

Performance Assessment Name:

***Dryandra Management Plan***

PA Category:

*Conservation Reserve Management Plan PA*

Lead Auditor:

*Tom Hughson*

Twelve month review:

*28/11/2008*

☒ Twelve month review undertaken

☐ Further action required

Comments:

Twelve month review details:

DEC advised the Conservation Commission at the time of 12 month review that limited progress had been made in relation to the key findings of the assessment. For the Dryandra Woodlands Performance Assessment it is acknowledged that the majority of the key findings relate to longer-term commitments from DEC. Given the level of progress indicated in the responses received for the key findings, in particular the indication that important fauna projects will be completed in mid-2009, the Conservation Commission will finalise this performance assessment based upon the DEC responses to the 12 month review. However, the Conservation Commission will write to DEC after the completion of the fauna projects 2009 and request a briefing on the outcomes.

# **Conservation Commission Conservation Reserve Management Plan Performance Assessment**

**Dryandra Woodland  
Management Plan 1995 - 2005**

Performance Assessment Number CRMPPA - 01/07



**Conservation Commission  
of Western Australia**



Conservation Commission  
Conservation Reserve Management Plan Performance Assessment  
Dryandra Woodland Management Plan 1995 - 2005 – Performance Assessment Number  
CRMPPA - 01/07

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Conservation Commission performance assessments are undertaken primarily to fulfil the functions described in S 19(g) of the Conservation and Land Management Act 1984. That is to “assess and audit the performance of the Department and the Forest Products Commission in carrying out and complying with the management plans”. They will also help inform its policy development function and its responsibility to advise the Minister on conservation and management of biodiversity components throughout the State.

This performance assessment was undertaken in accord with the *“Conservation Commission policy and guidelines for the performance assessment of conservation reserve and forest management plans and biodiversity management in WA”*. Further details are available at [www.conservation.wa.gov.au](http://www.conservation.wa.gov.au).

The use of Department of Environment and Conservation (DEC) data for the production of maps in this report is acknowledged.

Approved at Conservation Commission meeting – 12 November 2007

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## EXECUTIVE SUMMARY

This Conservation Commission performance assessment is primarily a review of the implementation of the Dryandra Woodland Management Plan 1995 - 2005<sup>1</sup>. It presents information gathered in 2003 and 2006.

Dryandra Woodland (28,066 ha) is located in the central western Wheatbelt near the regional centre of Narrogin and approximately 160 km south-east of Perth. The Wheatbelt area has long been recognised as an area of extremely diverse flora and fauna, which is largely attributable to its transitional location between the arid zone and the more mesic environment to the west and south-west.

Overall the assessment found that management of Dryandra Woodland has been effective in providing for both conservation and recreation outcomes within a relatively constrained budget. Most of the strategies in the plan are being applied effectively and as required on an ongoing basis. In particular, Parks and Visitor Services initiatives at Dryandra have been good, with a number of positive measures implemented.

The assessment has identified key findings that have resulted in management responses from the Department of Environment and Conservation (DEC) and the Conservation Commission.

In relation to changes to **context** there were two key findings.

### Key finding 1 -

Little progress has been made in relation to the high priority strategy of implementing the conversion of the Dryandra Woodland to national park (see context section for full finding).

### DEC response

The change in tenure of Dryandra Woodland from State forest to national park has remained a high priority for the Department of Environment and Conservation (DEC), with several attempts having been made to convert most of the Dryandra Woodland to national park. The Department of Industry and Resources (DoIR) has continued to oppose the conversion because of the underlying mineralogy of the area and because the State Government's 2001 *Environment* policy included a prohibition on exploration and mining, and petroleum extraction, in national parks and nature reserves (see context section for full details).

### Conservation Commission response

The Conservation Commission acknowledges the response and notes that the conversion of the Dryandra Woodland to national park status remains a high priority for DEC. In support of the efforts outlined by DEC above, the Conservation Commission will relate the views expressed in this finding directly to the Department of Industry and Resources and will seek a response from DoIR in relation to this finding (see context section for full details).

### Key finding 2 -

It is considered by the Conservation Commission that an opportunity has been presented with the cessation of the local plantation-based timber industry (tool handle production) to undertake activities which may promote a large-scale return to the original species distributions and improve the levels of representation of vegetation communities which are now poorly represented (see context section for full finding).

### DEC response

Caution should be applied to the assumption underlying Key Finding 2. The closure of the tool handle factory does not necessarily provide an enhanced opportunity for the

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<sup>1</sup> The management plan can be accessed at [www.naturebase.net/pdf/nature/management/dryandra.pdf](http://www.naturebase.net/pdf/nature/management/dryandra.pdf)

large-scale rapid conversion of mallet plantation to natural vegetation communities, as three other timber contracts are still operating in the plantation area. Also, to undertake large-scale rapid conversion would require significant resources, which DEC does not have, and without a suitable market, would result in wastage of a potentially valuable resource. DEC considers that the current focus on small-scale mallet conversion and/or regeneration, with full utilisation of the available resource, is the most efficient and effective strategy (see context section for full response).

#### **Conservation Commission response**

The issue of concern to the Conservation Commission is the current rate of conversion from plantation to native vegetation which is not consistent with the '100 year vision' for the mallet plantations as detailed in the management plan. There is currently no active and adequate mechanism in place to achieve the '100 year vision' which incorporates the conversion of 6100 hectares of brown mallet plantation to native vegetation.

The Conservation Commission maintains the view stated in Key Finding 2 that the potential nature conservation value of returning the plantation areas over time to the original vegetation communities are likely to outweigh the greatly diminished benefits of maintaining the plantations and/or re-establishing mallet plantations after harvesting. This view is consistent with the '100 year vision' of the current management plan which needs to be revised in line with the changes in the local timber harvesting industry (see context section for full response).

In relation to the adequacy of **planning** there was one key finding.

#### **Key finding 3 -**

The document -Draft Regional Management Plan (Wheatbelt Region)- was referred to by district staff as a guiding management document for a number of important management activities, but it does not appear to have any formal status (see planning section for full finding).

#### **DEC response**

The overarching principles for management contained in the Draft Wheatbelt Management Plan are being applied in the management of Dryandra Woodland. The key application of the principles is in relation to fire management, however the preparation of specific fire management plans for Dryandra is not dependent on the draft Wheatbelt Management Plan being finalised. The draft Wheatbelt Management Plan was discussed at Corporate Executive in April 2005 with the result that additional work was required. The Wheatbelt Regional Leader Parks and Visitor Services position is responsible for preparing the draft and final Wheatbelt Management Plan, however this position has been vacant since April 2006 and officers of the Planning Unit are fully committed to preparing other priority plans (see planning section for full response).

#### **Conservation Commission response**

The Conservation Commission is concerned with the process for the finalisation of the Wheatbelt Management Plan, and the use of strategic documents which have no formal status. It is unclear from the DEC response whether the draft Wheatbelt Management Plan will be finalised or not. The strong preference of the Conservation Commission is the provision and use by the DEC districts of conservation reserve planning documents which have been endorsed by the Conservation Commission. This matter will be pursued with DEC to better determine the role of these draft and proposed strategic planning documents (see planning section for full response).

In relation to the **inputs** of implementation of the plan there was one key finding.

**Key finding 4 -**

There is an apparent lack of resources (staff) available to implement the strategies identified in the management plan (see inputs section for full finding).

**DEC response**

Although obtaining the necessary resources to implement a management plan is an important consideration, it should be noted that the majority of the actions in the Dryandra Woodland Management Plan have been completed. It is the degree or level of implementation that is at issue. The resources required to implement a management plan are determined through the annual Departmental budgeting process, and are considered in the context of total available resources and other competing demands. The attraction and retention of experienced operational nature conservation staff is an acknowledged issue relevant to the Wheatbelt and other DEC Regions, and has delayed the implementation of some actions. DEC is investigating strategies to address this issue in an effort to attract and retain experienced staff, capable of delivering nature conservation and other outcomes, particularly in regional areas.

**Conservation Commission response**

The Conservation Commission acknowledges the DEC response and notes that difficulties with the attraction and retention of staff is an increasingly prevalent issue. In future conservation reserve performance assessments, as this issue is likely to be ongoing, the Conservation Commission will seek a more detailed response to the issue of constrained resources. As there may be more strategies in an individual reserve management plan than can be realistically fully implemented, the Conservation Commission will seek to determine from the process which is outlined in the DEC response above, how the competing demands and priorities are managed. For example, has there been a risk management style approach to the implementation of competing strategies, when there are known resource implementation limitations.

In relation to the **outputs** of implementation of the plan there was one key finding.

**Key finding 5 -**

Vegetation mapping is not available at a scale to support local management decisions. There has been limited related research into fire effects on vegetation attributes (see outputs section for full finding).

**DEC response**

DEC acknowledges that broadscale vegetation structural/species composition mapping is still to be completed for the Dryandra Woodland. This mapping will require significant resources as would research on poison thicket health and restoration strategies and fire effects on vegetation attributes. DEC will consider these issues when setting budget priorities in 2008/09.

**Conservation Commission response**

The Conservation Commission acknowledges the response from DEC and notes the budget consideration information. At the twelve month review of this performance assessment an update of the implementation of this strategy will be included.

In relation to the **outcomes** of implementation of the plan there was one key finding.

**Key Finding 6 -**

While there are a number of fauna conservation studies and projects underway in the Dryandra Woodland, the meaningful reporting of outcomes in the form of quantitative information is limited (see outcomes section for full finding).

***DEC response***

Fauna monitoring in Dryandra is undertaken according to the guidelines of the Western Shield Fauna Recovery program, which is designed to provide a consistent approach across the south-west. Fauna monitoring results and trends over time for all monitoring sites, including the Dryandra Woodland, could be generated from the FaunaFile database. DEC acknowledges that the current proposed reporting arrangements are not being met. A Western Shield coordinator has recently been appointed and improvements to the FaunaFile database are being made. This development of more effective information storage and transfer system will enable annual Western Shield reporting to be prepared, including specific reporting on the Dryandra Woodland fauna conservation objectives (see outcomes section for full response).

***Conservation Commission response***

The Conservation Commission through this performance assessment is seeking to determine evidence of outcome reporting information under the Dryandra Woodland management plan and evidence indicating how this outcome information has been fed back through the management system for action by DEC management. Implementing changes as new information is available is considered as vital for the demonstration of continuous improvement in management. The Conservation Commission acknowledges the DEC response and accepts that the proposed changes will improve the current outcome reporting arrangements (see outcomes section for full response).



## INTRODUCTION

This Conservation Reserve Management Plan Performance Assessment (CRMPPA) is primarily a review of the implementation of the Dryandra Woodland Management Plan 1995 - 2005. The Dryandra Woodland, incorporating State Forests 51 (Lol Gray), 52 (Highbury) and 53 (Montague) are located about 160 km south-east of Perth in DEC's Wheatbelt Region close to the regional centre of Narrogin (Figure 1). This management plan was identified as a priority for performance assessment by Department of Environment and Conservation (DEC) and the Conservation Commission as it has reached its nominal term end; and because of the very high biodiversity values within the Dryandra Woodland.

