue and the demand for visits shows that the program is filling a real need in the community. However, it is important not to let the time lag become too long. The three month waiting time initially laid down as a standard to work to proved too short for part-time staff, and even the amended six month gap has proved impossible to achieve in many areas. In all parts of the South-West, for the whole 10 years, demand has consistently exceeded available staff time.

The average time taken from registration to assessment (n = 1497 visits) is nine months. Around 70 per cent of registered properties are visited within six months, but some prove difficult to contact or to arrange a visit, and so take longer.

There are various reasons why such delays have occurred. As an extreme example, one landholder registered a property, but before a visit could be arranged he took up an overseas posting. He asked to remain on the register and to receive *Western Wildlife*, but it was five years and 11 months before that property was visited. In another instance, a timber plantation company registered its 15 properties, but because individual private landholders received priority it took several years before all were visited. This can have quite an effect on apparent efficiency, so companies are now asked to register only two properties at a time.

This delay between registration and a visit is the main criticism that the program has received. In the January 2000 survey, 1.5 per cent of respondents cited this as a concern. It was made a specific question in the January 2005 survey and 34 per cent of the respondents indicated that it was a problem, corroborating the statistics above that indicated that 70 per cent of landholders, who are visited within six months, are not unhappy with that length of delay.

In September 2002, the State Government announced the allocation of $350,000 from the sale of Alinta Gas to *LFW* which was to be spent over a number of years, specifically to employ extra staff to help reduce this backlog. As a result, the rate of completion of visits has substantially increased in recent years (see Figure 2). However, applications to join the scheme have also increased, so the 'backlog' remains unaltered (see Figure 3). The more we do, the more we are asked to do!

Figure 2: Registrations received and property assessments completed 1996-2006

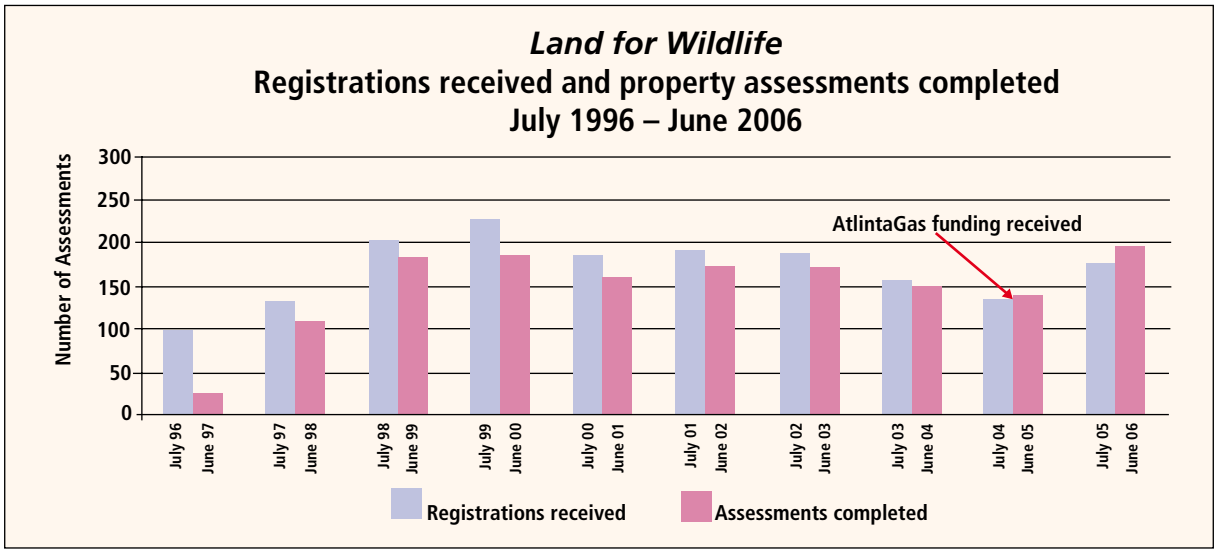
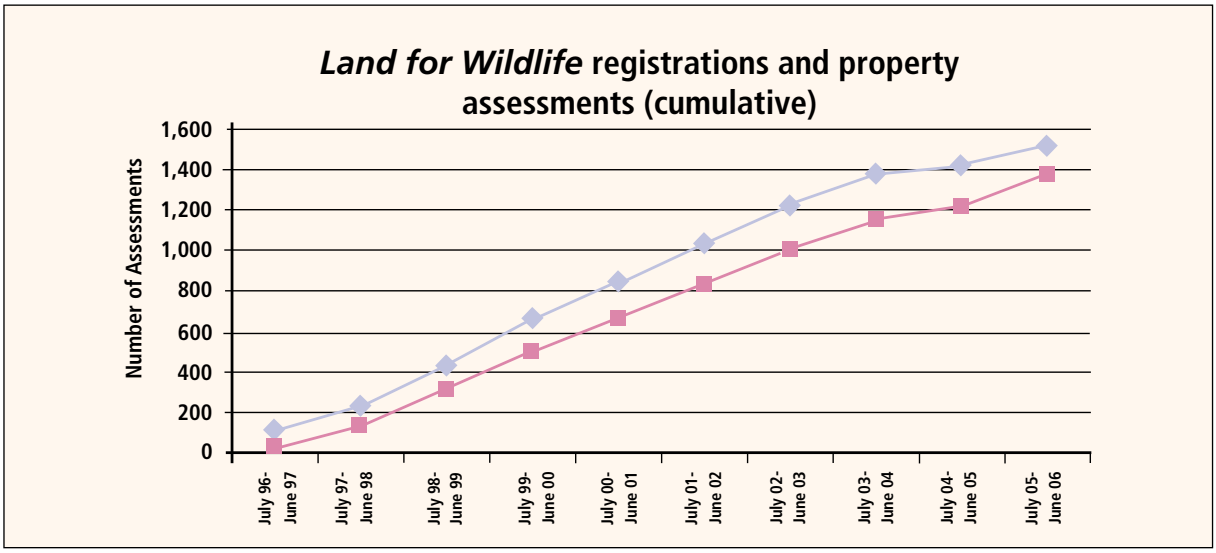


Figure 3: Cumulative totals of registrations and assessments completed 1996-2006



Above: Eagle's nest, Pithara.
Photo – F. Falconer

Questionnaires

In order to determine how the program was perceived by members after three years of operation, a questionnaire was distributed to all readers of *Western Wildlife* in January 2000. It asked some basic questions, but concentrated on the format and content of the publications program, as well as asking for suggestions for future development of *LFW*. A second questionnaire was distributed with *Western Wildlife* in January 2005 and was designed to help with planning for the second 10 years.

The responses to both surveys provided very positive feedback on the success of the program. Some examples are given below.

Question	Jan 2000	Jan 2005
Since joining ***LFW*** I have had a better appreciation of my bushland	70 %	81 %
I have used the information from ***LFW*** to help manage my land	74 %	83 %

In both cases many of the people who responded negatively commented that they were not themselves landholders so replied in the negative, even though they might be using the information in their normal occupation, for example as an academic or landcare adviser.

Specific questions concerning the attitude of *LFW* staff were not asked in the first survey, but produced a very positive response in the 2005 survey.

Question	Jan 2005
I found *LFW* staff knowledgeable and helpful	97 %
I could discuss specific issues directly with the ***LFW*** Officer	93 %

The 2005 survey also asked questions about the quality and relevance of the advice provided. The responses were also positive.

Question	Jan 2005
The advice provided was specific to my needs	91 %
The visit helped me to see my land from an ecological perspective	82 %
The visit helped me to identify threats to my bushland	80 %

Other data from the surveys are referred to elsewhere in this document.

Operation

At its inception, *LFW* put forward a 10-year plan, with aims, strategies and performance indicators.

Aims

i increase the wildlife habitat area under private and local government management which is actively managed for wildlife conservation (as 'off-reserve' nature conservation);
ii establish a register of properties included in the *LFW* scheme;
iii provide advice to enable such properties to be managed on a sound ecological basis to enhance wildlife habitat value;
iv provide direct assistance (if available) to landholders for fencing, replanting, managing wildlife habitats (especially demonstrations of new techniques), or alternatively, steering landholders towards appropriate grant schemes;
v facilitate the expansion of the areas under such management through encouragement and the provision and identification of other resources and advice; and
vi encourage (or establish) wildlife monitoring programs.

These can be summarised as 'the acceptance of nature conservation as an integral part of all land management'.

Strategies

To achieve these aims, *LFW* has the following strategies:

- develop a strong, positive, coherent identity as a team of professional ecologists;
- have clear, unambiguous entry formalities;
- provide information and assistance at the time of entry, verbally during the site visit, also as a written report in a standard format and a package of printed materials tailored to individual needs;
- provide ongoing information, both through printed materials and in response to requests for assistance;
- target communication tools to specific client types;
- create opportunities for networking through field days, workshops etc.;
- provide opportunities for landholders to interact directly with academic researchers; and
- have sufficient staff and resources to meet the expectations raised by the program.

General information about the performance of these strategies is given below. Details of the program's achievements follow in the next section.

Identity

The program's identity is established through consistent use of the name, logo (adapted from the one originally designed in Victoria) and signs. The logo and signs remain basically the same, even when the department and State Government logos contained within them change.

Occasionally landholders ask if they may use the *LFW* logo on their enterprise marketing documents, for example on a tourism brochure or a wine promotion. This is a strong indication of the respect in which the program is held. Permission is not given to use the standard logo, as *LFW* assesses the quality of the ecosystem management, not of the farmstay cottages, golf course, or whatever. Nevertheless, there is no impediment to landholders including a photograph of their sign, with its unique number, on their advertising material, and several businesses have done this.

Entry formalities

LFW registrants may be any person or organisation managing natural bushland, including primary producers (farmers, viticulturists, etc.), lifestylers, local governments, schools or community groups such as golf clubs.

To register with *Land for Wildlife*, landholders must have:

- a property with some natural habitat on it (full registration) or the intention to create some wildlife habitat (interim registration); and
- the avowed intention to at least maintain and at best enhance the value of the property for nature conservation.

Properties of less that 2 ha (5 acres) are not normally admitted for registration, although smaller sized blocks may, in exceptional circumstances, be given a small sign and the landholder put on the *Western Wildlife* mailing list. Properties between 2 and 50 ha are considered 'small blocks' and assessed in a slightly simpler format than larger properties.

Many small blocks are in semi-rural subdivisions where the new owners are keen to create habitat by developing dams, shelterbelts and woodlands to provide wildlife habitat. Where the native vegetation has been cleared, they are awarded 'interim' status— currently 12 per cent of registrations. The only difference is that they do not get a sign until their planned revegetation starts to provide some habitat, at which time a second visit to the property will be made. If they are then assessed as having wildlife habitat on their property, they would be awarded 'full' status, and given a sign. Most such landholders are very keen to get their sign, and pester their *LFWO* for it!

Schools do not have to have a particular size of bushland on the school site to register with *LFW*. Many have arrangements to manage adjacent, publicly-owned bushland, for example, or are involved with nature conservation in other ways.

Information and assistance at time of entry

The core of *LFW* is the property visit. As soon as possible after registration a *LFWO* meets the landholder on site and tours the property discussing matters relevant to property management.

At the end of the visit, the landholder is given a *LFW* file into which the *LFWO* will have placed relevant information such as reference lists, local contacts, and other general information. It has space for filing the property report, *Western Wildlife* and *Wildlife Notes*. If relevant, the landholder will also be offered a copy of *Managing Your Bushland* and the '*How to…*' booklets. Most importantly, if the property has been assessed as 'full' status, they will be given their *LFW* sign.

The property report and any further information requested will be posted to the landholder as soon as possible.

The property visit

At the start of the visit, maps, aerial photographs and property plans are studied and the landholders' aims for the entire property discussed. Areas of remnant vegetation are delineated, possible bush corridors indicated and sites where wildlife conservation is a primary aim are identified. These are called '*LFW* sites'. All (or the most important, depending on time) of these *LFW* sites are visited and the vegetation/ecosystem composition and quality is assessed, together with threats to its

Right: Field day with departmental fauna monitoring team in Lake Magenta Nature Reserve, 2000. Photo – A. Rick

sustainability and management actions (both on- and off-site) are discussed. *LFWOs* are specifically on the lookout for rare or threatened flora, fauna or communities that occur in the general area and could be on the property. Consideration is given to the possible involvement of neighbours, through 'catchment' or 'friends' groups, and whether this could lead to some funding support.

The report is written in a standard format and an informal manner (see Appendix 2). It reports facts as seen and makes suggestions for management. A photo-monitoring point is established. A flora list is usually appended together with specific prescriptions for revegetation if requested.

If the landholder desires, the report may be written (or re-written) as a 'Management Plan'. This is most usually produced at the request of local governments, either for their own land or as a requirement prior to application by a landholder for rate relief.

Provide ongoing information

This is done through the publication program, by arranging talks and field days and by answers to specific queries that may be raised individually.

The quarterly magazine *Western Wildlife* is the principal means of keeping in touch with all registered landholders (*Land for Wildlifers, LFWers*). In addition, each *LFWO* keeps a list of *LFWers* in their area, and contacts them by phone or email at least once a year. Where new information arises that might be of interest to specific properties, it is highlighted in *Western Wildlife* or, occasionally, distributed to individuals.

Targeting communication to client types

Most *LFW* communication is aimed at individual landholders, the primary clients. However, some displays and excursions are specifically tailored for school children. In addition, articles are contributed to the media and professional papers to conferences and scientific journals.