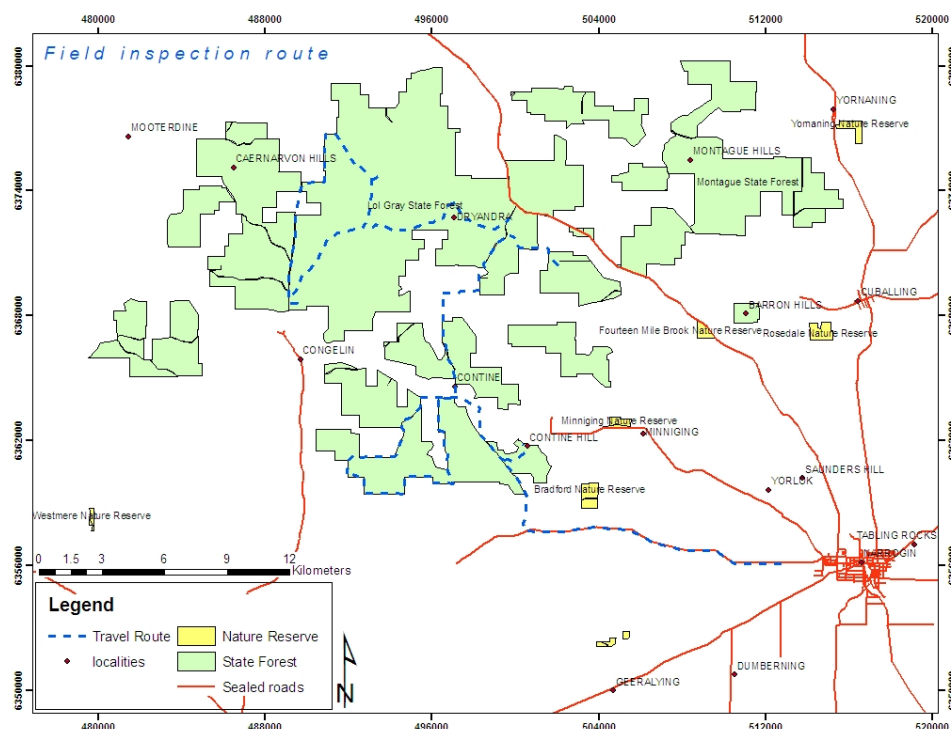
A site visit was undertaken in December 2006 in accord with the Conservation Commission policy and guidelines for performance assessments. The report also draws on. This report includes information from both of these assessments to show progress in a number of areas and to provide a benchmark.

The 2003 assessment focussed on the assessment of outputs against clearly identified strategies or actions in the management plan and included the verification of a "self assessment" of progress completed by the District. The assessment done in 2006 reviewed context, the effectiveness of the management plan, inputs to implementation and outputs. Broad judgement of outcomes against plan objectives is reported where possible. The 2006 assessment focused on key operational issues, i.e. fire and dieback protection and recreation access, and other issues identified during context review including changes to feral animal impacts, salinity impacts and visitor use levels.

The assessment processes incorporated checks of office records, interviews with staff responsible for the implementation of strategies and actions, and site inspections within the reserve. The assessment process is summarised in Appendix 1, work undertaken during 2003 is summarised in Appendix 2.

The travel route taken during inspections is shown below in Figure 1.

**Figure 1. Dryandra Woodland and inspection route**



## DESCRIPTION OF THE DRYANDRA WOODLAND

The Dryandra Woodland (Lol Gray, Highbury and Montague State forests) lies about 160 km southeast of Perth in the Wheatbelt Region of the Department of Environment and Conservation (see Map 1). It comprises 17 discrete blocks scattered over a north-south distance of approximately 50 km and separated by areas of agricultural land. The total area is 28 066 ha, with blocks ranging in size from 87 ha to 12 283 ha. Brown mallet (*Eucalyptus astringens*) plantations are established over approximately 30% of this area.

## VALUES OF DRYANDRA WOODLAND

Western Australia's Wheatbelt supports an extremely diverse flora and fauna. This is largely attributable to its transitional location between the arid zone and the more mesic environment to the west and south-west. The diversity and distribution of species has been greatly reduced, however, due to extensive clearing for agriculture, and the introduction of exotic animals, plants and diseases. The remnant blocks within the Dryandra Woodland are amongst the largest and most diverse of the central western Wheatbelt, and are thus of major conservation significance (Figure 2).

**Figure 2. The numbat (*Myrmecobius fasciatus*) currently listed in Western Australia as threatened (vulnerable) – as sighted during the field inspection at Dryandra**



At the time of the publication of the Dryandra Woodland Management Plan 1995 – 2005, twelve distinct vegetation associations, comprising over 800 native plant species, were identified within the Dryandra Woodland. This included 20 priority species and two species declared as rare.<sup>2</sup> The plan also states that the Dryandra Woodland supports seven threatened species of fauna, and a further three in need of special protection<sup>3</sup>. The Dryandra Woodland provides a range of recreation sites and a variety of experiences for tourists and visitors. It is extensively used by university, school and naturalist groups as a venue for ecological field studies, the attractions being the biological diversity of the woodland, the Irabina Study Centre and the area's close proximity to Perth. The cottages within the original forestry settlement, which are managed under lease by the Lion's Districts Dryandra Forest Village INC., also provide low cost, basic accommodation for overnight visitors. Use of the

<sup>2</sup> 'Rare flora' in the management plan refers to taxa declared under Section 23F(1) of the Wildlife Conservation Act (1950) as rare, likely to become extinct or in need of special protection. 'Priority species' are taxa that are under consideration for declaration under the Act.

<sup>3</sup> 'Threatened' fauna taxa referred to in the management plan are those that are declared under Section 14(2)(ba) of the Wildlife Conservation Act (1950) as being likely to become extinct or rare - 'specially protected' taxa includes fauna that is otherwise in need of special protection.

accommodation tends to be seasonal, with the Settlement heavily booked on weekends from May to November.

The mallet plantations within the Dryandra Woodland have been a valuable timber resource for the local community. In the first part of this century the bark of brown mallet (a source of tannins) was a major export commodity and a resource for local leather tanneries. Naturally occurring mallet was heavily exploited during this period, leading to the establishment of brown mallet plantations in Dryandra between 1925 and 1962. These plantations now extend over 8316 ha of Dryandra, of which; 3,430 ha is of good quality; 2,812 ha are more open mallet stands; and 2,074 ha are failed stands and carry mixed vegetation including areas of wandoo, powderbark wandoo, rock sheoak and communities associated with rocky outcrops.

At the commencement of the management plan timber harvested from Dryandra Woodland supported a number of local enterprises. These included a tool handle manufacturer who produced approximately 100 000 handles each year, a small industry for the treatment and supply of fencing materials, one licensed operator who cut firewood and fencing material, and two licensed operators who cut firewood only. It was envisaged that the ongoing requirements of the industry presented a unique opportunity to aid in the development of economically and environmentally sustainable land management practices on agricultural land in the Wheatbelt. The management plan foreshadowed the future development of this industry by continuing to allow commercial operations in Dryandra over the next 100 years (during which time CALM (now DEC) will promote plantation development on private property), and maintaining a 200 ha plantation to research and demonstrate plantation management.

Although little is known of the past use of the area by Aboriginal people, evidence of their occupation and links to the area survive in the form of archaeological sites and a growing interest of local Noongars in re-establishing cultural ties to the land. The Department of Indigenous Affairs has recorded five sites within the Woodland, including an ochre quarry, stone arrangements, artefact scatters and a scarred tree. Dryandra has not been comprehensively surveyed for Aboriginal sites, and it is likely that other sites exist.

## DETAILED PERFORMANCE ASSESSMENT FINDINGS

The assessment results are presented under the Performance Assessment Framework headings of Context, Planning, Inputs, Management Systems, Outputs and Outcomes. The assessment observations are documented as either a 'Finding' or a 'Key Finding'. Where a 'Key Finding' has been identified it will be accompanied by a management response that is developed following provision of the draft to DEC and consideration of the response by the Conservation Commission.

### CONTEXT

#### Objectives of the performance assessment

*To determine if there have been any significant changes in management context since the development of the management plan.*

#### Findings

The DEC publication *A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002*<sup>4</sup> confirms the importance of Dryandra within the Avon Wheatbelt 2

<sup>4</sup> A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002, Ed. J.E. May and N.L. McKenzie, Department of Conservation and Land Management, 2003. page 300

biogeographical subregion noting that; “- *it supports extant populations of several critical weight range marsupials (numbat, woylie, tamar, red-tailed phascogale and brushtail possum) that had disappeared from most of the Australian or West Australian mainland, and that it has vascular flora of at least 850 species which is more than Mt Lesueur (a well recognised area of high species richness)*”.

It also remains an important recreation and nature appreciation area within the State and region given its proximity to both Perth and major regional centres such as Narrogin.

Since the development of the management plan the principal changes to the management context have been:-

- lack of progress with the conversion of the Dryandra Woodland to national park tenure status (see Appendix 3a & 3b for maps of the proposed tenure changes from the management plan).
- mallet timber market decline.
- visitor numbers increase.

A response in relation to the perceived impact of these changes in context was discussed during the assessment with a follow-up detailed response provided by the DEC Great Southern District management staff.

#### **Tenure conversion**

##### **Key Finding 1**

Little progress has been achieved in relation to the high priority strategy of implementing the conversion of the Dryandra Woodland to national park. At the district level the staff indicated that the area is being managed within the framework of the Management Plan so tenure change is not a high priority issue for day to day management at Dryandra. However, there is a strong desire at the local district level for the creation of a national park as there are no existing national parks in the Wheatbelt region and the Dryandra Woodland clearly warrants this status. The issue of conversion to national park has been raised at the interdepartmental level with the Department of Industry and Resources (DoIR) however there is some resistance from DoIR because of mineralogy, and the State government policy to “prohibit mineral and petroleum exploration and mining in national parks and nature reserves”. It is considered by the Conservation Commission that these issues need to be resolved as a priority.

##### **DEC response**

The change in tenure of Dryandra Woodland from State forest to national park has remained a high priority for the Department of Environment and Conservation (DEC), with several attempts having been made to convert most of the Dryandra Woodland to national park. The Department of Industry and Resources (DoIR) has continued to oppose the conversion because of the underlying mineralogy of the area and because the State Government’s 2001 *Environment* policy included a prohibition on exploration and mining, and petroleum extraction, in national parks and nature reserves.

Legally, under the *Mining Act 1978*, exploration is permissible subject to the concurrence of the Minister for the Environment and with the necessary approvals. Similarly, mining can also proceed in national parks, class A conservation parks and class A nature reserves subject to approval by Parliament.

Over a number of years, DoIR has not supported the creation of national parks, and further, it has either not supported the creation of other conservation reserve categories,

or has agreed to the creation of such reserves subject to the reserves being created with depth limits of 30 metres below the natural surface of the lands.

The Government has not agreed to the routine application of a 30-metre depth limit for conservation reserves. During Cabinet's consideration of the boundaries for the new national parks and other conservation reserves in the south-west forest areas that were established via three Reserves Acts during 2004, Cabinet only supported depth limits for reserves that were underlain by a known mineral resource of economic value to the State.

Advice received from DoIR in relation to the area of the proposed Dryandra Woodland National Park, indicates that there is potential for gold throughout the area, but because of the predominant laterite structure in the area, DoIR has not been able to resolve the prospectivity of the Dryandra State forest further. On that basis, DoIR is unwilling to support any tenure changes to high-level conservation reserve status. DEC will continue its work to effect the creation of a national park, however the department cannot provide a timeframe within which it will be achieved.

Irrespective of progress towards tenure change, the recommendations made in the management plan have been applied in the management of the Dryandra Woodland. For example, non-mallet areas of the main Dryandra Forest Block are managed as if they were a national park and non-mallet areas of satellite blocks are managed as nature reserves. Also mallet areas are managed on a similar basis to State forest, with a high level of conservation activities undertaken.

### **Conservation Commission response**

The Conservation Commission acknowledges the response and notes that the conversion of the Dryandra Woodland to national park status remains a high priority for DEC. In support of the efforts outlined by DEC above, the Conservation Commission will relate the views expressed in this finding directly to the Department of Industry and Resources and will seek a response from DoIR in relation to this finding.

### **Timber market decline**

At the time of this assessment, DEC district staff indicated that tool handle production from the mallet plantations at Dryandra had ceased and provided the following detailed update of the status of the local market and its implications for management:-

*"Tool handle production from the mallet plantations has ceased. This along with decline of mallet as a fencing product has restricted mallet timber to predominately the local firewood market. The current firewood industry is such that mallet is not considered, by FPC (the Forest Products Commission) to be a product that is likely to compete with the jarrah firewood market. Future increases in demand or the use of mallet as a firewood product will be driven by issues such global warming and the future use of wood as a heating resource. With current trends production of mallet is likely to decline to a small volume firewood market based around Narrogin and surrounding towns. There is potential for a "niche" industry based on commercial flooring that should be investigated for feasibility and product development. If successful, this may have a flow on effect towards meeting the 100 year vision that some lands in the Dryandra area will be revegetated with woody perennials, including brown mallet and sandalwood. DEC will continue with the development of the "Hunter's Mallet on farmland trial" and the development of mallet regeneration or conversion to natural stands, following logging, albeit at a reduced scale.*

*Sandalwood on farmland is likely in the foreseeable future in the Dryandra area. Several properties have been purchased within 50kms of Dryandra recently for private sandalwood plantations. The availability of farmland for purchase near Dryandra may limit this option. Sandalwood on farms should be actively promoted generally across the western wheatbelt,*

*including the Dryandra area as a species to include in general revegetation or a commercial venture.”*

A number of management strategies from the plan are relevant to this issue and have not been adequately progressed. These include the following strategies listed in relation to a management plan for the areas of mallet plantation:-

- *state the criteria for selecting which mallet plantations will be either returned to communities of original species or remain plantation for a further rotation;*
- *outline revegetation prescriptions for plantation areas which are to be returned to communities of original species;*
- *monitor the use of plantation corridors by native fauna. Monitor the impact on fauna populations of returning selected plantations to pre-existing vegetation;*

Information resulting from the implementation of these strategies would help to inform the future direction for these areas of mallet plantation given the recent cessation of the tool handle industry and declines in other markets. As discussed with field staff in the course of the field assessment, natural stands of brown mallots usually occur as a single dominant species on breakaways and the species is sensitive to fire. They have a strong allelopathic<sup>5</sup> characteristic and exclude most other plant species, including native grasses. The nature conservation value of brown mallet plantations needs to be scrutinised in terms of the recognised high conservation value of the naturally vegetated areas in the Dryandra woodland. Consideration should also be given to the value of this land for biodiversity purposes in the broader context of the Wheatbelt region, given the extensive clearing of the Wheatbelt vegetation communities and the resulting very fragmented but important areas of remnant vegetation.

The potential for utilisation of the mallet plantations by industry will be restricted by the fact that the management plan tenure ended in 2005, and there is a legal requirement for the provision of sustained yields in the management plan. With the cessation of the tool handle industry, the Forest Products Commission (FPC) has relegated this issue to a low priority. However, the proposed new management plan should address the FPC contracts issue to allow for the option of commercial harvesting of plantation mallet.

### **Key Finding 2**

It is considered by the Conservation Commission that an opportunity has been presented with the cessation of the local plantation-based timber industry (tool handle production) to undertake activities which may promote a large-scale return to natural vegetation communities and also improve the levels of representation of these vegetation communities which are now poorly represented. The potential nature conservation value of returning the plantation areas over time to the original vegetation communities are likely to outweigh the greatly diminished benefits of maintaining the plantations and/or re-establishing mallet plantations after harvesting. Disturbance activities in the brown mallet plantations such as harvesting for firewood, non-commercial thinning or clearing and prescribed burning could potentially be implemented over time to promote the regeneration of species other than brown mallet on certain sites and therefore allow a return to the natural diversity in the vegetation matrix. Progress in such an initiative would require improvements in the mapping of the local vegetation communities and the implementation of research such as experimental mosaic burns to improve the level of knowledge and local operational expertise. Both of these issues (prescribed burning and vegetation mapping) are discussed further in this report under the section headed ‘Inputs’.

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<sup>5</sup> Allelopathy refers to the chemical inhibition of one species by another. The ‘inhibitory’ chemical is released into the environment where it affects the development and growth of neighbouring plants.



**Figure 3. Brown mallet (*Eucalyptus astringens*) plantation with harvesting debris**



### ***DEC response***

Caution should be applied to the assumption underlying Key Finding 2. The closure of the tool handle factory does not necessarily provide an enhanced opportunity for the large-scale rapid conversion of mallet plantation to natural vegetation communities, as three other timber contracts are still operating in the plantation area. Also, to undertake large-scale rapid conversion would require significant resources, which DEC does not have, and without a suitable market, would result in wastage of a potentially valuable resource. DEC considers that the current focus on small-scale mallet conversion and/or regeneration, with full utilisation of the available resource, is the most efficient and effective strategy.

As stated in DEC's update of the market for mallet, which is included in the Commission's report, the Forest Products Commission (FPC) is investigating alternative products for mallet such as small dimension timber rounds and commercial flooring veneers, which may provide an opportunity for an increased rate of conversion. However, DEC will be seeking to ensure that any future production from mallet must provide sufficient resources to convert mallet plantations to pre-mallet vegetation and/or second rotation mallet crops.

DEC will continue to support the development of woody native perennial species such as brown mallet and sandalwood on farms as a future alternative timber resource so that conversion of the mallet plantation has less impact on regional timber supply.

### ***Conservation Commission response***

The Conservation Commission acknowledges the DEC response and supports the intention of DEC in "seeking to ensure that any future production from mallet must provide sufficient resources to convert mallet plantations to pre-mallet vegetation and/or second rotation mallet crops".

The issue of concern to the Conservation Commission is the current rate of conversion from plantation to native vegetation which is not consistent with the '100 year vision' for the mallet plantations as detailed in the management plan. There is currently no active and adequate mechanism in place to achieve the '100 year vision' which incorporates

the conversion of 6100 hectares of brown mallet plantation to native vegetation. This key finding also touches upon other related details which are included as follows:-

Timber Industry: - It is acknowledged that the timber industry is an important means of removing plantation mallet to make way for revegetation with native species; and that the alternative options for harvesting needs to be fully explored. Advice from the Forest Products Commission (FPC) indicates that future marketing of the resource is within the FPC planning objectives. However, the management plan's '100 year vision' outlines the plan to commercially harvest and convert to native vegetation the 1300 hectares of 'Good quality' mallet; and the 4800 hectares of 'Poor quality' mallet (as listed in the management plan). The intention of the vision is the eventual transfer of the mallet resource on to agricultural land. These objectives were clearly set in the context of a functioning local timber industry. If the current annual mallet plantation to native vegetation conversion rate of 1 hectare per year were to be applied to just the area of 'Poor quality' plantation mallet; then the 4800 hectares of brown mallet would take 4800 years to convert. This is perhaps a simplistic view and does not take into account potential future markets; however it reflects the current harvesting status and it needs to be considered in the context of the regional condition of biodiversity and the Dryandra Woodland areas significance for fauna conservation.

Fauna conservation:- While it has been difficult to determine through this assessment the quantitative outcomes of fauna conservation initiatives in the area (see Finding 6); interviews held with the staff responsible for this work indicated that one of the obstacles to success for the release of some of the 'Return to Dryandra' fauna species, was post-release predation by birds of prey. Two important aspects of maintaining vegetation ground-cover for the release of fauna species may need to be considered then:-

- Brown mallet has a strong allelopathic<sup>6</sup> characteristic and excludes most other plant species, including native grasses;
- As discussed during the field inspection, and detailed in the plan itself, there are areas of poison thicket<sup>7</sup> (of unmapped extent) that are possibly declining (senescent) (see Finding 5).

This observation could suggest that the released fauna species would benefit from greater ground-cover than is observable beneath the allelopathic brown mallet plantations and perhaps in other areas of the Dryandra Woodland. To take this to the next logical step; the potential return on investment through the breeding program could potentially be compromised by a lack of vegetation ground-cover for the released species. If this is the case then this information should be fed back through the management system for action by DEC management (see Finding 6). This brings into focus the important strategies from the management plan which have not been implemented which would help to inform the process for:- reviewing and re-drafting the management plan; determining the objectives for the areas of mallet plantation; improving the survival chances of fauna which have been released in to the area. These are listed previously in this report and included here as follows:-

- state the criteria for selecting which mallet plantations will be either returned to communities of original species or remain plantation for a further rotation;
- outline revegetation prescriptions for plantation areas which are to be returned to communities of original species;

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<sup>6</sup> Allelopathy refers to the chemical inhibition of one species by another. The 'inhibitory' chemical is released into the environment where it affects the development and growth of neighbouring plants.

<sup>7</sup> Extract from the management plan pertaining to poison thickets:- *In addition, many of the native fauna species for which Dryandra is noted have specific habitat requirements that may be maintained through the appropriate management of fire. Dense thickets of Rock Sheoak, and poisonous plants such as Gastrolobium microcarpum, provide protection for the Woylie and Tammar, while hollow Wandoo logs are of particular importance to Numbats.*



- monitor the use of plantation corridors by native fauna. Monitor the impact on fauna populations of returning selected plantations to pre-existing vegetation.

100 year vision:-There is currently no active and adequate mechanism in place to achieve the '100 year vision' which incorporates the conversion of 6100 hectares of brown mallet plantation to native vegetation; and the response from DEC indicates that the current rate of conversion of 1 hectare per year is considered as adequate. The Conservation Commission requests that in its consideration of efficiency and effectiveness, that all costs and values are considered by DEC in relation to Key Finding 2. There is a need to address the contextual changes relating to the management plan's '100 year vision' for the plantation areas, and this needs to be considered in conjunction with the increasingly important priority value of nature conservation. The Conservation Commission maintains the view stated in Key Finding 2 that the potential nature conservation value of returning the plantation areas over time to the original vegetation communities are likely to outweigh the greatly diminished benefits of maintaining the plantations and/or re-establishing mallet plantations after harvesting. This view is consistent with the '100 year vision' of the current management plan which needs to be revised in line with the changes in the local timber harvesting industry. This position will be further articulated through the Management Planning Review process for incorporation into the new Dryandra Woodland Management Plan.