Create opportunities for networking through displays, workshops, etc.

Each *LFWO* must stage one display and organise one event such as a workshop during the year. Many do more.

Provide opportunities to interact with researchers

Through *Western Wildlife*, researchers have the opportunity to inform landholders of their work. They may also highlight the need for field sites, or request observations from readers, thus extending the network of interested volunteer observers and so, potentially, the quantity of valuable information that can be recorded. It also ensures that cutting edge research is brought to the attention of landholders who can incorporate it in their management. Many academics also accept invitations to speak at workshops, or lead field walks.

It has sometimes been possible to arrange for interested members of the local community to interact directly with DEC field staff during fauna surveys, usually by arranging a specific morning for the community to help clear the trap sites. When it can be arranged, this is very popular and a great way of persuading people to become more involved by showing them the animals that are present in the reserves. Since they are nocturnal, many people may have lived all their lives in an area without seeing shy little creatures such as honey possums or mardos.

Resources

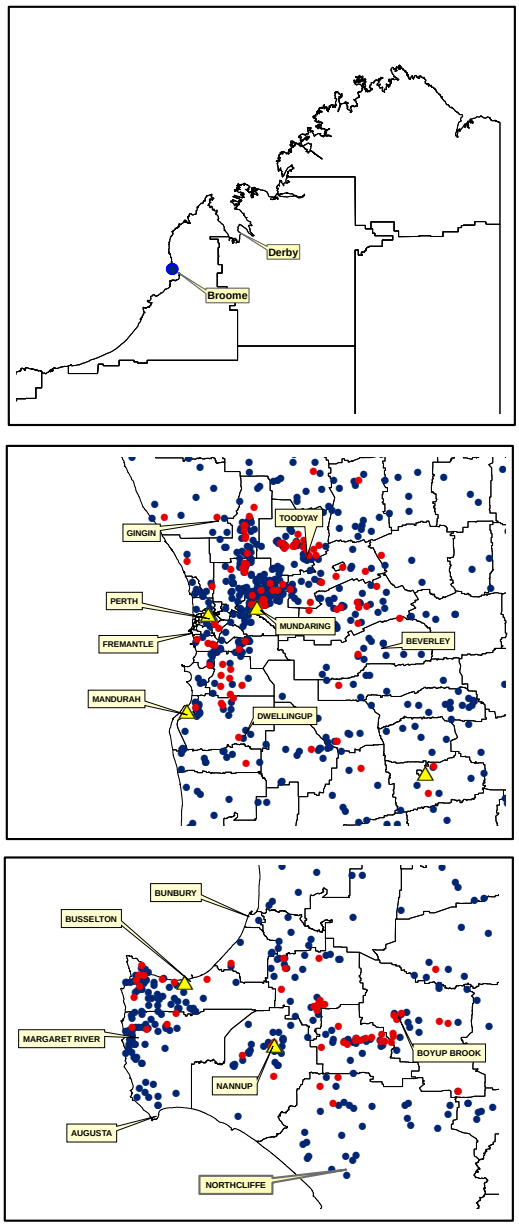
Staff time is the limiting factor in what can be achieved. Requests for visits, revisits, talks and excursions have consistently exceeded staff time available to do them. The more *LFW* does, the more people want it to do!

Achievements

Registrations and assessment visits

The first contact with *LFW* is when a landholder returns the application form registering their property. Details are entered on the database and they are put on the mailing list. Every month new registrations are passed to the *LFWOs* who arrange visits in the order in which the registration is received. Details of the property are not recorded until the assessment visit, so that most *LFW* statistics are based on the number of properties assessed, not the number registered.

Map 2: Location of assessed *LFW* properties



Above: Redwood badly damaged by grazing camels, Coolgardie. Photo – P. Hussey

Land for Wildlife Sites in Western Australia 20 December 2006

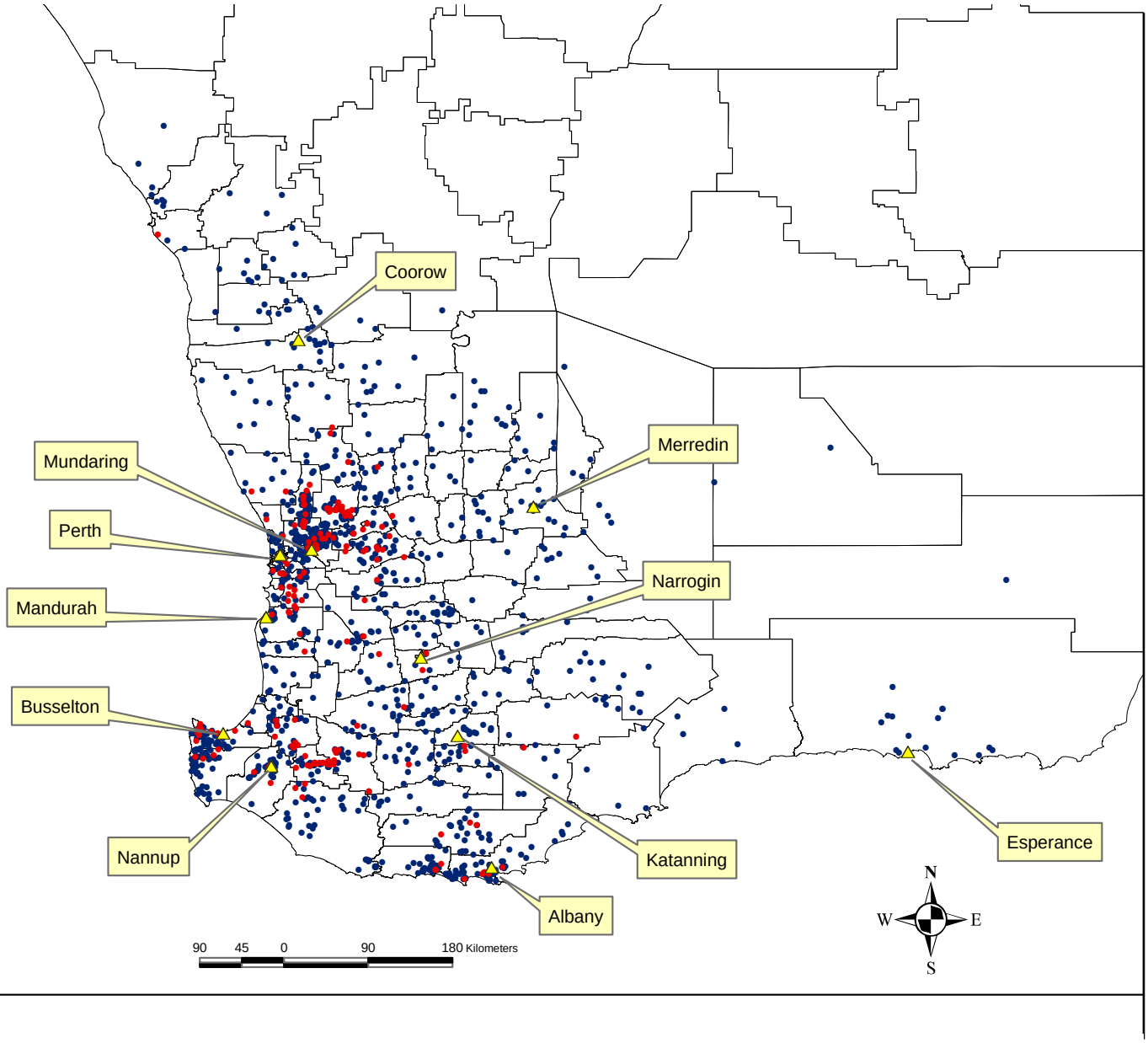


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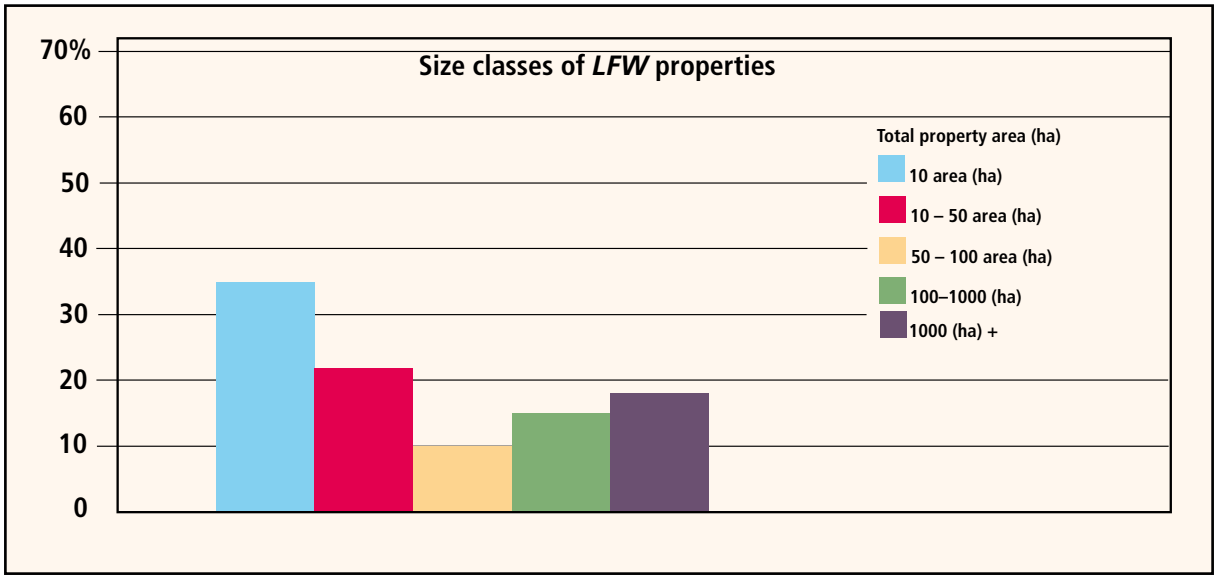
Table 2: Active registrations, December 2006

year	no. registered	no. assessed	total area (ha)	remveg area (ha)	*LFW* site area (ha)
96/97	74	32			
97/98	238	135	115,823	24,391	14,865
98/99	441	308	190,625	36,924	22,995
99/00	659	478	404,769	183,258	77,795
00/01	845	636	503,283	204,151	92,431
01/02	1037	807	578,161	219,403	102,691
02/03	1223	981	701,619	238,849	115,635
03/04 *	1291	1090	934,159	398,947	227,628
04/05	1416	1218	1,000,485	407,447	236,778
05/06	1548	1380	1,053,765	420,081	244,398
Jul-Dec 06	1586	1422	1,075,324	424,842	248,101

* from here on, database 'cleaned' and deregistered properties removed.

What sort of landholders join *LFW*?

Figure 4: Size classes of *LFW* properties



The properties registered with *LFW* fall into three main types according to their size (see Fig. 4):

- Under 10 ha 35 per cent;
- 10–100 ha 32 per cent; and
- over 100 ha 33 per cent.

The small blocks are mostly 'lifestyle' properties, sometimes all bushland, or bush plus paddocks. The group also includes educational institutions (37), golf courses or other primarily recreational properties (10), shire council reserves (10) and 'friends groups' who are usually working on shire council reserves (20). Most of these properties are concentrated around the Perth metropolitan area, on the Leeuwin-Naturaliste Ridge and around larger towns such as Albany and Broome. Lifestylers usually put a lot of effort into their properties, maintaining and improving their value for wildlife

by such activities as weeding, replanting, feral-proof fencing and the installation of nest boxes. As a result, the properties become shining examples of local Australian natural heritage and how to manage it.

The medium sized blocks are more mixed in land use. Many are also lifestyle properties, but there are also recreational sites and primary production such as vineyards, orchards and stock, or ecotourism businesses. These landholders will also put a lot of effort into managing their *LFW* sites with tasks such as weed control and creekline enhancement. Ecotourism operators, especially, see the bushland as vitally important to their business and put a lot of effort into managing it.

The final group is mostly full-time farmers. While they are proud of their bushland they have less time to spend on managing it, apart from fencing to ensure that stock access is controlled. They often take part in fox control programs. These remnant patches can often be quite large and a regime of 'benign neglect' suits them very well. In addition, joining with other landholders to take part in projects linking up the remnants on a landscape scale helps wildlife survival, and in this size group networking with funding providers becomes an important role for *LFWOs*.

Deregistration

Over the 10 years, 10 per cent (175) registrants have left the scheme, usually when the property was sold. On some of these properties, the *LFW* registration is continued by the new owners and another visit is organised to bring the new owners up to speed and learn of their information needs. This visit is recorded as a revisit, rather than a new one.

Table 3: Reasons for removing properties from the register

Property sold	74	42 %
Left address/lost contact (probably also sale of property)	76	43 %
Owner lost interest	14	8.5 %
Deceased person	3	2 %
Unsuitable property	6	3.5 %
Duplicated entry	2	1 %
Total	175	

This overall attrition rate is considered very reasonable, given the turnover in property ownership that inevitably occurs over time. The category of most concern, 'owner lost interest,' is looked at very carefully to see if the program can respond in some way to rekindle the interest. Five of the 14 gave no reason for asking to be removed from the register, others included such reasons as 'family disagreements' or 'change in committee members' in a community group. None of the reasons were specifically related to the performance of *LFW*.

Revisits

Apart from the first visit, at the time of initial assessment, the design of *LFW* envisaged a 'revisit' every five years. This, it was thought, would be able to monitor and record individual achievements, recommend new management techniques and suggest new things that could be done. Regrettably, restrictions on staff time have meant that a systematic program of revisits has not been undertaken. Nevertheless, some properties have been visited more than once.

The most usual reason for a revisit is when a property that is registered as 'interim' is ready for conversion to 'full' status. In the initial property report, a suitable milestone would be suggested, such as 'when fairy-wrens are seen using the revegetation', and when this is reached, the landholder contacts their *LFWO* for a revisit.

When a property changes hands and the new owners wish to continue with *LFW* registration, a subsequent visit is counted as a revisit.

Other revisits are connected with various funding incentives. The Shire of Busselton offers *pro rata* rate relief to properties registered with *LFW*, and this involves revisits every three years. Other local government authorities have similar schemes in various stages of progress, often naming *LFW* as a partner in site assessment. Many funding schemes— Commonwealth, State and local—require management plans for the property before a grant will be considered and also require Voluntary Management Agreements to be signed off with a responsible organisation. *LFWOs* may assist *LFWers* with this; the amount of help is often related to the 'funding savvy' of the applicant.

Impediments to registration

In the early days of *LFW*, officers often encountered anti-government prejudice. This was sometimes quite difficult to deal with, especially at public meetings. However, all *LFWOs* are noted for their tact and now this attitude is far less frequently expressed. We would like to think this is because of the efforts of *LFWOs*, whom a high-profile community spokesperson referred to as 'the friendly face of DEC'.

Although the attitude in rural WA has become more supportive of nature conservation actions in general—certainly when considered in the time scale since the start of organised Landcare in 1982—the program occasionally runs into remnants of the 'bushland is worthless' syndrome. For example, one landowner who was keen to obtain the information on bush management from *LFW* refused the sign as he said it would "lower my credibility with my neighbours". As evidence that this attitude is changing, *LFW* signs now occasionally appear in photographs illustrating 'property for sale' advertisements— and not just bush blocks either!

Below: Woolarama 2005.
Photo – Anon

Bottom: Albany Plantation Forest Company's Emu Plains property.
Photo – S. Leighton

Publications

LFW publishes brochures, single-topic *Wildlife Notes*, a quarterly magazine, *Western Wildlife* and occasional '*How to …*' booklets. A list of publications is given in Appendix 3.

All publications are free to *LFWers*. *Wildlife Notes* and brochures are also free, but the '*How to …*' booklets are saleable. *Western Wildlife* is kept as an exclusive benefit of membership by not permitting people onto the mailing list simply because they are prepared to pay to do so.

In the questionnaire in 2000, two respondents commented that *LFW* should have a website. One was designed and placed on the CALMWeb (now www.naturebase.net) in 2004. It contains a short description of the program, contact information, a 'coming events' list as well as the brochures and *Wildlife Notes* in pdf format.

Western Wildlife

Motto: '*Western Wildlife*, the IN thing, INterest, INform, INvolve, INspire'

The magazine contains articles of general interest on flora, fauna or land management, as well as news, book reviews, and short information snippets. It has received wide endorsement as a useful and very readable magazine. The surveys in January 2000 and January 2005 confirmed this by asking specific questions about *Western Wildlife* which included:

Question	**Jan 2000**	**Jan 2005**
I find *Western Wildlife* interesting and informative	94%	99%
The articles cover topics relevant to land managers	87%	97%
I keep copies of *Western Wildlife* for future reference	96%	95%
I like the style of design and layout	91%	96%

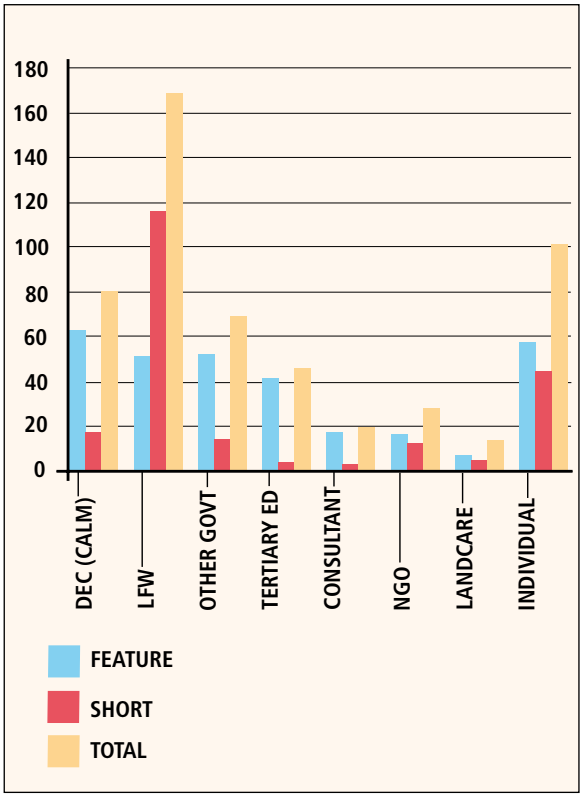
This is a very positive message of support for *LFW's* principal method of keeping in touch with members.

Western Wildlife was also judged the WA winner of the Sigma Landcare Media Award at the State Landcare Conference in 2001.

An analysis of contributions to the magazine reveals that there are 572 pieces with a definite author by-line (see Fig. 5). These were divided into feature articles (one or more pages when set) and shorter ones. Not surprisingly, *LFWOs* have contributed the most articles since they are required to report on workshops or other events. Notable, however, are the number of individual contributions from members. From the beginning *LFWers* were urged to send in articles and photos, and some very fine contributions have come in this way.

By using a simple black and white format for most of the publications, costs have been kept low. On average over the years, the cost of production and distribution of each issue of *Western Wildlife* to an individual recipient is $2.20. Note that the expenditure on publications is around 4 per cent of the program's annual budget.

Figure 5: The source of articles in *Western Wildlife*



Communication with the wider community

In order to inform the wider community, *LFWOs* contribute articles to the local media, put on displays at functions, give talks and also produce papers for journals and conferences.

Above: Teachers' professional development workshop in Albany, coordinated by *LFW* and DEC's Eco Education unit.
Photo – Anon

Table 4: Publicity/extension 1997–2006

	Media			Scientific paper	talk	displays	event badged *LFW*
	Print	Radio	TV				
1997/98/99	31	5	0	0	37	19	5
1999/2000	42	3	0	1	64	17	17
2000/01	59	0	1	0	58	21	16
2001/02	18	2	0	1	42	12	8
2002/03	23	1	2	4	95	12	18
2003/04	27	2	2	4	67	15	17
2004/05	23	1	0	0	43	14	16
2005/06	26	0	0	1	62	17	15
Jul-Dec 06	13	1	0	0	21	7	10
totals	**262**	**14**	**5**	**11**	**489**	**134**	**122**

Media

Each *LFWO* is asked to arrange for at least one piece in their local newspaper each year. This is easier for officers in major towns, where local newspapers and radio have permanent staff. It is much harder for officers based at country locations. Nevertheless, the average figures work out at around two media contacts per officer per year. These are usually publicity about events, although some officers have developed a regular column with a by-line. Radio interviews and television clips are also usualy linked to events.

Events organised (badged *LFW*)

The duty statement for each *LFWO* contains a requirement to organise at least one public information event such as a seminar, workshop or field day each year. The topics would be determined by the interest shown by local *LFWers*. By 1999, *LFW* had sufficient members to start these activities with a field day entitled 'How to manage your granite outcrops' at Kellerberrin. Academics and researchers have been generous with their time, almost always without monetary assistance, giving talks or leading excursions related to their specialty.

Sometimes the officers organise the event by themselves, but it takes a lot of time for part-time staff so they are encouraged to work with other organisations to jointly stage events. This is often very successful, and if *LFW* is clearly identified as a part-organiser the event is still said to be 'badged' *LFW.* Out of 489 'talks', 122 were at events specifically identified with *LFW*.

Staff are often asked to give talks to groups or at events, ranging from presentations to bureaucratic committees to leading bushwalks for an interest group. Many schools ask for presenters, but *LFW* is not set up as a schools program and staff usually decline these engagements due to time constraints. The exception is where the school has registered with *LFW* and the *LFWO* believes that there will be a high conservation outcome from their involvement.

On a couple of occasions, a *LFWO* has played a major role in professional development courses for teachers, usually organised in conjunction with DEC's EcoEducation program. Staff also, where possible, work with Bush Rangers and all schools that host Bush Rangers receive a copy of *Western Wildlife*.

Conference or journal papers

Staff have had 11 papers published (not including in-house publications), mostly in conference proceedings, but also in refereed journals. The ability to contribute at this level demonstrates the high calibre of employees (see list at Appendix 3).

Displays

Over the years, *LFW* Officers have put up 134 displays to promote the program at many different venues, mostly at agricultural shows, but also at shopping centres, local wildflower exhibitions, relevant conferences, seminars or workshops. In many instances, the display is done in collaboration with another organisation, e.g. the local DEC district or a consortium of Natural Resource Management (NRM) groups.

LFW head office holds some display materials that are sent out on loan, but most longer-term *LFWOs* accumulate their own stock of materials relevant to their area.

As the *LFWOs* are part-time, providing and staffing a display is a large commitment of staff time. An evaluation is made after each event to determine its effectiveness, how the presentation could be improved and whether a display in future years would be a worthwhile use of officer time. Only 14 per cent of landholders joining *LFW* indicated that they had heard about *LFW* through viewing a display at a show. Nevertheless, as the number of registrants increase, the value of the stewardship networking that occurs at shows becomes increasingly important, as *LFW* members drop by the stall for a chat. In the January 2005 questionnaire, 40 per cent of respondents said that they had visited a display at a show and of those, 93 per cent found it useful and interesting.

Major events, which attract an almost annual *LFW* presence, include Wagin Woolorama, Dowerin Field Days and Gidgegannup Agricultural Society Show.

Attracting visitors to a display is a skilled art, and the use of colourful native plants and interesting fauna (sometimes live animals) help to make an appealing montage. Competitions or activities for children attract parents. On several occasions, the display has won awards.

Above right: An award at Woolorama, 2000.
Photo – D. Lamont

Right: Newdegate Field Days, 1999.
Photo – A. Rick

Encourage wildlife monitoring programs

When the occasion arises, staff assist the community with wildlife monitoring programs. Some events are fairly low-key such as the collation and recording of bustard sightings in the agricultural area in winter 2005, and organising and leading a 'Great Marsupial Night Stalk'. Several staff in different locations have undertaken this type of activity.

Other staff have run small community fauna surveys on a one-off basis at Boranup, Merredin and Goomalling, for example, usually for a limited period of time.

Two year-long surveys have been done, both involving four observation periods during the year. The first was the 'Community Owl Survey' run in the Bridgetown region in collaboration with DEC owl researcher Ian Wilson, and the second a survey of Lowlands Coastal Reserve (vested in the City of Albany) where the *LFWO* acted as principal researcher for the community group.

All these events record valuable scientific information and, more importantly, they prove extremely successful in stimulating interest in biodiversity conservation among community members who had not previously been involved.

Many landholders wish to monitor wildlife on their own properties, but do not know how to achieve this. Two of the '*How to …*' booklets, 'Community Fauna Survey' and 'Create a Local Herbarium', are specifically aimed at this knowledge gap. *LFWOs* have also demonstrated flora and fauna survey techniques on various excursions. In 2003, *LFW* ran an ambitious four-day workshop designed to give community members the knowledge and skills that could lead to a limited accreditation to conduct low-impact fauna trapping on their property. It was very successful and enthusiastically received, and several attendees have gone on to continue working on fauna surveys, often as a DEC volunteer. Plans for further such courses have, however, foundered on lack of staff time.

In all of this, it is very helpful for *LFWers* to see professional biologists carrying out a survey and get an appreciation of the effort involved and the animals found. Over the years, some *LFWOs* have been able to arrange with DEC's *Western Shield* teams for a community group to attend one morning's trap-clearing session in a local nature reserve. This can have very positive results for the perception of biodiversity and the role of DEC in the local community.

Awards

The program has received several awards. They are:

- National Landcare Awards, 2001, Sigma Landcare Media Award WA: Winner
- State Landcare Awards, 2001, WA Landcare Officer of the Year: Runner-up
- WA Environment Awards, 2003, Promoting Behaviour Change: Winner

In addition, many *LFW* registrants have received awards for land management, bushcare or ecotourism. In some instances, their name has been put forward by *LFW*.

Parliamentary acknowledgment

The then Environment Minister, Dr Judy Edwards, read a statement in Parliament on 20 August 2004, listing the achievements to date of the *LFW* program. She stated: 'This represents an extremely valuable contribution to nature conservation in Western Australia and demonstrates the enormous support that exists in our community for biodiversity conservation'.

Above: Jenny Dewing (left) was named runner up in the WA Landcare Officer of the Year competition in 2001. Then Environment Minister Dr Judy Edwards presented the award.
Photo – P. Hussey

Future directions

Having established itself as a well-respected and effective biodiversity extension service, *Land for Wildlife* will continue with its core business of visiting and providing advice to individual property owners. It will continue to produce extension literature, though possibly the format might change to appear more 'modern' as has already occurred with three existing brochures that were reprinted recently.