#### **Visitor numbers increase**

District staff indicated that the resources and facilities at Dryandra were tested at times by an increase in visitor numbers, and the following detailed response was provided:-

*"Records of visitor numbers are estimated to have doubled from 13 000 in 1995 to 29000 visitors in 2006. Largely resulting from the establishment of the Barna Mia Visitors Centre, the development of Congelin Camp Ground, and the "improvements" to Lion's Village. People are actively looking for other nature opportunities inland from the coast, especially during spring/autumn long weekends. During Easter 2006, an estimated 70 campers stayed at the site Congelin Camp Ground. This is well above the present design limits. Re-development of the Camp Ground gaining funds for the redevelopment Congelin will remain a priority for the District. Managing visitors at peak times to collect camp fees and compliance, through campground hosts or paying DEC staff is being considered. Cooperative marketing of Barna Mia and the Dryandra Village will continue with the Lion's Dryandra Village Board."*

The details of the increase in visitor numbers has been included in the section on Outputs.

## **PLANNING**

### **Objectives of the performance assessment**

*To review the adequacy of the management plan to support the achievement of the objectives for the reserve and to identify any areas where changes are required.*

#### **Planning framework**

The overarching purpose of the CALM Act as stated in its long title is to make "better provision for the use, protection and management of certain public lands and waters and the flora and fauna thereof". Within this overarching purpose section 56 (1)(c)&(d) of the Act describes required objectives for national parks and nature reserves respectively as:

- to fulfil so much of the demand for recreation by members of the public as is consistent with the proper maintenance and restoration of the natural environment, the protection of indigenous flora and fauna and the preservation of any feature of archaeological, historic or scientific interest;

- to maintain and restore the natural environment, and to protect, care for, and promote the study of, indigenous flora and fauna, and to preserve any feature of archaeological, historic or scientific interest.

Section 55 (1a) details the required management objectives for State forest as follows:-

- a management plan for an indigenous State forest or timber reserve shall specify the purpose, or combination of purposes, for which it is reserved being one or more of the following purposes —

- (a) conservation;
- (b) recreation;
- (c) timber production on a sustained yield basis;
- (d) water catchment protection; or
- (e) other purpose being a purpose prescribed by the regulations.

### **Planning detail**

The management plan states the following under the section on management goals:-

*Based on the recognition that nature conservation is the highest priority, the following management goals for Dryandra are identified in the management plan:*

- *Conserve biological, physical, cultural and landscape values.*
- *Facilitate public enjoyment of Dryandra in a manner compatible with the conservation goal.*
- *Manage commercial uses in a manner that minimises the impact on other values.*

### **Other planning guidelines**

Since the finalisation of the Dryandra management plan in 1995, other guiding documents have been produced in relation to management outcomes in the Wheatbelt such as:

- the Draft Regional Management Plan (Wheatbelt Region)<sup>8</sup>;
- the development of conceptual management frameworks such as the CALM 2003 document *Managing Natural Biodiversity in the Western Australian Wheatbelt*;
- the *Biodiversity Audit of Western Australia's Biogeographical subregion* and the related 'Conservation Case Study of Western Australia's Rejuvenated Drainage Subregion' (Avon Wheatbelt 2) in 2003'.
- A 100 year Biodiversity Conservation Strategy for Western Australia (Draft) 2006.

The management plan also identifies issue specific objectives with supporting strategies. These are listed as part of the 2003 assessment provided as Appendix 2.

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<sup>8</sup> Draft Regional Management Plan (Wheatbelt Region) has not been formally released or endorsed by DEC or the Conservation Commission.

## Findings

The management plan has generally appropriately identified management goals, objectives and strategies to cover key issues identified in the plan. Strategies to address these key issues are generally consistent with the purposes and objectives for nature conservation as noted above.

### Planning for prescribed burning

A prescribed burning prescription file for a buffer burn in the vicinity of the Barna Mia facility was assessed. This showed that operational planning components were well implemented. However, in the course of interviews for this performance assessment, the draft Wheatbelt Management Plan was referred to for its strategic guidance in relation to the management of Dryandra, such as in the following instance:-

*“The fire management section of the draft Regional Management Plan (Wheatbelt Region) sets the framework for fire management at Dryandra and is adequate in a broad sense. There is still a need for the further development of specific fire management plans for Dryandra Woodland based on the principles of the Wheatbelt Plan.”*

### **Key Finding 3**

The document -Draft Regional Management Plan (Wheatbelt Region) - was referred to by district staff as a guiding management document for a number of important management activities, but it does not appear to have any formal status.

### **DEC Response**

The overarching principles for management contained in the Draft Wheatbelt Management Plan are being applied in the management of Dryandra Woodland.

The key application of the principles is in relation to fire management, however the preparation of specific fire management plans for Dryandra is not dependent on the draft Wheatbelt Management Plan being finalised.

The draft Wheatbelt Management Plan was discussed at Corporate Executive in April 2005 with the result that additional work was required. The Wheatbelt Regional Leader Parks and Visitor Services position is responsible for preparing the draft and final Wheatbelt Management Plan, however this position has been vacant since April 2006 and officers of the Planning Unit are fully committed to preparing other priority plans.

### **Conservation Commission response**

The Conservation Commission is concerned with the process for the finalisation of the Wheatbelt Management Plan, and the use of strategic documents which have no formal status. It is unclear from the DEC response whether the draft Wheatbelt Management Plan will be finalised or not. It also raises other questions such as whether the fire management principles mentioned will be incorporated into the new Dryandra Woodland Management Plan, and issues of duplication. Further to this point, DEC has stated in briefings to the Conservation Commission that it is their intention to have a Fire Management Plan for every DEC region which would also potentially introduce another strategic planning document for the management of fire in the Dryandra Woodland.

The strong preference of the Conservation Commission is the provision and use by the DEC districts of conservation reserve planning documents which have been endorsed by the Conservation Commission. The cyclical process of plan endorsement; performance assessment; and implementing change is considered as vital for the demonstration of continuous improvement in management. When planning documents which have not

been endorsed are in use, the assessment criteria are uncertain and this in turn can potentially break down the performance assessment phase of the continuous improvement cycle.

This performance assessment finding raises important issues in relation to the way in which planning documentation will be introduced and utilised on Conservation Commission vested lands. This matter will be pursued with DEC to better determine the role of these draft and proposed strategic planning documents. Further details will be incorporated into the 12 month review of this performance assessment.

## **INPUTS**

### **Objectives of the performance assessment**

*To review financial, human and other resources allocated to implement the management plan and to assess the adequacy of these relative to the reserve's context.*

### **Findings**

Staff resources were discussed as a major impediment to achieving the necessary input to achieve the various strategies of the plan. The position of District Nature Conservation officer was vacant at the time of this assessment and had been for some time. This resulted in a number of related strategies not being implemented. District staff indicated that ecosystem health, including disease management/monitoring requires further resources but will depend on whether additional resources can be made available.

New resources for fire management had become available at the time of the assessment in an area which was previously inadequately resourced (also at the time of final drafting of this assessment report, a Fauna Officer commenced duties at the Narrogin office). The district gave the following detailed response in relation to local resourcing issues:-

*"Attraction and retention of staff to inland and remote locations is a serious issue particularly when consistency in delivery, maintaining standards and retaining a high skill base is required. There needs to be consistent Corporate and Government support to develop policies that facilitate the attraction of staff to remote regions.*

### **Key Finding 4**

There is an apparent shortage of resources (staff) available to implement the strategies identified in the management plan. The issue of lack of human resources available in remote areas to implement strategies has been identified by the Conservation Commission in previous performance assessments. The Conservation Commission acknowledges that these resource difficulties are an impediment to the implementation of management plan strategies.

### **DEC response**

Although obtaining the necessary resources to implement a management plan is an important consideration, it should be noted that the majority of the actions in the Dryandra Woodland Management Plan have been completed. It is the degree or level of implementation that is at issue. The resources required to implement a management plan are determined through the annual Departmental budgeting process, and are considered in the context of total available resources and other competing demands.

The attraction and retention of experienced operational nature conservation staff is an acknowledged issue relevant to the Wheatbelt and other DEC Regions, and has delayed the implementation of some actions. DEC is investigating strategies to address this issue in an effort to attract and retain experienced staff, capable of delivering nature conservation and other outcomes, particularly in regional areas.

### **Conservation Commission response**

The Conservation Commission acknowledges the DEC response and notes that difficulties with the attraction and retention of staff is an increasingly prevalent issue. In future conservation reserve performance assessments, as this issue is likely to be ongoing, the Conservation Commission will seek a more detailed response to the issue of constrained resources. As there may be more strategies in an individual reserve management plan than can be realistically fully implemented, the Conservation Commission will seek to determine from the process which is outlined in the DEC response above, how the competing demands and priorities are managed. For example, has there been a risk management style approach to the implementation of competing strategies, when there are known resource implementation limitations.

### **Data inputs**

Comments were made at the time of the interviews for this assessment that locally stored corporate data information may not be up to date. There is a lag time from specimen vouchering at the WA Herbarium to when records appear on DEFL (DEC's Declared Flora Information System) or the Corporate Database. The DEFL database is considered by the District as an adequate system for threatened species listings in a planning sense. The District also maintains its own threatened species list.

Corporate Database inadequacies are being addressed by DEC through recent improvements in the delivery of information to the districts through server based data delivery and the subsequent provision of more recent information. An important input for fauna habitat and fire management relates to the lack of fine scale vegetation mapping, which is discussed further under the section on Outputs, particularly in relation to fire management.

## **MANAGEMENT SYSTEMS**

### **Objectives of the performance assessment**

*To review the management systems that are used to implement the plan, including any subsidiary policies or guidelines that are referred to in the plan, and their appropriateness within the context of the reserve.*

Since the plan was finalised a number of regional level policies have been developed which have relevance to management in the Dryandra Woodland. For the Wheatbelt region in general there has also been the development of conceptual management frameworks such as the CALM 2003 document *Managing Natural Biodiversity in the Western Australian Wheatbelt* and the *Environmental Weed Strategy for Western Australia*.

**Figure 4. Dryandra Woodland boundary with private land and associated fenceline clearing activities.**



There are a number of management systems that are used in the management of the Dryandra Woodland. These include DEC policies on fire management, species recovery plans, dieback management, landscape, weeds, rehabilitation of disturbed areas and basic raw materials policies. Comment is provided on the adequacy of implementation of management systems for dieback and fire under the outputs section below.

## **Findings**

Dryandra Woodland has a high boundary-to-area ratio and district staff use the guidelines of the DEC Good Neighbour Policy to deal with boundary interactions. Local road maintenance contracts were inspected and were noted to include hygiene (dieback/weed) requirements.

A draft operational plan for disease management (*Proposals for the management of Phytophthora root-rot in the Great Southern District*) was under development at the time of the assessment and is now finalised. The operational plan reportedly aims to provide broad hygiene management guidelines within the 500-600 mm rainfall zone, and identifies the management actions required for Dryandra Woodland.



**Figure 5. Area of dieback infection identified with regulatory signage**



## OUTPUTS

### Objectives of the performance assessment

*To review the products and services which were provided against strategies identified in the management plan.*

The assessment undertaken in 2003 (Appendix 2) assessed outputs against clearly identified strategies or actions in the management plan and included an internal review of progress undertaken by the District. The District's internal review was verified to ensure that it provided an accurate reflection of performance. Further details in relation to some of the high priority outputs are included below.

### Findings

#### *Parks and visitor services*

Parks and Visitor Services initiatives at Dryandra have been good, with a number of positive measures implemented such as the development of Darwinia Drive and related interpretive stops. The opening of the Barna Mia Visitors Centre, and the development of Congelin Camp Ground have also enhanced public enjoyment of Dryandra in a manner which is considered compatible with the conservation goals. An edition in the DEC Bush Books series 'Wildflowers of the Dryandra Woodlands' was also developed and published (2005). The site inspection indicated that the network of access roads and track maintenance was adequate with the known dieback infection site having access restricted and appropriate regulatory signage in place.

**Figure 6. New visitor facilities along Darwinia Drive (Stop 5)**



Dryandra traffic counter statistics over the life of the management plan are detailed as follows:-

**Table 1. From DEC VISTAT (Visitor Information and Statistics Program)**

Year	1994/ 95	1995/ 96	1996/ 97	1997/ 98	1998/ 99	1999/ 00	2000/ 01	2001/ 02	2002/ 03	2003/ 04	2004/ 05	2005/ 06	2006/ 07
Visits**	6400	13200	18700	18700 <sup>E</sup>	18700 <sup>E</sup>	19050	15846	13628	13322	14876	18368	26718	27242

<sup>E</sup> THIS FIGURE IS AN ESTIMATE. ALL OTHER FIGURES ARE DETERMINED OR EXTRAPOLATED USING METROCOUNT VEHICLE CLASSIFIERS, TRAFFIC COUNTERS OR PEDESTRIAN COUNTERS.

\*\* TOTAL VISITATION AT DRYANDRA HAS BEEN DETERMINED AS FOLLOWS:

(TOMINGLEY RD + CONTINE HILL + CONGELIN DAM VISITATION) x 100% BETWEEN 1993/94 & 1999/00, AND  
(TOMINGLEY RD X 100% + LOL GRAY X 30% + CONGELIN DAM X 50% + CONTINE HILL EAST X 80%) FOR 2000/01 & 2001/02 AND UP TO 2003/04.  
FOR 2004/05: (TOMINGLEY RD (EAST AND WEST)) X 100% + CONTINE HILL EAST X 80% + KAWANA ROAD NORTH X 70% + CONGELIN DAM X 50%.  
FOR 2005/06 & 2007/07: (TOMINGLEY RD (EAST AND WEST)) X 100% + CONGELIN DAM) x 100% + CONGELIN CAMPGROUND x 100% + GURA ROAD x 60%

There are numerous entry and exit points to the Dryandra Woodland area and as detailed in the footnotes of the table above, a number of methodologies have been employed in the past to estimate the number of visits per year. The estimated number of visits is a composite using the access roads listed in the footnotes. There is an increase in the estimated visits for 2005/06 compared to previous years, however, this also coincides with a change in the methodology for collecting the data which makes it difficult to directly compare the data from 2004/05 to 2005/06 and 2006/07.

Nevertheless, observations by district staff of visitor numbers over peak periods as outlined in the Context section indicate a higher usage and the data that is available does support these observations (within the possible limitations outlined above).

## Nature conservation

### *Wandoo decline*

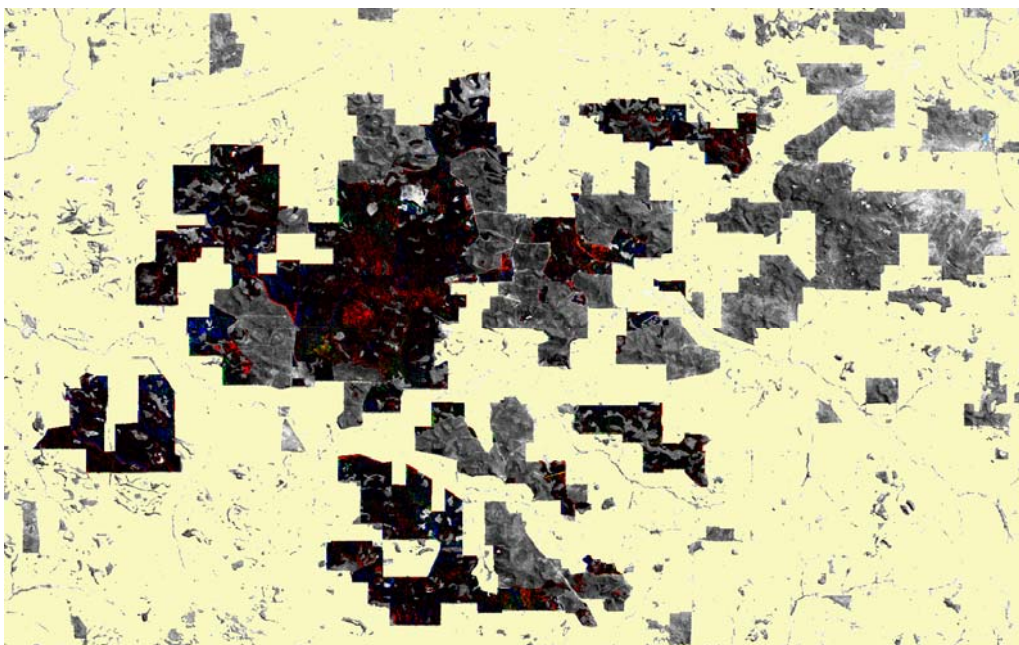
In relation to wandoo decline, the interviewed staff made reference to the formation and ongoing efforts of the Wandoo Recovery Group (WRG) which was formed in 2003 to investigate the causes of wandoo crown decline. To gauge whether the management plan and



associated management efforts have been adequate in relation to the issue of wandoo decline, documentation and mapping products of the WRG have been assessed. An important stated priority of the WRG is the focus on mapping to better understand the extent, frequency and severity of the decline. For the Dryandra Woodland (one of the WRG study locations), satellite imagery (Landsat Trend Analysis) has been used to examine changes in canopy cover between 1988 and 2005. The image below is an example of the type of image produced for this analysis which depicts areas of vegetation decline (red), recovery (blue), stable (black) and cleared land (white). A full report of this analysis has yet to be finalised however, interim results for the Dryandra Woodland analysis showing the relative proportions of declining, recovering and stable wandoo canopies are as follows:-

Decline –	18%
No change –	59%
Recovery –	23%
Loss/gain ratio-	1:1

**Figure 7. Landsat Trend Analysis for mapping wandoo decline at the Dryandra Woodland**



At the time of this assessment, DEC district staff indicated that the vegetation mapping in Dryandra Woodland has not been refined to allow a fine-scale analysis. The project for mapping the vegetation complexes for the CRA<sup>9</sup> did not include the areas within Dryandra Woodland. There is broad mapping available of the mallet plantations (and reportedly wandoo occurrence), however the best available general vegetation mapping is at a very coarse scale (1:250,000). As the satellite analysis utilises the available vegetation mapping to determine the boundaries between for instance mallet and wandoo stands, these limitations should be noted in the analysis of these interim results.

<sup>9</sup> CRA or Comprehensive Regional Assessment included a now completed project of mapping vegetation complexes as part of biodiversity assessment for the south-west forest regions.

## *Fire management*

A high priority strategy from the plan which was not undertaken during the life of the plan relates to the following item under the section on Fire:-

19. Mapping the distribution, structure and vigour of poison thickets. Conduct two experimental burns during the life of this Plan, with the aim of forming large, continuous thickets. Monitor subsequent thicket development and use by fauna. If successful, prepare and implement a program of rehabilitation for degraded poison thickets<sup>10</sup>;

### **Key Finding 5**

It is unclear from the available information what the current status and growth stage of the poison thickets may be. As discussed during the field inspection, and detailed in the plan itself, there are areas of poison thicket (of unmapped extent) that are possibly declining (senescent) and research is required to develop management prescriptions for the maintenance or restoration of these areas. Vegetation mapping is not available at a scale adequate to support local management decisions. There has also been limited related research into fire effects on vegetation attributes.

### **DEC response**

DEC acknowledges that broadscale vegetation structural/species composition mapping is still to be completed for the Dryandra Woodland. This mapping will require significant resources as would research on poison thicket health and restoration strategies and fire effects on vegetation attributes.

DEC will consider these issues when setting budget priorities in 2008/09.

### **Conservation Commission response**

The Conservation Commission acknowledges the response from DEC and notes the budget consideration information. At the twelve month review of this performance assessment an update of the implementation of this strategy will be included.

## **OUTCOMES**

### **Objectives of the performance assessment**

*To assess broad levels of achievement against goals and objectives identified in the management plan.*

### **Findings**

As there are few quantitative measures for most objectives, observation and qualitative comments have mostly been provided on the achievement or progress of the management goals for the reserve which cover the key management issues and provide the structure of the management plan.

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<sup>10</sup> Extract from the management plan pertaining to poison thickets:- *In addition, many of the native fauna species for which Dryandra is noted have specific habitat requirements that may be maintained through the appropriate management of fire. Dense thickets of Rock Sheoak, and poisonous plants such as *Gastrolobium microcarpum*, provide protection for the Woylie and Tammar, while hollow Wandoo logs are of particular importance to Numbats.*

## Fire Management

In the south-west forests, broad outcomes for fire management are often compiled at the regional level under a regional fire plan structure. As detailed under the previous section on Planning, the reporting of outcomes based on goals and objectives from a formal strategic document such as the Draft Regional Management Plan (Wheatbelt Region) would assist in the formal measurement of outcomes in this area.

For the area of prescribed burning which was inspected, the reporting of outcomes from prescribed burning was inadequate. However, in overall terms, there have been no significant wildfires recorded in the reserve over the period of the management plan.