Targeting

Officers will continue to respond to requests for assistance from all landholders who ask for registration, however, the recent adoption of NRM strategies by the Regional NRM Councils has revealed locations where those councils believe there to be high nature conservation values on private property, and where they would like those values maintained and enhanced. *LFW* will work with the various NRM groups to 'target' properties within those areas whose landholders could respond well to the *LFW* approach. Hopefully, *LFWOs* can persuade them to join *LFW* to increase their conservation management knowledge and actions, and therefore the likelihood of long-term survival of significant pieces of bushland. In 2001-03, *LFW* worked very successfully with the Blackwood Basin Group (BBG) on one such targeted program, providing on-ground assessment and advice to the funding body, the BBG.

There is also the possibility of targeting landholders with rare or threatened flora, fauna or ecological communities on, or possibly on, their property. During 2006, *LFWOs* worked on one such project—to increase habitat for Carnaby's Black Cockatoos—with an NRM Council and a community group. *LFW's* role was to provide specific ecological advice to the property owner.

Community events

The popularity of recent events held by *LFWOs* to celebrate the program's 10th anniversary has demonstrated that low-key, site-based excursions are very popular. It is expected that these will increase in frequency.

Wildlife monitoring programs

It is hoped that these programs will continue to be undertaken, where there is strong enough community demand to make the effort worthwhile. They are very effective in raising awareness of the importance of biodiversity among the community.

Fauna or flora translocation sites

Rare flora recovery programs are often seeking suitable locations to establish new populations of rare or threatened plants, and *LFWers* may have suitable sites, and be prepared to invest considerable time and effort into assisting with translocation and management to help survival. As more Recovery Plans come into action, the involvement of *LFWers* is likely to increase.

Wildlife carers require a safe location for native fauna release after care, and many *LFW* properties are ideal in both suitability of habitat and in management. In addition, it may be possible to establish new populations of threatened fauna on suitable private property, as well as into dedicated nature reserves. This has happened once on *LFW* properties so far, but it is hoped that it will increase.

Collaboration with education programs, including schools

It is intended to continue collaboration with DEC's EcoEducation and Bush Rangers programs as far as resources permit.

It is hoped to undertake a series of fauna monitoring training courses throughout the South-West (similar to the one conducted in 2003), to train community members in fauna monitoring techniques.

Below: Don Watts released a woylie at Harvey. Photo – P. Hussey

Publications

The quarterly magazine, *Western Wildlife*, has very high approval ratings both within the program and in the wider community interested in biodiversity conservation, and will continue to be produced. Despite a call from 12 per cent of respondents to the recent questionnaire for it to be produced in colour, the cost of doing so makes this unlikely. The possibility of electronic rather than hard-copy distribution will be investigated. The single-topic *Wildlife Notes* will continue to be produced as appropriate. Similarly, for cost reasons, they are unlikely to go to colour. Brochures will be produced if a suitable topic arises. There are no plans to charge for these publications.

There are plans for new '*How to …*' booklets (e.g. '*How to create wildlife habitat on areas of secondary salinity*') that will progress as and when the occasion arises and resources permit.

Future resources

During the past 10 years, *LFW* has been limited in what it can achieve by the resources available, usually meaning staff time. If it is to expand its role, and develop stronger collaborative linkages within the whole natural resource management field, a long-term commitment of more funds to establish and support regional staff will need to be made.

References

Coates, A.M. 1987. *Management of native vegetation on farmland in the Wheatbelt of Western Australia*. Resource Management Technical Report 145. Department of Agriculture, WA.

Jenkins, S. 1996 *Native Vegetation Survey on Farms.* Resource Management Technical Report 64, Department of Agriculture, WA.

Platt, S.J. and L.D. Ahern. 1995. *Nature conservation on private land in Victoria, Australia – the role of Land for Wildlife.* In Nature Conservation 4: the Role of Networks. Ed. D.A. Saunders, J.L. Craig and E.M. Mattiske. Surrey Beatty & Sons, Chipping Norton.

Left: A wet, wet, wetlands field day! Ravensthorpe, 2005. Photo – R. Jasper

Right: 'From the Hills to, Koobabbie', Coorow, 2006. Photo – D. Falconer

Left: *LFWers* collecting rusty bridal creeper to spread the disease to uninfected sites on their properties, for biological control of this weed. Darkan, 2004. Photo – A. Baxter

Stories

Each landholder who has registered with *LFW* has a story to tell—something interesting, exciting or even amusing that has happened on their place. *LFW* property owners are doing such great work that they are all truly inspiring. Because we do not have room for 1647 stories, the *LFWOs* have selected just a few to tell here, but we congratulate every single *LFWer* for your wonderful work. Together, we are making a difference!

Bundilla, Manypeaks

Coogee Primary School, Coogee

Heronsbrook, Margaret River

Leeming Block, York

Mallee Creek, Bonnie Rock

Mandalup-Auhagen, Gidgegannup

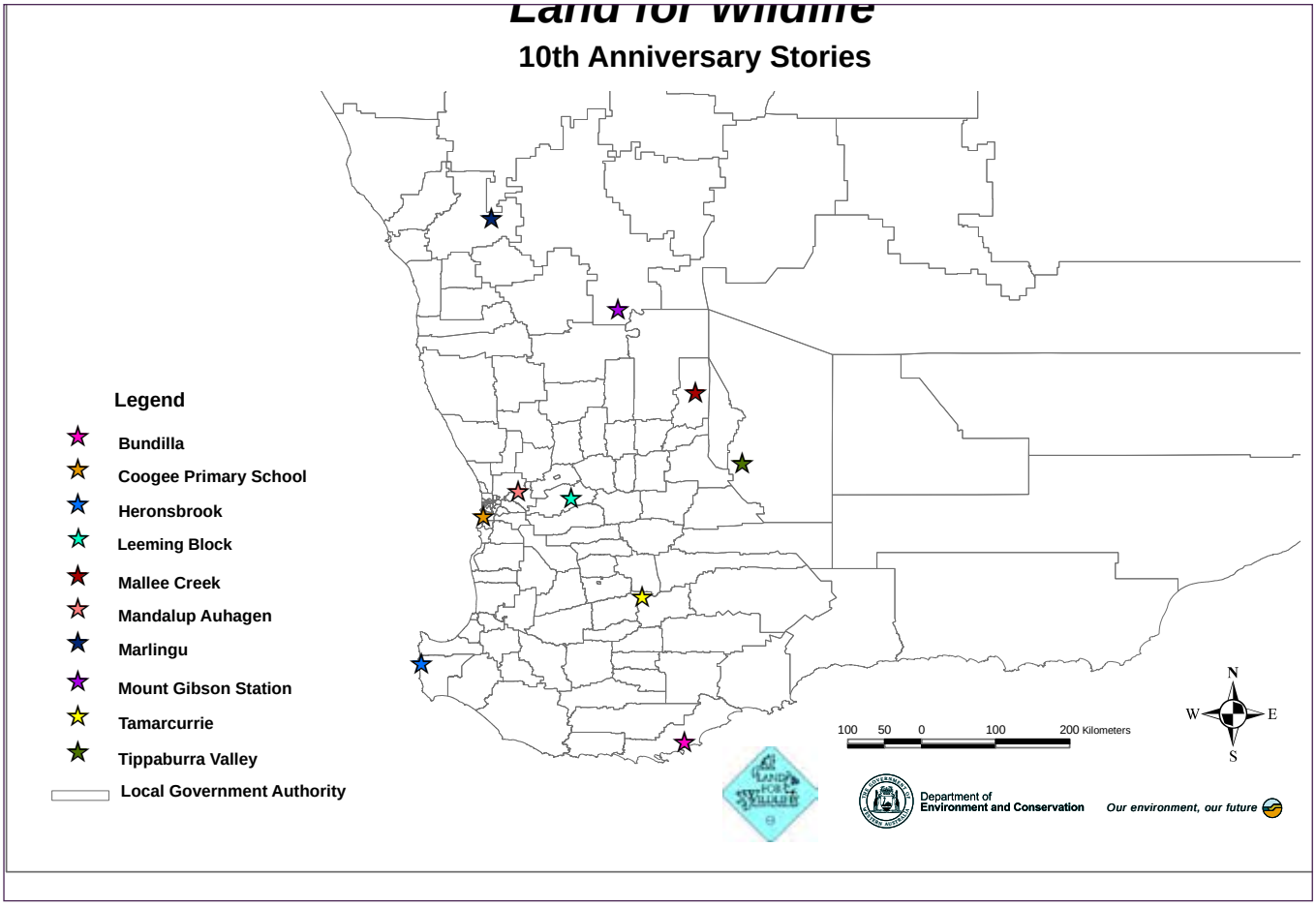
Marlingu, Pindar

Mount Gibson, Wubin

Tamarcurrie, Dongolocking

Tippaburra Valley, Bodallin

Map 3: Location of the properties referred to in the stories



Bundilla, Manypeaks

Doug and Eva Russell's property Bundilla is a 485ha cattle grazing property 5km south-east of the town of Manypeaks on the South Coast of WA. The property was purchased in 1996 with about 75 per cent of the property cleared for grazing.

Bundilla is 1.25km from the northern boundary of the proposed Waychinicup/Mt Manypeaks National Park. The coastal heath in this area is possibly the most diverse in WA. It contains a similar number of flora species (around 1200) to that found in the famous Stirling Range National Park, which is approximately 10 times the size. It also contains several species of declared rare flora and ideal habitat for three endangered bird species: the western whipbird, the noisy scrub bird and the western bristle bird, as well as being home to the endangered quokka. Just 8km to the south-west of the property is Two Peoples Bay Nature Reserve, home to the Gilberts potoroo, Australia's rarest mammal.

Bundilla has two main blocks of remnant vegetation, a 47ha stand of karri trees adjoining a large seasonal freshwater peat swamp in the middle of the block, and a 24ha paperbark wetland and adjoining remnant vegetation block on the southern boundary. The karri forest is the most eastern population of karri trees in Australia. After fencing off the remnant from grazing cattle, the Russells registered their property with LFW and then successfully negotiated a Conservation Covenant with the National Trust of Australia (WA) to legally protect 19 per cent of the total area of the property.

With the assistance of Green Skills (a local community landcare training organisation), the Russell's designed a farm plan that saw them protect and enhance the wetlands, watercourses and native vegetation while retaining enough pastureland so that it could remain a viable cattle-breeding property.

Since taking over the property they have completed 9km of fencing, established 13 shelterbelt/native vegetation corridors with the planting of 33,000 seedlings and 8kg of native seed (some of this being local provenance seed collected on the property). The Russells sought botanical advice so that they could revegetate local plant species to soil type. They designed wider revegetated wildlife corridors to incorporate a seasonal watercourse that meanders out of the freshwater peat lake across the property and eventually enters the Waychinicup/Mt Manypeaks National Park, selecting special local riparian species that would cope with the winter waterlogged conditions. Each year the Russells continued to expand their network of wildlife corridors. They purchased the adjoining farm to the east and immediately fenced off any remnant vegetation, then extended the revegetation of wildlife corridors across onto this property, again linking them to the road reserve vegetation which links to the Waychinicup/Mt Manypeaks National Park.

The Russells have a data collection and monitoring program on their property. They are doing water monitoring of their freshwater peat lake with assistance from officers at the Department of Water. This lake is one of 30 sampled across the South Coast region, and has been identified as being regionally significant to the area and considered a high priority for management. The Russells also have a vegetation quadrant established to record how quickly the remnant vegetation regenerates. This kind of long-term data collection contributes to our understanding of ecological functioning in remnant bushland in this region. Doug also attended a five-day fauna surveying course run by *LFW* to increase his skills in monitoring native fauna on his property.

The Russells enjoy sharing the special natural environments they have protected and welcome a steady stream of visitors to the farm as well as regularly host field days for interested farmers, schools and community to showcase their prized protected wetlands and karri forest. They have also actively lobbied neighbouring farmers to recognise the role their agricultural properties can play as a wildlife buffer around the Waychinicup/Mt Manypeaks National Park and Two Peoples Bay Nature Reserve. They have encouraged neighbouring farmers to fence off remnant vegetation and revegetate wildlife corridors with local indigenous species. Doug was also involved as the community spokesperson in providing advice and assistance to DEC in relation to prescribed burning in Waychinicup/Mt Manypeaks National Park, taking into consideration the populations of noisy scrub birds, quokkas and possibly the Gilberts potoroo.

Doug and Eva Russell have demonstrated through their own actions and by inspiring others that nature conservation can enhance a property. Their farm is a showcase of fenced and regenerating native vegetation, protected waterways and wetlands, and established wildlife corridor belts designed to link to the nearby national park. In recognition of their contribution, they were awarded the WA Bushcare Nature Conservation Award in 2003.

Sylvia Leighton

Coogee Primary School, Coogee

Above: Removing giant reed.
Photo – K. Brown

Many schools have a small patch of bushland, but is it worthwhile for a school to revegetate it? "Yes!" is the answer from Coogee Primary School staff and students. School bushland is valuable, not just for environmental education purposes, but also for the role it plays in involving the community in rehabilitation and revegetation of the site. Schools have the capacity to focus the community – they can make a difference.

Coogee is situated close to the western edge of the Swan Coastal Plain south of Perth and it was a rural area when the first school was built on the site in 1894. The earliest surviving building dates back to 1902 and the present school was built in 1992/3.

The vegetation that once existed in this area, tuart woodland, heath and shrubland, has been largely cleared for horticulture or urban development. The school has about 1.5ha of remnant bushland and there are a number of nearby Bush Forever sites (areas with regionally significant bushland) that have the potential to be linked to this. The school's aims for the bushland are: revegetation, restoration and utilisation as a learning resource for the school. As part of the environmental education program the school appoints a student Environmental Minister who oversees environmental issues at the school.