**Figure 8. Prescribed burning (buffer burn) adjacent to Barna Mia facility**



At the time of the assessment, the district staff provided the following details in relation to local fire management:

*“The provision of the Wheatbelt Regional Fire Coordinator has assisted in the coordination of standards across the Wheatbelt Region. This position will assist in post burn monitoring standards. Fire resources allocated to the Wheatbelt Region. Development dependant on Regional Priorities. District will submit program for 07-08 financial year.”*

### Fauna conservation - Woylie decline

The issue of woylie decline was discussed at the time of the assessment. The following detailed response was provided in relation to recent studies and results:-

*Meso-predator study at Dryandra, a study, to investigate the interactions of cats and foxes on mid-weight range animals (specifically woylies) at Dryandra. Preliminary results suggest some issues with bait uptake, non-target species consuming baits and the continued presence of cats and foxes. Collared Woylies continue to persist. Until the project is completed fox baiting will continue unchanged from monthly hand baiting operations throughout Dryandra.*

*The meso-predator project at Dryandra Woodland and Tutanning Nature reserve is a four year study investigating the purported decline of woylies (*Bettongia penicillata*). It has been suggested that with continued fox control there maybe 'release' of other predators (feral cats,*



pythons and wedgetailed eagles) i.e. meso-predator release, and that these predators could have an equal or greater predatory impact on the fauna than the foxes did. The trapping of woylies to date has revealed that there is less of a population decline than previously feared. There have been approximately 90 woylies trapped during the study in Dryandra Woodland so far. Of these there are currently 20 individuals that are radio-collared. These are monitored Monday to Friday each week. When an individual is found dead the cause of its death is identified, if possible. Deaths have been attributed to foxes, cats, wedgetailed eagles and carpet pythons. Most females are carrying pouch young and new individuals are regularly encountered. The activity of foxes and cats is being monitored at approximately 130 sand plots throughout Dryandra Woodland.

At times all plots have revealed fox activity whereas at other times no plots were visited. The effectiveness of the current fox baiting regime is being investigated. Dried meat baits are placed on a selection of sand plots and a remote camera positioned to record the identity of the species removing the baits. The baits have proved to be very palatable to several species including foxes, brush tailed possums and woylies. (NB possums and woylies are very tolerant to 1080 and so will be unaffected by the small dose in the bait that is lethal to foxes). It is planned to radio collar a sample of foxes and feral cats to monitor their movements and their susceptibility to the baits. The remote cameras have identified the presence of several feral cats in Dryandra Woodland. The health status of the woylies at Dryandra Woodland has been investigated as part of an allied project. None of the woylies captured to date has been in poor health (despite extremely dry conditions) and no unusual parasite or other disease agent has been identified. The meso-predator project is comprehensively investigating the factors that may be responsible for fauna declines. Until the project is completed fox baiting will continue unchanged from monthly hand baiting operations throughout Dryandra Woodland."

At the time of the twelve month review of this performance assessment, the Conservation Commission will request a briefing in relation to the progress and observations of the meso-predator project.

**Figure 10. Example of a sand plot used to monitor fox and cat activity – located on a state forest boundary track**



#### **Fauna conservation - Return to Dryandra**

Outcomes in relation to the important goal of fauna conservation cannot be readily measured without the aid of the reporting structure of today's contemporary management plans, with well defined performance indicators. It is difficult to determine from the current reporting

arrangements a clear method of reporting for outcomes in relation to fauna conservation or nature conservation in general. However, at the individual species level for fauna conservation, data should exist which can be inferred to determine whether objectives have been achieved or progress has been made. The Return to Dryandra project was formally implemented in 1998 after the plan was finalised (1995) and has followed on from the individual recovery plans and fox-baiting programs which were active at the time, and can be directly related to the plan's strategies relating to fauna conservation. The Return to Dryandra project should enable a measurable indication in relation to meeting some of the fauna objectives of the plan. The project has involved strategies for the reintroduction of the bilby, the marl (western barred bandicoot), the boodie (burrowing bettong), the mala (rufous hare-wallaby) and the mernine (banded hare-wallaby).

It is considered as important to provide feedback in relation to the achievement of objectives for the Return to Dryandra project however; efforts to readily locate outcome information were unsuccessful. This observation is consistent with the results of the *Independent Review of the Western Shield Program* in 2003. Amongst other very positive observations, the review panel made clear recommendations in relation to improvements in the way in which Western Shield should be monitored and reported and advised that; *"Monitoring needs to be seen, and enabled, as the critical feedback loop for information flow in an active adaptive management framework,"* -and monitoring can- *"Provide information with respect to performance targets – an auditing function"*.

The requirement for improvements in the way in which outcomes related data is generated is also clearly identified in the DEC document *Managing Natural Biodiversity in the Western Australian Wheatbelt* (2003). This document details in the section relating to performance at the project level that;

*"To date, performance measures used within the Wheatbelt Region have mainly dealt with lower level outputs linked to expenditure and management strategies directed at specific threats (see Appendix 5)-not included with this report. These data are recorded against either particular projects – such as a specific landscape scale project – or a general 'slowing the rate of habitat decline' goal. A similar approach was used to produce the Department's Salinity Review (Wallace 2001). Although this process does generate useful information that allows comparisons between projects, including costs per unit of production, it does not generate the more outcome related data required to assess goal achievement properly.*

*Therefore, goal development in line with the structure shown in Table 4 (not included with this report) will be increased over the coming years to ensure management projects are better monitored and their effectiveness in achieving outcomes assessed."*

While the limitations in relation to outcome reporting are clearly identified in these 2003 documents, it remains difficult to locate improvements in the reporting of performance in relation to outcomes. Contributing factors to a lack of outcome reporting may include the nature of the funding stream and workforce which may report on outcomes through a number of different funding sources for some projects. For instance, while the Return to Dryandra project is funded internally by DEC, though some of the personnel involved in the project are funded through a range of other bodies.

**Figure 9. Barna mia – populations of fauna species are bred inside the enclosure and later released into the broader Dryandra area and elsewhere in the south-west.**



### ***Key Finding 6***

While there are a number of fauna conservation studies and projects underway in the Dryandra Woodland, the meaningful reporting of outcomes in the form of broad, quantitative information is limited. This aspect (outcome reporting) of management is considered as vital to demonstrate the achievement of the fauna conservation strategies in the plan and to encourage the local development of vegetation corridors with the public.

### ***DEC response***

Fauna monitoring in Dryandra is undertaken according to the guidelines of the Western Shield Fauna Recovery program, which is designed to provide a consistent approach across the south-west. Fauna monitoring results and trends over time for all monitoring sites, including the Dryandra Woodland, could be generated from the FaunaFile database.

Monitoring of fauna is also undertaken at the Return to Dryandra captive breeding site by the District, in a collaborative project with DEC's Science Division. Data gathered for this program are maintained and analysed by Science Division staff. The draft Return to Dryandra Strategic Plan outlines the vision, mission, strategies, goals, objectives and performance indicators for Return to Dryandra in the captive breeding of five mammal species for release into the Dryandra Woodland and other areas. The Western Shield Translocation Plan 2006-2009 also guides captive breeding at the Return to Dryandra facility.

Findings from the Return to Dryandra project are held at the Wildlife Research Centre.

DEC's Science Division is also involved in the meso-predator release project. This is a four-year project, due for completion in December 2009. Results from this work are reported annually to an independent panel established by me. This project is also part of the Invasive Animals Cooperative Research Centre and reporting on milestones is undertaken every six months. Reporting currently is by PowerPoint presentation and these are readily available from the scientist in charge, Dr Nicky Marlow. Dr Marlow also

updates the Wheatbelt Region annually on progress with this project. At the conclusion of this study, the results will be published in the scientific literature.

DEC acknowledges that the current proposed reporting arrangements are not being met. A Western Shield coordinator has recently been appointed and improvements to the FaunaFile database are being made. This development of more effective information storage and transfer system will enable annual Western Shield reporting to be prepared, including specific reporting on the Dryandra Woodland fauna conservation objectives.

### ***Conservation Commission response***

The Conservation Commission through this performance assessment is seeking to determine evidence of outcome reporting information under the Dryandra Woodland management plan and evidence indicating how this outcome information has been fed back through the management system for action by DEC management. Implementing changes as new information is available is considered as vital for the demonstration of continuous improvement in management. The Conservation Commission acknowledges the DEC response and accepts that the proposed changes will improve the current outcome reporting arrangements.

An updated report on actions relating to this finding will be reported upon at the stage of the 12 month review of this performance assessment.

## **CONCLUSION**

The implementation of the management plan has been adequate to conserve biological, physical, cultural and landscape values. A number of initiatives over the course of the plan have significantly facilitated public enjoyment of Dryandra in a manner which is considered compatible with the conservation goals. Overall the assessment found that management of Dryandra Woodland has been effective in providing for both conservation and recreation outcomes within a relatively constrained budget. Most of the strategies in the plan are being applied effectively and as required on an ongoing basis.

A significant change in context has been identified with the cessation of the tool handle industry. The relative value of the mallet plantations when compared with nature conservation values of more natural systems may need to be considered. This is particularly important within the context of the generally fragmented landscape of the Wheatbelt region. Resource levels to implement the strategies listed in the management plan have not been adequate to implement some important research strategies, particularly in relation to the vegetation mapping and prescribed burning strategies.

## Appendix 1 - Assessment Process Summary

### Assessment undertaken in 2006

The performance assessment undertaken by Conservation Commission staff was conducted from the 4<sup>th</sup>-5<sup>th</sup> of December 2006. District staff were provided with approximately 4 weeks notice of the performance assessment during which time they compiled records that would provide verification of action on strategies. These were reviewed in the course of the performance assessment.

Key staff were also interviewed to provide clarification of the background to strategies or to verify elements where documentation was not available. A listing of persons interviewed is provided below.

During the review of records, and interviews with staff, key sites or areas for field assessment were identified. These included sites that could provide verification that strategies had been implemented and more generally to allow observation of the environmental outcomes being achieved through management. Figure 1 shows the travel route in the reserves. The field assessment, together with the review and interview process, enabled an assessment of the overall performance against outcomes and objectives.

Approximately half a day was spent in the review of records and interviewing including time spent on follow-up after the field inspection. The inspection of sites at Dryandra took approximately a half a day. Other DEC staff were contacted during the drafting of this report in relation to particular assessment details.