Year 6 teacher Keith Brown came up with the idea of creating a 'living library' for students to learn about the environment and landcare. Keith subsequently became the school's Bushland Coordinator and won the prestigious national BHP Billiton Science Teacher Award 2004 for his environmental education program and helping students learn about sustainable development by actually practising it.

The students have been involved in a number of revegetation projects, both at the school and on adjacent land. The school was involved in Greening Australia's 'Grow Us a Home' program and assists DEC with revegetation work at Woodman Point. The students are learning about linkages in the landscape by establishing a corridor of tuart trees to link Beeliar and Woodman Point Regional Parks with the school. Shadehouses were constructed so that students could become involved in all stages of caring for native seedlings and planting them out. Over 14 years the students have planted more than 57,000 trees and shrubs and have obtained over $40,000 in sponsorship grants to help.

Coogee Primary School negotiated a Memorandum of Understanding with the Water Corporation to revegetate corporation land adjacent to the southern boundary of the school. This includes a 10-year sponsorship to plant 1000 local plants annually. The whole school planting day is a highlight of the year.

In recognition of all their hard work, the students have won a number of awards including 'highly commended' in the Banksia Foundation Awards and third in the State in the Reflex Habitat Program 2002. In 2004 the Year 6 class won the Office of Children and Youth Affairs Award for their contribution to the environment. In 2005 the Department of Environment awards for inspiring environmental education and environmental Champion were won by Keith Brown and one of his students, Bramley Haran. The school also took part in the 2005 Sustainable Schools pilot project.

Coogee Primary School has played an important role in gathering support from parents, neighbours, environmental groups, local government and State Government for its environmental projects. It has demonstrated the value of educating children about the environment in a practical "hands on" way. Of course there have been setbacks along the way due to drought and vandalism. Disheartening it may be, but everyone has learnt to bounce back and continue working towards their goals.

As a result of all the effort, habitat for fauna has improved resulting in striated pardalotes nesting at the school since 1994 and grey fantails are making an appearance. Several quendas are seen regularly around the school during the daytime as they just love those lunch scraps and take the occasional nap in a school bag. As Keith Brown says: "It is possible to make a difference and it's a privilege as a teacher to show young people that they can make a difference."

Claire Hall

Heronsbrook, Margaret River

Recently I returned to Mike and Mary McCall's lovely 40 ha property 'Heronsbrook' in Margaret River. Five years ago on my first visit there was a new passive solar house with a small native garden and a small vineyard and olive grove under development. The remaining paddocks grew chiefly wild radish, cape weed, thistle and dock. There was a degraded seasonal creek line which included two dams. The dam banks were overgrown with kikuyu and fringed with exotic poplars, willows and *Casuarina cunninghamiana*. The creek banks were in a similar state except where it flowed through an area of degraded bushland.

On the revisit I was amazed with the progress the owners have made. There is now a rabbit, cat and fox proof fence around the 3km boundary. All willows and most poplars are gone. Weed control of arum lilies, bridal creeper and large areas of kikuyu has been achieved. Blackberry has been eradicated in association with a treatment program in properties further up the creek. Sixty large blue gums have been felled and the branches chipped for mulch. Guinea fowl have controlled the wingless grasshoppers.

Fortuitously simultaneous outbreaks of *Calicivirus* and *Myxomatosis* have greatly reduced the rabbit population, while the Fisheries Department has eradicated Gambusia from a soak.

Every year there have been extensive winter plantings of rushes and sedges on the banks of all dams, soaks and the creek edges. Similarly annual winter plantings of native trees and shrubs have continued extending the house garden. Additionally wildlife corridors have been established to link plantings to bush land on the property boundaries. Karri, blackbutt and bullich together with an understorey of *Acacia pentadenia, Chorilena quercifolia* and *Trymalium floribundum* have been established on a karri loam slope.

The bird life has burgeoned with 80 species identified to date. New additions on the dams have been dusky moor hens, hardhead and musk ducks, while the existing populations of purple swamp hens, grebes, coots and black duck have increased. Each year wildlife carers have released ducklings and cygnets together with a variety of other birds in to this safe haven.

Ringtail possums have been reintroduced and there is now a permanent colony with four young sighted this spring. The owners are cooperating with a CSIRO study of dung beetles and are always looking for new ways of utilizing the property.

Above: The feral-proof fence.
Photo – C. Kemp

While the work has been carried out without external funding, many people in the local community have given invaluable time and ongoing help. A local nursery produces many local plant species not otherwise available. Additionally, professional advice on the selection and planting of rushes and sedges has been invaluable.

Highlights of the year include; spring visits by large numbers of Baudin's cockatoos which feed on seeds in the paddocks and marri nuts; the annual hatching of the various bird species, particularly the water birds, honeyeaters, wrens and bee eaters; the succession of mating calls of the 6 frog species as the seasons change and the ever changing appearance of the garden as the hundreds of species of native plants which have been established come successively into flower.

Of course there are frustrations including; difficulty in sourcing WA native plants early in winter so that they can become established and survive their first summer; the apparent impossibility of locally sourcing major WA species which are available in the Eastern States and the lack of a cat bait equivalent to the currently available fox baits. The owners are in no doubt that feral cats, despite the fence, are the biggest danger to their possums.

Their chief hopes for the future are to overcome these problems with the support of other *Land for Wildlifers* and to see additional threatened species safely established on their property and similar properties across the State.

Cherie Kemp

Leeming Block, York

This 69ha block west of Mt Hardey in the Shire of York was purchased by Chris Pullin in 2000. It had been cleared and farmed for probably at least 100 years, but the higher ground carried some remnant woodland of wandoo, brown mallet and salmon gum, with some scrub on a lateritic breakaway. Gravel had been taken from one site.

The aim for the block was to continue cropping the loam soil and revegetate the rest with local native species, to create wildlife habitat and a native seed orchard. It was thought that direct seeding could be used as this would establish a wide range of species with a more natural appearance.

With some suggestions from *LFW* and Greening Australia contracted to undertake the actual work, the gravel pit was seeded in the winter of 2003. As the 2006 photo shows, it has been very successful, and small birds are now regularly using the site. The proposed seed orchard, however, seeded in rows on ex-cropland, was an almost total failure, as it was swamped by paddock weeds.

The lesson from this is that on difficult, harsh soil, where weeds struggle to establish, direct seeding can quickly and relatively easily be used to recreate natural habitat. But on better soils, unless you can undertake a prolonged prior period of weed control, it is probably more efficient to use seedlings.

Penny Hussey

Above: Gravel pit site, 23/11/2002.

Above: Same site, 12/8/2006
Photos – C. Pullin.

Mallee Creek, Bonnie Rock

It's easy to forget where you're supposed to be going, as just getting there is the best approach to a property I've ever encountered. (Especially after previously, just back down the road, driving 25km on a dead straight bitumen road leading straight south into Mukinbudin flanked by totally bare, brown earth of open flat paddocks.) This seemed like I'd journeyed into a lost world. Even the turn-off entrance to the property is a slight fork in the road that disappears into dense vegetation, easily missed if not informed.

The narrow winding 'driveway' twists and turns its way along the base of a large rocky ridge, tall timbers line the road, the rocky ridge and the summit, this is enhanced by a never-ending list of understorey species. Every now and then you're treated to a glimpse of beautifully coloured rock face, complete with mosses, lichens and soil pockets supporting more plants. Welcome to 'Mallee Creek', the Graham's property, just south of Bonnie Rock and adjacent to the magnificent Jouerdine Nature Reserve in Mukinbudin Shire. The total area of their property is 1200ha with 600ha of very diverse remnant vegetation, all of which I'm proud to say is registered with *LFW*.

The homestead is positioned near the base of a gently sloping large granite outcrop, utilising the water run-off, as does the surrounding woodlands. An easy walk to the top of this particular large dome-shaped rock reveals a vast landscape of native vegetation as far as the eye can see while on the horizon sits the solid outline of Yanneymooning Rock, once home to large colonies of stick-nest rats (there is a breeding program at Perth Zoo these days).

Let's walk off the granite, through the mixed shrubland thickets; species too numerous to mention here. Opening out into a seriously old York gum woodland and associated species—wonderful! Next, you can't stop walking, you're drawn along transfixed as the vegetation changes completely again, out onto a platform of gravel and wave to the neighbours 50km away. Growing here is the magnificent *Caladenia mesocera* (narrow-lipped dragon orchid). They sure do wonders for such a harsh-looking spot. The gravel leads into the most beautiful dense mallee country with Borya and annuals from the daisy family thrown in to dominate the groundcover. Suddenly you reach a vast open whiteness of huge clay cliffs and white gums '*Eucalyptus capillosa* style'. The ground is bare except for large rock formations like giant dinosaur poo scattered through the woodland. Up top on the breakaway ridge are colours and views for an artist to die for, not to mention, connected to the east, lies the beautiful Jouerdine Nature Reserve. During the entire walk evidence of native fauna was everywhere – invertebrates, fungi, all too much in one small field trip, a trip I'll always remember.

LFW Site 2 on the property is a deep sandplain area of 100ha, flanked by very wide corridors on each side. Previously cropped, it is now covered with natural regrowth, dominated by Baeckea species and mixed shrubs, acacias, hakeas, melaleucas, hybanthus, goodenias and many others. There are plenty of 'Priority' species here.

David and Christine Graham produce wheat and sheep on their property and are also gifted ballroom dancers. Christine teaches all age groups to dance and David supplies the music at this and other functions throughout the Wheatbelt. Their two young sons also have a keen interest in their bushland, and monitor nocturnal ants for *LFW*. The ants build a magnificent large perfectly-formed dome mound about 45cm round out of sheoak leaf-litter and are only found in one location on the property.

These family members have a special affinity with their bushland that will obviously continue for generations to come!

Heather Adamson

Below: On the breakaway
Photo – H. Adamson

Mandalup-Auhagen, Gidgegannup

Top: Just after the October 2001 fire.

Above: Same location, November 2006
Photos – B. Huston

Bob and Janette Huston bought this 6.4ha bush block in 1993. It is on the Darling Plateau, with laterite boulders and gravel soil, and supports jarrah/marri forest in excellent condition. Apart from the house and some tracks/firebreaks, the main land use in the past was timber cutting. As with most Hills properties, it has been cut over several times, and a large stump shows the slot cut for the 'peg', a projecting board on which the fallers stood to get them into clean timber above the buttresses.

In this area of small holdings, part cleared, part still bush, the management of fire is of great importance. The protection of life and property, and the maintenance of bushland health, both need to be considered. In addition, Bob had joined *Land for Wildlife* as one of the very first *LFW* Officers, as well as becoming active in the Wooroloo Brook Landcare group and the local volunteer bushfire brigade. When he found he was being asked to give advice on fire management to other landholders, it became vital to experiment on his own place.

Bob and Janette had three considerations in view when formulating their fire management plan:

- to utilise fire as a means of regeneration of native vegetation;
- to utilise fire as a means of fuel reduction to reduce risk to their home; and
- to consider their neighbours' needs.

From this they identified a number of issues that included the length of time since the last fire and the need for a control burn to be safe.

As the bush hadn't been burnt for more than 20 years, it had a high fuel load, so it was decided to burn an area adjacent to the house and to ask the local volunteer bushfire brigade to undertake the work. To have optimum management, it was also decided to have the first burn in spring. The aim was for a cool burn, leaving a mosaic pattern in the bush. The immediate desired outcomes included leaving a fine mulch layer as a covering on the earth as well as minimising the impact on unburnt logs and on the tree leaf canopy. The long term desired outcome was regeneration of the bush. Not only that, but the fire history and fuel load of the property would then be at a known point, which would be helpful for future planning.

An area of about one hectare, close to the house and unburnt for more than 20 years, was chosen as a priority. The actual burning of the bushland was achieved in two stages.

Firstly, an edge was burnt in such a way as to keep a 3-4m edge of unburnt vegetation on the edges of the firebreak to act as a buffer against the intrusion of weeds and to provide refuge for fauna. Bob did this himself, but in retrospect said it would have been better to have had this done by the brigade on the day. The main area was burnt in late October 2001. It went well. The fire was lit in the afternoon and extinguished within two hours.

Bob and Janette were pleased to see that immediately following the fire refugia logs were left mostly unburnt as was the finer leaf layer, and macroinvertebrates were seen. Since the fire, healthy regeneration has occurred over all the area, verified by photographs and a nature journal.

This type of small scale control burn will be repeated in other areas of the property to create a mosaic of different fire ages. The piece burnt on the shortest rotation will be the area closest to house. If it can be done so safely, an autumn burn will also be tried, and the type of regeneration compared. Bob and Janette's priority is for bushland conservation, leaving the longest length of time as possible between burns, rather than using fire solely for fire control. They are happy to talk to other landholders about how this may be done safely.

Zara Kivell

Marlingu, Pindar

Mike Kerkmans farms in a harsh environment on the margin between the northern Wheatbelt and the Rangelands. Undaunted, he applies an innovative and visionary approach to sustaining a profitable farm and increasing the health and resilience of the natural environment.

Marlingu was originally a pastoral station established in the early 1900s. The date of first clearing for agriculture is unknown, but the last clearing occurred during the 1960s. The main enterprise these days is grain growing with some sheep. The property is 6300ha in size (farms in the lower rainfall zone of the Greenough Region are on average the largest in WA) with approximately 14 per cent remnant vegetation remaining, three per cent of which is fenced from stock. About two per cent of the total property area is affected by salinity. Regular monitoring of 15 observation bores on strategic sites across the property indicate an average depth to the watertable of between 2m and 4m, fluctuating with rainfall. One hundred hectares of land is set aside for agricultural research, focusing on crop variety and row spacing trials.

The property is located to the east of the Darling Fault on the Yilgarn Craton, the large area of ancient granite and gneiss rock that has been stable for eons. The topography comprises gently undulating sandplain with soils characterised by red, sandy loams over hardpan in valleys and acidic and neutral yellow sands on the sandplains, interspersed by rocky rises.

The native vegetation is representative of the Pindar Vegetation System. The original pre-clearing extent of the Pindar System was 135,099ha. Twenty per cent or 15,407ha remains, some 900ha of that on Marlingu. The Pindar System is associated with yellow sands, red loams and red sands east of Mullewa. An Acacia-allocasuarina-melaleuca thicket is found on the sandplain with *Acacia ramulosa* scrub on rocky hills and York gum woodland on red loams in the valleys. Samphire and teatree species are found along drainage lines.

Four major Mediterranean climatic zones have been recognised in WA, classified by the average number of dry months in the year. Marlingu lies within the 'extra-dry Mediterranean' zone, with an average of seven to eight dry months in a year. Average annual rainfall is 300mm. Most rain falls in winter and summers are dry and hot. Thunderstorms and the passage of decaying tropical cyclones can sometimes deliver significant rainfall during summer and early autumn. However, good summer rains don't necessarily guarantee success for the broadacre annual crops that are the main source of income for the property.

Mike Kerkmans registered his property with *LFW* in 1998. He had a specific goal in mind to encourage native fauna back; and an overall goal for the property to restore natural bush and farm sustainably without harming the environment. At the time, Mike was already implementing landcare initiatives such as earthworks for surface water management. He was also active in the Pindar/ Tardun Mallee Fowl Association and the Midwest Oil Mallee Association, and that involvement has been ongoing.

Since the original *LFW* visit, the landscape of Marlingu has changed dramatically. Extensive revegetation has been undertaken to improve habitat for wildlife and to manage the watertable. There is an ongoing program to fence bush with almost 200ha protected so far, as time and finances allow. Where bush has been protected from grazing there is regeneration of some native plants and the soil crust is re-establishing.

A dual approach has been taken to revegetation. Since 2001, planting of 20,000 bio-diverse species (those comprising a diversity of locally sourced native seed with diversity of structure consistent with local landscape conditions) has aimed primarily to create additional habitat for wildlife. Plantings have enlarged existing patches of bush and created linkages between patches on the property and with the adjoining Pindar Nature Reserve.

Commercial plantings of native species aim to address land hazards such as wind erosion and watertable rise and complement the traditional farming enterprise by spreading risk with income potential (some already being realised) from salt land pastures, carbon sinks trading and biofuels. The commercial plantings (280,000 seedlings since 2001) have less diversity than the bio-diverse plantings. However, Mike thinks that the alley configuration of commercial plantings which creates linkages with remnant vegetation and revegetation across the property is already providing some habitat and opportunity for movement by wildlife.

With an annual average rainfall of 300mm, site preparation and planting methods have been crucial

Above: Mike Kirkmans with the minniritchie wattle, *Acacia grasbyi*.
Photo – F. Falconer

to the success of both biodiverse and commercial plantings. Excellent survival rates have been achieved, greater than 90 per cent in most years. Revegetation sites are pre-ripped and sprayed. A Chatfield tree planter is used for planting. Mike has added an inbuilt watering system to the tree planter that enables a litre of water to be delivered to the root zone as part of the planting operation, enhancing chances of successful establishment in dry conditions.

No 'official' bird list has been recorded for the property but casual observations suggest that there is a rich and diverse bird life, including some species that have become rare in the Wheatbelt, for example the malleefowl and bush stone curlew. Mike believes that the work done in protecting bush and creating linkages, coupled with regular fox and rabbit control, is benefiting birds and other wildlife. Fairy wrens are regularly seen in the corridor link to the Pindar Nature Reserve. Mallee fowl have been sighted recently in the area. The numbers of mulga parrots and finches appear to be increasing. Wedge-tail eagles are still resident and breeding at the 'Eagles Nest' site seen on the first *LFW* visit. Echidnas are observed frequently.

In biodiversity conservation terms, some of the most challenging ongoing issues Mike faces are weed control and management of problem fauna such as kangaroos (over-grazing in remnant vegetation) and galahs (ringbarking trees with hollows). Time is the barrier for Mike to be able to do much about these problems.

Mike is well on the way to achieving his goals with regard to *LFW*. More fencing of bush will be a priority for the future. In the meantime, he is setting an example of successful integration of nature conservation with broad acre farming in what must be one of the most challenging environments in South-West WA.

Fiona Falconer

Tamarcurrie, Dongolocking

Top: The breakaway August 2002 – ripped and ready to plant. Above: Four years later, June 2006 – a well-covered site including self sown plants.
pPhotos – G. Mullen

Good farmers make great bushland managers! Joy and Scott Angwin have been farming together for 11 years and in 2005 won the Farm Weekly Landcare Primary Producer Award.

Their farm, Tamarcurrie, is 45km north-east of Wagin and adjoins nature reserves within the Dongolocking area. They realise that they live in an area of high conservation value. As Joy states: "We are fortunate to have endangered animals such as the red-tailed phascogale and quendas in our area and consider the habitat needs of the native fauna in all biodiversity projects."

They take a whole-of-landscape approach to farming involving water harvesting, contour farming, minimum tillage, small paddocks, perennial forage systems, fenced remnant vegetation and revegetation of breakaways, below water harvesting banks, along creeklines and in blocks or alleys. All farming practices interact, so that each activity serves more than one purpose.

Some activities, with a primary focus of nature conservation, include buffering smaller bushland areas with oil mallees and creating a corridor, which extends almost 15km along the length of the farm. In 1992, they established a corridor designed to encourage the movement of phascogales between two reserves, which nature enthusiasts from the local community monitor on a regular basis for birds and small ground dwelling animals. They have also been involved in pig trapping and surveying for mammals with the local scout group as part of the Great Marsupial Night Stalk.

Living adjacent to the Dongolocking reserves, Joy and Scott were able to avail themselves of cost sharing arrangements developed between DEC, NHT and landowners to revegetate areas that would bolster the Dongolocking reserves and implement part of the farmers' long term plans for their property. One area chosen is a breakaway close to nature reserves, which was shedding water and affecting the farmland directly below.

The breakaway was ripped on the contour with a D8 bulldozer that was working in the area at the time. A smaller dozer would have been acceptable, but the capability to rip through the heavy clays and be stable on a steep incline was necessary. Weed control began after the break of the season with two applications of glyphosate. A residual herbicide was not deemed necessary, as there was a native seed bank present, relatively few weeds and low fertility at the site.

Employees from DEC collected the seed and hand planted the site. This allowed them to create a mosaic of different vegetation associations across the site mimicking similar landscapes in the district. The mallees for example, were planted in pure stands and five mallee species were incorporated, allowing for a wide range of flowering times. This provides an important nectar source outside the main flowering period. Some of the mallees such as *Eucalyptus thamnoides, E. albida* and *E. pluricaulis* are not often utilised in wide scale plantings and grew very well.

Seeds were collected from a large number of parent plants to provide a wide genetic background and when grown in the nursery went through a quality assurance process to make sure the best quality seedlings were available at the time of planting. Seedling density (at 1667 per ha) is higher than is commonly planted in the area. This has resulted in a more rapid suppression of weeds, cooler soil temperatures and more rapid leaf litter accumulation.

Five years later there is a 98 per cent survival rate, some species are 5m tall and there is a considerable suite of self-sown species or previously heavily browsed plants recovering and flowering. Given that the year of planting was one of the driest on record (180mm), it shows what results can be achieved with attention to detail.

Avril Baxter

Mt Gibson - Wubin

Above: Salmon gum woodland lines the road in to the homestead.
Photo – P. Hussey

Heading north on the Great Northern Highway past Wubin, you soon leave farms behind and pass into pastoral country. Mount Gibson is the first station to the east. It lies to the south of the greenstone ridge dominated by Mt Singleton while the huge, saline Lake Moore forms its eastern boundary. It is covered by a northern extension of the Wheatbelt flora, with vast expanses of kwongan and woodlands, interspersed by laterite breakaways and low granite domes. As with the rest of arid zone WA, rocky areas mean that water catchment and storage in gnammas is possible and the area has many sites of great significance to Aboriginal people.

Once European settlement commenced, most of the original activity in the area was associated with small-scale gold mining at Mt Gibson itself, and later a larger mine has been operating. This lies mostly in unallocated Crown Land, adjacent to the Mt Gibson lease. The area also contains iron ore deposits, and after extensive exploration, a mine with its associated transport infrastructure is planned. Close to water sources over much of the area, abandoned camps made by sandalwood pullers can be found. They took out most of the accessible trees, while rabbits and goats removed regenerating seedlings, but there are still some large trees around.

The sheep station was first allocated in 1890. However, except for the saline lake frontage, this type of vegetation has never supported high numbers of stock and by the 1970s it was somewhat neglected and shearing few sheep, though goats were very common and there were also a few brumbies.

A group of conservation-minded persons bought the lease in 1975 and worked on a mostly voluntary basis to regenerate and revitalise the property. They registered Mt Gibson with *Land for Wildlife* in 1998, and the property visit took place in 1999. Our advice concentrated on flora identification, the effect of fire on regeneration in different vegetation communities and detailed background on topics suggested for inclusion in a brochure related to a proposed walk trail originating at the campsite. The station contains York gum, salmon gum, inland wandoo, Goldfields blackbutt and gimlet woodlands in relatively natural condition that have regenerated strongly after lightening-caused fires. Monitoring of this regeneration will provide much-needed information to assist with management of these communities in the wheatbelt.

The lease of Mt Gibson was purchased in 2001 by the Australian Wildlife Conservancy. The organisation has great plans for the station. Translocations are a priority with a 4000ha (feral-free) electrified enclosure being planned for the release of threatened fauna species endemic to the Mt Gibson region (e.g. woylies, boodies, bilbies, banded hare-wallabies and others).

A five-year Invasive Animals Cooperative Research Centre project in conjunction with DEC has begun. Its primary focus is on the control of feral cats, foxes and wild dogs through intensive baiting and monitoring for reinvasion. Bi-annual fauna surveys are conducted to show the effect of predator control on existing native fauna, with the initial results showing great promise. Goat and sheep numbers continue to be reduced to allow the natural recovery of heavily grazed areas.

In the future *LFW* hopes to keep in touch with Mt Gibson; as in the past, contributing ideas, suggestions and advice where we can, but also learning from the work done on the station. It's a great place for a camping weekend (minimal facilities), only four and a half hours from Perth!

Penny Hussey

Tippaburra Valley, Bodallin

Buddy Kent farms Tippaburra Valley, a 2552ha property south of Bodallin. It has 845ha of remnant bushland, all registered with *LFW*. The Kent family retained large areas of bushland and windbreaks/ corridors around their paddocks in the early days when clearing was the order. Over the years the main farming enterprise has been grain, cattle and sheep, but these days much of the farm is leased. After sustaining the families for so long, Buddy decided to repay the land.

Much information was needed, which was quietly gathered and put into action. This included permanently fencing all the remnant bushland and corridors, extending and rehabilitating where necessary. Of course one thing leads to another and the local species required weren't readily available. A large native plant nursery was established on the property and kilos of seed collected. Buddy has provided others in the Yilgarn Shire and beyond with the chance to have locally grown seedlings. His dedicated seasonal seed collecting, especially during the hot summer months (when most people would melt in the shade without actually lifting a finger!) has contributed to numerous rehabilitation projects throughout the Central Wheatbelt. Funding was received through the National Heritage Trust and WWF-Australia with 30,000 trees and shrubs planted and 25km of fencing completed on the property to ensure future protection of the bushland and connecting corridors.

A successful olive plantation was also established in 2000 consisting of 2000 trees, now successfully hosting sandalwood, that to date are around 60cm high and going strong.

I know Buddy would not want me to praise him for anything, as to him this is just part of his everyday procedure of just "getting on with it". He's as at ease with hard work as he is with watching an ant carry a leaf. Every detail on his farm has been revised and revised again on how he can improve things for the plants and animals that live there. He sleeps outside most of the year so as not to miss a single call of the owlet nightjar, mopoke or other night noises, and shares his work shed with a resident snake. (He may just inform you it's there, but most of the time he won't bother.)

So it won't come as such of a surprise to learn that Buddy has recorded over 50 bird species, compiling this information for Birds Australia's *Birds on Farms* publication. They include malleefowl which wander through his house yard in typical chook fashion, while he monitors their habits and active mounds on his property. Buddy has accompanied the Malleefowl Preservation Group on many a malleefowl survey and assisted in forming the Nulla Nulla Malleefowl Group in Bodallin.

The vegetation includes dense gimlet/salmon gum woodland, mixed mallee and shrubland. It also features several granite outcrops with surrounding woodlands, mallee/melaleuca thickets, ridges, sweeping valleys and diverse deep yellow sandplains. Six species of mallee were identified during the Wildflower Society of WA Bushland Plants Survey Program in September1998.

Fox baiting has been applied routinely for many years along with feral cat control. The results are obvious – abundant birdlife, scats and tracks and regular sightings of echidnas, dunnarts and Mitchell's hopping mice, as well as numerous reptile tracks (made fresh daily) in the warm season.