#### List of people consulted

District Manager, Great Southern District, DEC

Senior Operations Officer, Great Southern District, DEC

Parks and Visitor Services Coordinator, Great Southern District, DEC

Senior Research Scientist, Woodvale Research, DEC

Senior Technical Officer, Woodvale Research, DEC

Project Leader Remote Sensing, Leeuwin Centre, DEC



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### *Dryandra Implementation Program*

#### Conservation Commission Audit 2002

Section	Strategy	Conservation Commission auditor comment
	PRINCIPAL MANAGEMENT DIRECTIONS	
2.	LAND TENURE	
H	Implement the proposed tenure changes shown on Map 3(a) and (b).	Areas managed as proposed tenures. Tenure change process commenced.
	Ensure changes to land tenure boundaries are easily located in the field.	Proposed State forest areas are plantation areas and so are easily distinguishable.
	When private properties adjoining Dryandra are for sale, investigate purchasing those areas which have potential conservation, recreation or production value, or management benefits. Acquisition must also consider surrounding land uses and the views of the local community.	There has been limited opportunity and needs to fit into Departmental priorities.
	Actively pursue the incorporation of nearby Crown Land as additions to Dryandra Woodland.	Commenced assessment of these lands in 2000, three year program scheduled for completion 2002/2003.
	Zoning Whilst the Plan has been prepared using current visitor use and growth patterns, and predicted changes over the next ten years, it is possible that future public use of Dryandra far exceeds expectations. If such circumstances lead to management problems, consider a zoning scheme for the Woodland that minimises conflicts but maintains current public expectations wherever possible.	No action anticipated at this stage, ongoing analysis of visitor numbers will provide need or basis for action.
	MANAGEMENT	
	PHYSICAL RESOURCES	
3.	CLIMATE AND WEATHER	
	Monitor weather data for use in the management of Dryandra, particularly severe events, rainfall, wind speed and direction, frosts and times of high fire risk.	Narrogin records used to help plan fire management. No necessity to monitor for other reasons.
4.	GEOLOGY, LANDFORMS AND SOILS	
	1. Minimise access and management activities in areas prone to erosion and disturbance, for example, on breakaway slopes, soils subject to waterlogging, valley floors and granite outcrops.	A road review has been completed. Identifies areas where limited activity/access is required.
	2. Consider for acquisition, by purchase or exchange when available, private property enclaves and Crown lands adjoining Dryandra that contain the Biberkine landform unity.	This opportunity has not arisen.
	3. Provide interpretive information on the relationship between the geology, landforms and soils, and the distribution of plant and animal communities.	This is provided in the "Woodland Ecology Course" and in presentations to school groups.
	4. Monitor the effectiveness of erosion control techniques and incorporate new practices where appropriate.	There is no formal process in place for this. Routine road maintenance picks this up.
5.	HYDROLOGY	

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	Manage the Woodland's water resources on a catchment basis.	Meaning of strategy unclear. No specific action.
	Liaise with the Department of Agriculture, Land Conservation District Committees and landowners to encourage land use practices that improve the water quality.	Have worked with other agencies on Western Power's "Greening Challenge".
	Ensure hydrological processes are considered during planning for all management activities, particularly timber production.	Ongoing-No clearfall and all small coupes.
	Maintain a potable water supply for the Settlement by protecting the catchment area of the Settlement Dam.	Done-recent work with Lions on drain cleanout.
	Maintain Congelin Dam and the Old Mill Dam and their catchments for fire control purposes.	Done-ongoing.
	Ensure that liquid wastes from the Settlement and recreation sites do not pollute streams and dams.	Done-ongoing.
H	7. Monitor the level and pressure of the groundwater in Dryandra and the surrounding area in order to detect potential soil salinity problems.	Not done. Informal visual monitoring of salinity impacts on adjacent properties. It is recommended that groundwater data be sought from the Agriculture Department, analysed and reported to the Conservation Commission by June 2003.
6.	LANDSCAPE	
	Assess and map the visual resource values of the Dryandra Woodland as time and resources permit.	Done in 1998.
	Ensure sites or activities currently requiring visual management (see issues) are managed according to the guidelines outlined in table 1.	Action on some matters (eg gravel pit rehabilitation, recreation site redevelopment) done. Ongoing work in other areas. No action on removal of exotics.
	Ensure government agencies, statutory authorities, lessees and CALM contractors recognise the importance of visual resource management.	Development Master Plan in place with Lions for village. Ongoing elsewhere.
	Encourage sensitive siting of facilities and signs, selection of site compatible materials and colours, revegetation with local native species, and careful planning and siting of utilities.	Colour scheme developed for Dryandra. Issues built into Development Master Plan.
	Develop all signs in accordance with CALM's Sign Manual and encourage the sensitive use of signs in areas adjacent to the Woodland. Interpretive and explanatory signs should be utilised before and during operations that alter the visual landscape.	Done-ongoing. Signs not used for harvesting operations but some general information about plantations provided
	BIOLOGICAL RESOURCES	
7.	VEGETATION AND FLORA	
H	Protect Dryandra's plant communities from plant diseases and weeds by implementing strategies in Section 18. Disease and 20. Weeds.	Dieback assessment done in 2001 with one infected site identified. Ongoing annual weed program for soursob and cape tulip.
	Protect threatened and priority species, especially those susceptible to plant fungal diseases, weed invasion and frequent fire. Develop and implement management strategies for their conservation.	Ongoing monitoring of threatened and priority species. Buffer burning to protect values and surveys for DRF in buffers.
	Ensure that a record of the location of threatened and priority flora species is readily accessible	A Department wide system is used with map records kept at

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	at CALM's Narrogin District Office. Ensure that these records are consulted before development or management actions are undertaken.	District, no current records of species in Dryandra.
	Through appropriate management, ensure that a range of physiological ages of plant communities are represented in Dryandra.	Wandoo burning strategies are still under development.
	<p>Ensure the continued persistence of the full range of plant communities within Dryandra Woodland and the surrounding areas by:</p> <ul style="list-style-type: none"> <li>liaising with neighbouring private property owners to protect areas of remnant vegetation, especially those types not well represented on CALM managed land;</li> <li>providing advice to landowners on species suitable for planting in vegetation corridors;</li> <li>giving existing areas of Jam Low forests (including stands of Sandalwood) and York Gum Woodlands management priority, eg. for weed control and plant re-establishment;</li> <li>incorporating areas of Crown Land into Dryandra Woodland within the vicinity of the Woodland.</li> </ul>	Regionally this is done through the land for wildlife program. Dryandra is not a specific priority. Involvement in the Greening Challenge is also relevant. Sandalwood work is ongoing. York gum management not a specific component of Dryandra.
	6. Carry out research into management regimes (especially fire) required to maintain vegetation communities.	Underway. Departmental research underway at Boyagin Nature Reserve. Statewide Departmental strategies underway for strategies 6 through 9.
	7. Research the: response to disturbance (such as plant disease, fire, weeds and erosion); reproductive biology, taxonomy; and age to maturity of all threatened and priority flora.	as above
	8. Record and describe the frequency, intensity and impact of severe disturbances (natural and human) on plant communities. As far as practicable, also describe recovery.	as above
	9. Identify keystone species and vegetation communities of critical conservation importance.	as above
	10. Keep abreast of new information on the flora and ecology of Dryandra. Utilise this new knowledge to modify management where appropriate, using specialist assistance.	Ongoing. No specific action.
8.	FAUNA	
H	General Continue to control, and if practicable eradicate, introduced species that are damaging or could potentially damage native fauna (see Section 21. Introduced Animals).	Ongoing. Significant fox baiting program in place. Some work on rabbit control. Pigs monitored at Highbury.
H	Protect habitats from plant disease (see Section 18. Disease), introduced plants (see Section 20. Weeds), inappropriate fire regimes (see Section 19. Fire) and human activities (see Section 13. Recreation Activities and Section 15. Timber Production).	See comments on specific strategies under Sections noted.
	Facilitate support for fauna conservation by encouraging and promoting the use of Dryandra for nature-based tourism purposes (see Section 13.1 Nature Study and Appreciation).	Ongoing. There have been a number of brochures and other activities completed in relation to this strategy. A "Focus Group" involving the local community has been established with this objective.
	Threatened Species Implement recovery plans, in conjunction with nominated recovery teams, for threatened species which occur or once occurred in Dryandra. The plans may include recommendations	Ongoing. "Return to Dryandra" program established involving numbat, woylie and bilby. Woylies and numbats now sent to other areas from Dryandra.

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	to re-introduce native animals that were once found in Dryandra and to use Dryandra as a source of native animals for re-introduction into other areas.	
	Where a fauna species thought to be at risk in Dryandra is not covered by a specific recovery plan, determine and implement management required to maintain or enhance populations using the results of current research and monitoring, and where appropriate, using specialist assistance.	Ongoing. Such species protected through baiting and fire management programs.
H	<b>Corridors</b> In consultation with neighbours, Land Conservation District Committees and local authorities, seek to establish and protect vegetation corridors between Woodland remnants.	Ongoing. One project for such a corridor completed along Colac Road.
	Provide information to the public, particularly the farming community, on the values of vegetation corridors and remnant vegetation to both sustainable agriculture and native biota.	Ongoing. Specific component of the Woodland Ecology course done at Dryandra. Other information provided as part of Regional and Statewide strategies.
	Research and Monitoring Encourage and carry out general research on fauna ecology in Dryandra, with particular emphasis on threatened and specially protected species, and those species thought to be at risk (eg. frogs).	Ongoing. Annual monitoring carried out as part of Western Shield. Other research programs underway (eg rufous tree creepers and enclosure work).
	Encourage and carry out research on the abundance, diversity and ecology of invertebrate fauna and on the impact of present management activities upon invertebrate fauna.	
	Record and describe the frequency, intensity, and impact of severe disturbances (natural and human) affecting animal communities. As far as practicable, also describe recovery of populations following disturbance.	Ongoing. There has been work and reports done in relation to wandoo tree decline. Fire mapping is undertaken but there have been few significant fires in the period
	11. Encourage and carry out research on the use of corridors in the Dryandra area.	Not done. No specific research in Dryandra. Work underway elsewhere.
	CULTURAL RESOURCES	
9.	ABORIGINAL HERITAGE	
H	Identify Noongar people having cultural links and on-going interests in Dryandra. In consultation with these people: implement recommendations of the current review. If cultural activities, including hunting, are identified as being compatible with CALM objectives, permit such activities in Quinns Block. Consult with local Noongars, reserve neighbours and other relevant interest groups to determine the sustainability, safety considerations and monitoring requirements of any activities; and provide opportunities for involvement in the management of Dryandra. For example, local Aboriginal people could be involved in: assessing the condition of existing Aboriginal cultural sites and taking appropriate action to preserve them; developing interpretive displays, community education programs and commercial tours incorporating the cultural history of the area; researching past and contemporary Aboriginal use of Dryandra; and anthropological and archaeological surveys of Dryandra.	Partly done. A meeting was held in 1999 with limited success. Some key linkages formed with those with stronger ties to Dryandra and some information from them used in interpretation. Ongoing discussion on the use of the ochre pit as an interpretive site. Quinns block use by aboriginal groups ongoing and subject to monitoring of impacts.
	2. Consult with the Department of Aboriginal sites prior to all major development proposals to ensure Aboriginal sites are protected.	Ongoing. Letter sent to relevant bodies prior to any significant developments.