The whole landscape is one huge wildlife sanctuary, with so much to investigate or simply observe and learn – just ask Buddy! He's easy to talk to but not so easy to catch! Our congratulations to Buddy for his solitary hard work, remarkable achievements and strong focus on preserving this property and its unique bushland for wildlife and the future.

Heather Adamson

Below: Active malleefowl mound in gimlet woodland, first photographed when just being started during the *LFW* visit in 1997. In has been constant use since. This photo was taken in 2004. Photo – H. Adamson

Appendix 1

Staff employed over the 10 years

***LAND FOR WILDLIFE* – STAFF 1997 - 2006**

Penny Hussey
POSITION: *LFW* Coordinator – title changed to Senior Project Officer *LFW* in Sept 2003
DATE COMMENCED: 1/7/1996
LOCATION: Kensington
FTE: 100%

Claire Hall
POSITION: Administration Officer *LFW* – title changed to Technical Officer *LFW* in Sept 2003
DATE COMMENCED: 1/11/1999
LOCATION: Kensington
FTE: 100%

Anthea Jones
POSITION: Acting SPO *LFW*
DATE COMMENCED: 10/1/2005
DATE ENDED: 30/6/2006
LOCATION: Kensington
FTE: 100%

Emma Bramwell
POSITION: Administration officer *LFW*
DATE COMMENCED : 1/5/1997
DATE ENDED: 30/10/1999
LOCATION: Kensington
FTE: 40% then 100%

Robyn Polini
POSITION: Administration Officer
DATE COMMENCED: 16/10/2006
LOCATION: Kensington
FTE: 100%

Heather Adamson
POSITION: *LFW* Officer
DATE COMMENCED: 1/7/1998
LOCATION: Merredin Mandurah from Feb 2006
FTE: 40% then 60%

Avril Baxter
POSITION: *LFW* Officer
DATE COMMENCED: 1/7/1997
LOCATION: Narrogin
FTE: 40% then 60%

Sue Birnie
POSITION: *LFW* Officer
DATE COMMENCED: 24/3/2003
DATE ENDED: 15/4/2003
LOCATION: Kensington
FTE: 100%

Julia Boniface
POSITION: *LFW* Officer
DATE COMMENCED: 16/2/2004
LOCATION: Nannup
FTE: 40%

Jenny Dewing
POSITION: *LFW* Officer
DATE COMMENCED: 1/6/1998
DATE ENDED: 23/12/2003
LOCATION: Bridgetown
FTE: 40% then 60%

Alison Dugand
POSITION: *LFW* Officer
DATE COMMENCED: 1/12/2002
DATE ENDED:31/8/2003
LOCATION: Mundaring
FTE: 40%

Fiona Falconer
POSITION: *LFW* Officer
DATE COMMENCED: 1/11/1999
LOCATION: Coorow
FTE: 40%

Pene Fewson
POSITION: A/*LFW* Officer
DATE COMMENCED: 16/8/2004
DATE ENDED: 12/11/2004
LOCATION: Albany
FTE: 40%

Jenny Gardner
POSITION: *LFW* Officer
DATE COMMENCED: 13/3/2002
DATE ENDED: 25/6/2002
LOCATION: Katanning
FTE: 40%

Wayne Gill
POSITION: *LFW* Officer
DATE COMMENCED: 17/7/2006
LOCATION: Esperance
FTE: 40%

Mal Harper
POSITION: *LFW* Officer
DATE COMMENCED: 4/3/2006
LOCATION: Merredin
FTE: 40%

Bob Huston
POSITION: *LFW* Officer
DATE COMMENCED: 1/6/1998
DATE ENDED: 1/11/2002
LOCATION: Mundaring
FTE: 40%

Rosemary Jasper
POSITION: *LFW* Officer
DATE COMMENCED: 10/6/2002
DATE ENDED: 21/12/2005
LOCATION: Ravensthorpe
FTE: 40%

Cherie Kemp
POSITION: *LFW* Officer
DATE COMMENCED: 1/6/1998
LOCATION: Busselton
FTE: 40% then 60%

Zara Kivell
POSITION: *LFW* Officer
DATE COMMENCED: 1/11/2003
LOCATION: Mundaring
FTE: 40% then 60%

Sylvia Leighton
POSITION: *LFW* Officer
DATE COMMENCED: 1/7/1998
LOCATION: Albany
FTE: 40% then 60%

Sarah MacEvoy
POSITION: *LFW* Officer
DATE COMMENCED: 7/3/2002
DATE ENDED: 7/6/2002
LOCATION: Kensington
FTE: 100%

Volker Miscker
POSITION *LFW* Officer
DATE COMMENCED 1/1/2001
DATE ENDED: 18/8/2001
LOCATION: Esperance
FTE: 40%

Steve Newbey
POSITION: *LFW* Officer
DATE COMMENCED: 5/8/2002
DATE ENDED: 31/8/2003
LOCATION: Kataning
FTE: 40%

Robyn Nicholas
POSITION: *LFW* Officer
DATE COMMENCED: 1/6/1998
DATE ENDED: 29/10/1999
LOCATION: Morawa
FTE: 40%

Kathleen O'Brien
POSITION: *LFW* Officer
DATE COMMENCED: 20/5/2005
LOCATION: Katanning
FTE: 40%

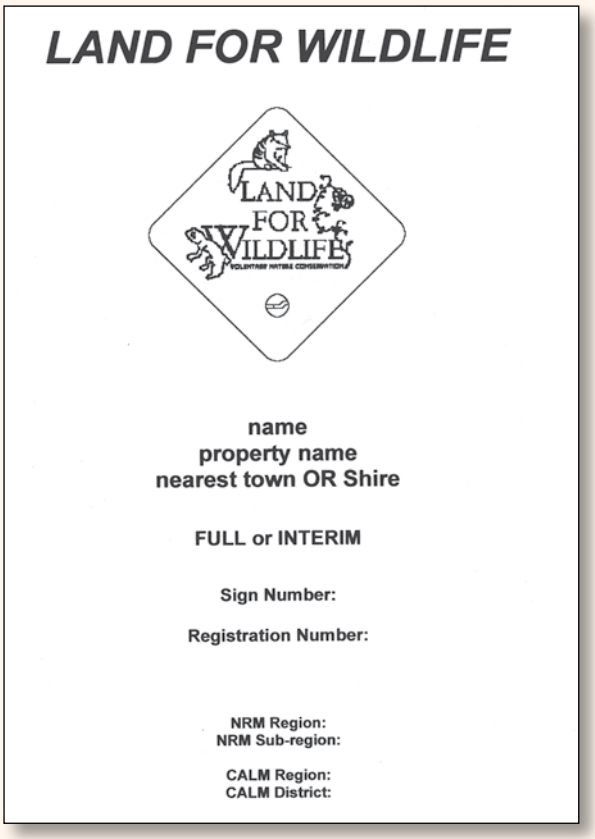
Anne Rick
POSITION: *LFW* Officer
DATE COMMENCED: 1/6/1999
DATE ENDED: 18/12/2001
LOCATION: Newdegate
FTE: 40%

Teagan Smith
POSITION: *LFW* Officer
DATE COMMENCED: 13/6/2005
DATE ENDED: 6/06/2006
LOCATION: Kensington
FTE: 100%

Leon Sylvester
POSITION: A/*LFW* Officer
DATE COMMENCED: 16/7/2006
DATE ENDED: 18/12/2006
LOCATION: Narrogin
FTE: 40%

Appendix 2

Property assessment template



LAND FOR WILDLIFE

name
property name
nearest town OR Shire

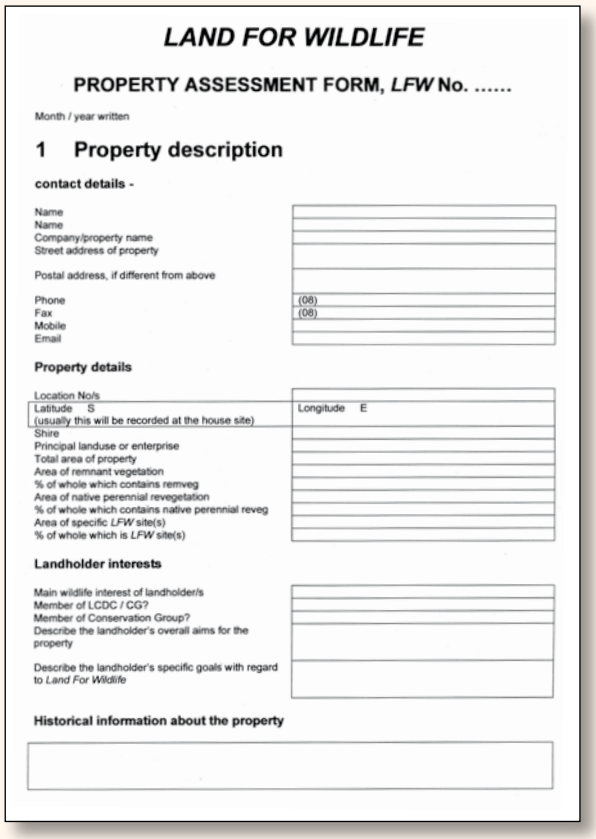
FULL or INTERIM

Sign Number:

Registration Number:

NRM Region:
NRM Sub-region:

CALM Region:
CALM District:



LAND FOR WILDLIFE

PROPERTY ASSESSMENT FORM, *LFW* No. .....

Month / year written

1 Property description

contact details -

Name	
Name	
Company/property name	
Street address of property	
Postal address, if different from above	
Phone	(08)
Fax	(08)
Mobile	
Email	

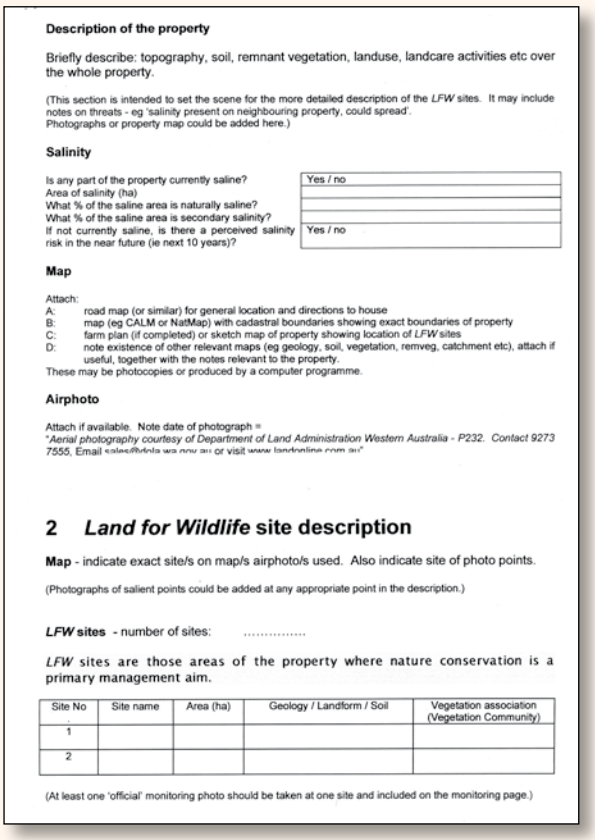
Property details

Location No/s	
Latitude S (usually this will be recorded at the house site)	Longitude E
Shire	
Principal landuse or enterprise	
Total area of property	
Area of remnant vegetation	
% of whole which contains remveg	
Area of native perennial revegetation	
% of whole which contains native perennial reveg	
Area of specific *LFW* site(s)	
% of whole which is *LFW* site(s)	

Landholder interests

Main wildlife interest of landholder/s	
Member of LCDC / CG?	
Member of Conservation Group?	
Describe the landholder's overall aims for the property	
Describe the landholder's specific goals with regard to *Land For Wildlife*	

Historical information about the property



Description of the property

Briefly describe: topography, soil, remnant vegetation, landuse, landcare activities etc over the whole property.

(This section is intended to set the scene for the more detailed description of the *LFW* sites. It may include notes on threats - eg 'salinity present on neighbouring property, could spread'. Photographs or property map could be added here.)

Salinity

Is any part of the property currently saline?	Yes / no
Area of salinity (ha)	
What % of the saline area is naturally saline?	
What % of the saline area is secondary salinity?	
If not currently saline, is there a perceived salinity risk in the near future (ie next 10 years)?	Yes / no

Map

Attach:
A: road map (or similar) for general location and directions to house
B: map (eg CALM or NatMap) with cadastral boundaries showing exact boundaries of property
C: farm plan (if completed) or sketch map of property showing location of *LFW* sites
D: note existence of other relevant maps (eg geology, soil, vegetation, remveg, catchment etc), attach if useful, together with the notes relevant to the property.
These may be photocopies or produced by a computer programme.

Airphoto

Attach if available. Note date of photograph =
"*Aerial photography courtesy of Department of Land Administration Western Australia - P232. Contact 9273 7555, Email sales@dola.wa.gov.au or visit www.landonline.com.au*"

2 *Land for Wildlife* site description

Map - indicate exact site/s on map/s airphoto/s used. Also indicate site of photo points.

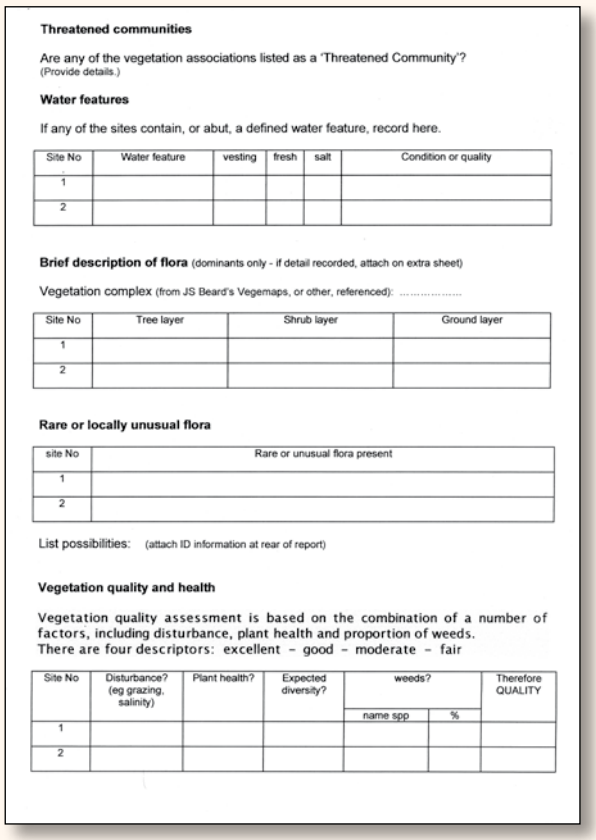
(Photographs of salient points could be added at any appropriate point in the description.)

***LFW* sites** - number of sites: .....

LFW sites are those areas of the property where nature conservation is a primary management aim.

Site No	Site name	Area (ha)	Geology / Landform / Soil	Vegetation association (Vegetation Community)
1				
2				

(At least one 'official' monitoring photo should be taken at one site and included on the monitoring page.)



Threatened communities

Are any of the vegetation associations listed as a 'Threatened Community'?
(Provide details.)

Water features

If any of the sites contain, or abut, a defined water feature, record here.

Site No	Water feature	vesting	fresh	salt	Condition or quality
1					
2					

Brief description of flora (dominants only - if detail recorded, attach on extra sheet)

Vegetation complex (from JS Beard's Vegemaps, or other, referenced): .....

Site No	Tree layer	Shrub layer	Ground layer
1			
2			

Rare or locally unusual flora

site No	Rare or unusual flora present
1	
2	

List possibilities: (attach ID information at rear of report)

Vegetation quality and health

Vegetation quality assessment is based on the combination of a number of factors, including disturbance, plant health and proportion of weeds.
There are four descriptors: excellent - good - moderate - fair

Site No	Disturbance? (eg grazing, salinity)	Plant health?	Expected diversity?	weeds?		Therefore QUALITY
				name spp	%	
1						
2						

Regeneration

Many Western Australian ecosystems regenerate naturally only after a 'trigger' such as a fire or a flood. Without such a trigger, mature ecosystems may show little signs of regeneration. Nevertheless, a healthy ecosystem retains the ability to regenerate if an opportunity occurs.

Site No	Regenerating naturally?	Ways to improve regeneration
1		
2		

Edge effects

The edge of an isolated remnant suffers greater stress from outside influences than does the centre. Thus, the greater the 'edge-to-area-ratio' of a remnant, the more management may need to be undertaken.
Many threats to isolated remnants – such as weed seeds, herbicide drift, or wind-blown debris – enter from outside and the remnant can be buffered from their influence.

Site No.	Edge to area ratio - specifically, what % of the site is greater than 100m from an edge?	Action required?
1		
2		

Current management

Site No	fencing?	grazing?	timber cutting?	other? (feral control etc)
1				
2				

Priority management actions required for maintenance of the site/s:
(List here)

3 Vegetation notes

(Elaborate on the items recorded in the tables in section 2.)

Notes on the vegetation quality assessment:

- disturbance:
- plant health:
- expected diversity:

Notes on weed management

- Priority weeds:
- management actions:

Notes on other management actions - including commercial use of the sites

(May wish to mention sustainability here, if timber cutting, flower or seed picking or firewood collection is being practiced or contemplated.)

Are there any sites where rare flora translocations could be considered?

(Give details of what and where.)

Notes on methods of encouraging regeneration for each vegetation type.

(Note vegetation structure to be aiming at, list key species that might be missing and whether they could remain as part of the soil seed bank, discuss trigger needed to stimulate germination, discuss whether site preparation, direct seeding or seedling planting would be appropriate, etc. In all comments, take into account existing and potential threats to sustainability.

This could be attached as a separate sheet, if preferred.)

Notes on revegetation

(This could be attached as a separate sheet, if preferred.)

4 Fauna notes

(If lists available, eg birds, note and attach at rear)

Fauna	Fauna observed on visit or noted by landholder (inc ferals)
mammals	
birds	
reptiles	
amphib-ians	
other	

Rare fauna

Note any rare or threatened fauna present or possible:
Please inform *LFW*/CALM Wildlife Branch if any of these species are noted.

Fauna enhancement

Specific notes of methods (not covered above) to improve fauna habitat.

- feral predator control
- rabbit or other feral herbivore control
- feral bee control
- habitat creation
  - Notes on creation and enhancement of mammal habitat
  - Notes on creation and enhancement of bird habitat
  - Notes on creation and enhancement of reptile habitat

Fauna not currently present, which could be encouraged

(List fauna which could be encouraged to return, and note whether translocations might be possible.)

Specific notes related to a water feature

Notes on creation and enhancement of aquatic habitat

(discuss the requirements of waterbirds, eg.)

5 Connectivity

Fauna need to be able to move between remnants in order to utilise resources, eg flowers in season, and to find new territories. For many smaller fauna, such as birds, open paddocks are a barrier that they will not cross. To reach all remnants, they need to be connected by 'bush corridors'.

Relationship of *LFW* sites to conservation reserves and other significant remnant vegetation

(On map and/or airphoto, indicate location of reserves, remnants and natural/revegetated corridors. Usual radius for consideration, 1-2 km. Maximum radius for consideration, 5 km. Use the longer distances if a significant remnant, say a large Nature Reserve, is involved.)

Recommendations for bush corridor connections

Bush corr.	Suggest sites on property and, if relevant, on adjacent properties or roadsides. Indicate on map
a	
b	

Details of bush corridor construction

(eg width, structure, recommended species list. Include multiple use functions of the corridor if appropriate, eg shelter, water use, oil mallees etc.
If preferred, this could be on an attached sheet.)

Could any of these recommendations become the basis for a project by the relevant Catchment Group?

(List, provide map and contact name of facilitator who could progress the project. As a matter of course, always inform the facilitator concerned of these suggestions.)

6 Fire

Since before humans arrived in Australia, fire has been a significant factor the ecology of the continent. The frequency, intensity and season of fires have a profound effect upon the plant community that regenerates after the fire. A modern complicating factor is the presence of weed species.

Site No	Fire history	Role of fire in the vegetation community
1		
2		

Fire management points discussed:

(Including fire and regeneration)

Nothing said here can override a landholder's responsibility under the Fire and Emergency Services Act. Contact your area Bushfire Captain for advice.

Is the site adjacent to CALM-managed land? If so, does the landholder want to discuss coordinated fire management operations?

(give CALM contact - name and phone number)

7 Role of sites in Landcare and Natural Resource Management

All natural perennial vegetation will have value in the overall management of the property and the catchment. Some sites, however, will have greater significance in this regard.

Site No	Value of site to landcare (eg hydrology, erosion control, shelter etc)
1	
2	

Any general landcare points? This section could be quite detailed if discussion during the visit has raised points

8 Overall summary

Is any part of the property subject to a Conservation Covenant?	(if so, which scheme?)
Is the landholder interested in covenanting, now, or at some future date?	
Is the landholder involved in other Landcare, Greening or NRM programmes?	(give details)
Have any grants been received to assist with this?	(If so, give name of programme)
Is the landholder prepared to allow an organised Field Day to include this property?	
Has the landholder any concerns about the '*LFW* site' being recorded on a GIS mapping system for the Natural Resource Management planning?	(yes/no - if no give details why)
Is the landholder interested in being on a *LFW* nature-based tourism contact list?	
Are any facilities for tourists/visitors provided?	(give brief description, eg cottages, guided bushwalks etc)
Any other relevant observations?	

Signed: .....

Position: .....

Date: .....

***LFW* ASSESSMENT SUMMARY**

Name of assessor: .....

Date on request for admission to *LFW* received: ...../...../.....

Date on which property visited: ...../...../.....

Is *LFW* Registration of property recommended? .....

Full registration ..... Interim registration .....

Registration number .....

Specific comments given to landholder in respect to the above recommendation:

.....

.....

.....

Date of issue of sign ...../...../..... **Sign number** ....

ADDENDA

List information attached to this form.

Below: A phascogale on the verandah, Balingup
Photo – J. de Garis

Appendix 3: List of publications

'How to ...' booklets

How to Create a Local Herbarium. Sue Patrick, 1997. CALM, Perth.
How to Manage Your Granite Outcrops. Penny Hussey, 1998. CALM, Perth.
How to Manage your Wandoo Woodlands. Penny Hussey, 1999. CALM, Perth.
How to Conduct a Community Fauna Survey. Angela Sanders, 2002. CALM, Perth.

Wildlife Notes

WN 1: *Creekline Revegetation for Wildlife*. Penny Hussey, 1997. CALM, Perth.
WN 2: *Stream Corridors for Bird Movement*. John Blyth, 1997. CALM, Perth.
WN 3: *Nest boxes for Wildlife*. Penny Hussey, 1997. CALM, Perth.
WN 4: *Seed Collection from Native Plants*. Keith Bradby and Vicky Morris, 1997. CALM, Perth.
WN 5: *Encouraging Quendas*. Emma Bramwell, 1998. CALM, Perth.
WN 6: *Encouraging Possums*. Emma Bramwell, 1999. CALM, Perth.
WN 7: *Management Guidelines for Remnant Vegetation being Harvested for Cutflowers*. Liesl Rohl and Russell Smith, 1999. CALM, Perth.
WN 8: *Living with Echidnas*. Robert Huston, 2001. CALM, Perth.
WN 9: *Photographic Monitoring of Vegetation*. Penny Hussey, 2001. CALM, Perth.
WN 10: *Sand Pads – Using Tracks to Monitor Fauna*. Peter Mawson and Peter Orell, 2001. CALM, Perth.
WN 11: *Requirements for Native Mammals*. Penny Hussey and Peter Mawson, 2004. CALM, Perth
WN 12: *Biodiversity and Farm Forestry*. Sylvia Leighton, 2005. CALM, Perth.
WN 13: *Old Trees and Wildlife*. Penny Hussey, 2005. CALM, Perth.
WN 14: *Dead Wood and Wildlife*. Penny Hussey, 2005. CALM, Perth.
WN 15: *Tree Hollows and Wildlife*. Penny Hussey, 2005. CALM, Perth.
WN 16: *Paddock Trees and Wildlife*. Penny Hussey, 2005. CALM, Perth.
WN 17: *The Use of Fire in Small Remnants*. Penny Hussey and Avril Baxter, 2006. CALM, Perth.

Western Wildlife, quarterly, 1997–2006, one volume per year, four issues per volume, i.e. 40 issues.

Brochures

'*Land for Wildlife*'. 1997. Introductory brochure and registration form.
'*Living with Quendas*' 1998. (new edition, 2005)
'*Living with Possums*' 1998. (new edition, 2005)

List of books, conference or journal papers produced by *LFW* staff

Hussey, P. and Bramwell, E. 1997. *Land for Wildlife*. IN: State Landcare Conference 1997, Soil and Land Conservation Council, Perth.

Hussey, B.M.J., Keighery, G.J., Cousens, R.D., Dodd, J. & Lloyd, S.G. 1997. *Western Weeds: a Guide to the Weeds of Western Australia*. Plant Protection Society of WA. Perth.

Hussey, B.M.J. & Dennings, S. 1998. *Nature Conservation, the Community, and Feral Predator Control.* IN: Proceedings, 11th Vertebrate Pest Conference, Bunbury.

Hussey, B.M.J. and Leighton, S. 1999. *Revegetation - with Native Fauna in Mind.* IN: Proceedings, '*Where Community Counts*' State Landcare Conference 1999. AgWest, Perth.

Brooker, M. and Hussey, P. 2001. *Plants of Gooseberry Hill*. West. Aust. Nat. 23: 110-166

Hussey B. M. J. 2001. *Ferals at Walga Rock*. West. Aust. Nat. 24: 115-117

Baxter, A. and Hussey, P. 2001. *Broomehill Shire and Land for Wildlife: Partners in Nature Conservation*. IN: *Proceedings, 'Partnerships and Diversity*' State Landcare Conference 2001. AgWest, Perth.

Hussey B.M.J. 2002. *Wattle I Plant for Wildlife*. Conservation Science 4: 3, 62-71

Leighton, S. and Salt, D. 2003. *Can the plantation industry benefit biodiversity? Can biodiversity benefit the plantation industry?* IN *Proceedings, State Landcare Conference*, Katanning.

Jasper, R. 2004. *Flood as an agent for renewal: lessons for revegetation*. J. Ecological Management and Restoration 5: 210-211.

Hussey, B.M.J. 2005. *Drummond's Plants in your Bushland*. IN: '*The Drummond Symposium: a review of the work of James Drummond, the first Government Botanist in Western Australia*' Bulletin No. 27. Dept of Environmental Biology, Curtin University of Technology, Perth.

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