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10.	EUROPEAN HERITAGE	
	Ensure that all management decisions concerning the conservation and restoration of places of historic interest within Dryandra adhere to the principles of the Burra charter.	Ongoing. Conservation Management Plan completed for the Village.
	Assess the condition of existing European sites and take action as necessary to preserve them.	Ongoing. Lease condition requires that monies from use of village are reinvested in maintenance /improvement.
	Develop interpretive and education opportunities incorporating the European history of the area.	Ongoing. Component of the woodland ecology course. Substantial information provided on the Congelin walk.
	Research and Monitoring Research past and contemporary European use of Dryandra.	Partly done. Some research required for interpretation and for development of the Conservation and Management Plan for the Village.
	RECREATION AND TOURISM	
11.	ACCESS	
H	Maintain and, where necessary, upgrade the vehicle access network shown on Maps 4(a) and (b) to a standard that provides for all-weather two wheeled drive vehicle access.	Done. Part of comprehensive road classification report.
	Maintain access for tourist coaches and caravans along Tomingley road and Kawana Road.	Done.
	Improve visitor safety by providing vehicle stopping points along main routes and advisory traffic signs where necessary.	Done
	Close minor tracks to public vehicles that: <ul style="list-style-type: none"> <li>are associated with past timber harvesting and have minimal public use;</li> <li>otherwise prevent additional recreation opportunities (according to ROS principles);</li> <li>are causing erosion problems or a loss of other values; and</li> <li>are impassable due to seasonal conditions or pose a high dieback risk.</li> </ul>	Done. No physical closure (except for dieback area). Some tracks may need active rehabilitation to ensure they do not continue to erode even if not used. See later recommendation.
	Make some minor tracks closed to public vehicles available for bushwalking and cycling (see Section 13.4 Bushwalking and Cycling).	Done. Part of review of walking trails.
	Promote responsible driving practices throughout the Woodland to minimise native animal road kills. Install advisory signs as appropriate.	Done. Advisory group support.
	Carry out road maintenance according to dieback disease hygiene measures and visual resource management principles.	Ongoing. Clean gravel used, dieback plan for District in place, conditions in all roading contracts (note unclean machinery has been rejected).
	Negotiate alternative routes or options for adjoining landowners needing to transfer stock through the Woodland.	Ongoing. Response to specific issues as they arise noting the presence of many public roads through the Reserve.
	Avoid the construction of any other tracks for management purposes except when values of a high priority are threatened, eg. by a wildfire (see Section 19. Fire)	Ongoing. Little requirement for new roads and subject to "necessary action" checklist.

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	Retain all vehicle access to private property.	Done.
	Research and Monitoring Monitor the use of public access routes in Dryandra to establish long-term trends in visitor numbers.	Ongoing.
	Monitor the condition of the access network in the Woodland, including vehicular and pedestrian access, and take appropriate management action where necessary.	Ongoing. Informal monitoring only mostly use built in maintenance standards. Field observation suggests some work required on tracks used for harvesting operation – see later recommendation.
12.	RECREATION AREAS	
12.1	RECREATION AREAS AND FACILITIES	
H	Redesign, modify and manage recreation areas and facilities as outlined in Table 4. Prepare site development plans for all major proposals.	Ongoing. Some sites completed, some partly completed. Upgrading built into future works programs.
	Ensure all facilities are developed in accordance with Departmental standards.	Done.
	Base all recreation development plans on an up-to-date plant disease hygiene plan and hygiene evaluation (see Section 18. Disease). Ensure no threatened flora or fauna are adversely affected.	Ongoing. Based on District Plan.
	Design all facilities and access tracks to require only minimum maintenance.	Ongoing. Some investigation of ways to manage camping fee collection to avoid maintenance costs and problems with BBQs noted.
	Encourage users to help reduce maintenance (for example, take home rubbish).	Done.
	Provide facilities for disabled access at key areas, including Old Mill Dam and Congelin Dam.	Partly done. Some sites suitable for wheelchair disabled, no walking trails suitable. Recommend this be considered in future trail development.
	Minimise conflict between users by careful site location and design.	Ongoing. New areas provide clear parking and camping bays and separate large groups from family campers.
	Design recreation areas and facilities to minimise safety hazards.	Ongoing. Informal risk management assessment is part of management.
	Research and Monitoring Monitor changes in the patterns and levels of visitor use, and predicted trends. Alter recreation and tourism management.	Ongoing. Records from Lions with satisfaction/comment surveys used.
12.2	DRYANDRA SETTLEMENT ACCOMMODATION COMPLEX	
	Ensure all buildings, erections, improvements, fixtures or fittings erected or installed during the term of the lease are in harmony with the historical style and character of the Dryandra Settlement (see Section 6. Landscape).	Ongoing. Managed through the lease agreement.
	Ensure, where appropriate, new buildings or constructions are in accordance with Australian standards for access for the disabled.	Ongoing.
	Promote the theme that 'biodiversity is essential to sustain each individual's quality of life' by encouraging Lions Dryandra to practice conservation principles through their daily management.	Ongoing. Signs and information kept in each hut promote this (eg do not feed animals, purchase firewood).

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	Encourage the development of alternative accommodation options on private property.	Ongoing. This is done through the focus group (two new farm-stays nearby recently developed).
13.	RECREATION ACTIVITIES	
13.1	NATURE STUDY AND APPRECIATION	
	Promote opportunities for viewing wildlife in their natural environment, provided this can be done safely and without undue disturbance to the species being observed or their habitats.	Ongoing. New viewing enclosure under construction. Associated research on viewing/animal interaction proposed.
	Develop nature walks, such as the Ochre Trail, to provide controlled access through interesting or sensitive environments (see Section 13.2 Bushwalking and Cycling, and Table 4).	Done. Seven trails now in place.
	Obtain necessary CALM and external approvals before identifying and interpreting sensitive features, such as threatened flora and fauna, or Aboriginal sites.	Ongoing. Current negotiation in regard to Ochre Trail.
	Implement those strategies in Section 25. Education, Information and Interpretation that relate to nature study and appreciation.	See Section 25.
13.2	PLEASURE DRIVING AND SIGHTSEEING	
	Develop and interpretive drive trail in Dryandra Woodland that incorporates the interpretive theme 'biodiversity is essential to sustain each individual's quality of life' (see Section 25. Education, Information and Interpretation).	Done. Radio serviced driving trail in place.
	Promote and manage Tomingley, Gura, Attunga, Patonga and Kawana roads as scenic drives. Liaise with local shires and the Western Australia Tourist Commission (WATC) to ensure a uniform tourist drive classification is achieved.	Done. As part of the road classification (except for Patonga Road).
	Promote responsible driving practices throughout the Woodland to minimise native animal road kills. Install advisory signs as appropriate.	See previous
	Install speed humps (or similar traffic-pacifying devices) to slow traffic within the Settlement area if deemed necessary in the future.	Done. Road realigned to manage traffic better.
	Ensure roads promoted for pleasure driving are maintained to a suitable standard and are sign posted appropriately.	Done. Road Classification.
	Provide appropriate facilities, such as roadside pullover bays, for drivers to stop and enjoy the environment.	Done.
	Ensure all works associated with roads and their viewsheds (for example, verge clearing, fuel reduction burning and timber harvesting are in accordance with visual resource management (see Section 6. Landscape) and ecological management principles.	Ongoing.
	Promote and maintain views at Contine Hill, Lol Gray Hill and other look-outs by removing obstructing vegetation where necessary.	Ongoing. Some work done to maintain views at Contine Hill.
	Provide information on the main features seen from selected look-outs, including nearby attractions, vegetation, landforms and fauna (see Section 25. Education, Information and Interpretation).	Not done. Low priority. Some interpretative information provided on the Ochre Trail.
13.3	PICNICKING AND BARBECUING	

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	Redesign, modify and manage picnic and barbecue areas as outlined in Table 4. Prepare site development plans for all major proposals.	See previous
	Design all facilities to have minimum impact and low maintenance requirements.	
	Encourage users to help reduce maintenance (eg. take home rubbish).	
	Provide facilities for disabled access at key picnic and barbecue areas, such as Old Mill Dam and Congelin Dam	
	Progressively phase in gas barbecues. Provide firewood at barbecue sites in the interim period.	Ongoing. Some firewood is supplied at some sites.
13.4	BUSHWALKING AND CYCLING	
H	Progressively develop, in consultation with the Lions Club and the local community, a range of walking tracks that enable visitors to explore the Woodland by foot. Major starting points will be at the Old Mill Dam, the Settlement and Lol Gray.	Done. Seven walking tracks in place.
	Develop walking and cycle tracks according to the guidelines in Table 5.	Mostly done. No walking track designed specifically for the elderly or disabled. See recommendation above.
	Monitor levels of use and, where conflict arises, consider closing some vehicle tracks to favour bushwalking.	Ongoing.
	Develop self-guiding, interpretive walks which help enrich visitor appreciation and understanding of Dryandra.	Done. Informative brochures and signs in place,
	Promote minimum impact bushwalking and cycling.	Ongoing.
	Provide comprehensive information on bushwalking and cycling opportunities available in the area (see Section 25. Education, Information and Interpretation). Information on walking and cycling tracks should include: <ul style="list-style-type: none"> <li>distance;</li> <li>level of fitness required;</li> <li>completion time; and</li> <li>special features.</li> </ul>	Done.
	Designate, in consultation with the community, suitable cycling tracks, incorporating: <ul style="list-style-type: none"> <li>management tracks;</li> <li>a variety of landscapes; and</li> <li>a variety of lengths and difficulty of routes.</li> </ul>	Ongoing. Work on development of cycle tracks in planning stage.
	Prohibit cycling off roads and on pedestrian walks where there is a clear conflict between users.	Ongoing. No signs of conflict at this stage so no specific action taken.
	Develop a walking and cycle track management plan.	Ongoing. Work has been done but is not in a formal report.
13.5	CAMPING	
	Establish a vehicle-based camping area at Congelin. Design campsites to cater for a range of group sizes, and for the effective separation of groups where practicable.	Done.



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	Seek to recover the costs of providing facilities and services to the public from the users by charging camping fees at Congelin.	Ongoing. There has been theft and damage to collection boxes. Alternative payment methods are being trialed.
	Develop a voluntary campground host scheme to assist with the management of camping areas during peak periods.	Ongoing. Part of Department wide initiatives.
	Progressively phase in gas barbecues within the camping area. In the interim period, reduce the risk of wildfire and damage caused by firewood collection by: <ul style="list-style-type: none"> <li>Educating the public as to the habitat value of fallen timber through interpretive material;</li> <li>Allowing fires in constructed fireplaces only;</li> <li>Ensuring that fuel levels in the surrounding area maintained at less than 7-8 tonnes/ha; and</li> <li>Supplying mallet firewood as necessary</li> </ul>	See previous.  Done  Done, but still problems with fires constructed outside of existing places. Done. Buffers around assets in place. Limited.
	Remove fire rings and ban the use of open campfires when gas barbecues are in place.	Not done. The ability to control the use of open fires is limited and it may be better to provide fire rings rather than remove them.
	Inform visitors of the location of the designated camping area, the type of facilities present and the fees charged, through publications, information boards and sign posting.	Done.
	Allow camping associated with backpacking on walk tracks and routes. Backpack camping will be restricted to a single overnight stay by individuals and small groups and will not be allowed within the vicinity of designated recreation areas or major roads. Restrict fires to portable fuel stoves.	Done. Informal advice given to those who request.
	Prohibit the use of generators by campers.	Not generally a problem.
	Research and Monitoring Monitor changes in the patterns and level of camp ground use, vegetation cover, and predicted trends. Alter recreation management accordingly.	Not done. No formal monitoring of impacts undertaken. Use pressures not considered to be a problem.
13.6	SWIMMING	
	Signpost dams informing the public of the potential safety and health problems associated with swimming, and discouraging such activities.	Done for Old Mill Dam not at Congelin.
	Maintain a visual monitoring system for blue-green algae. If blue-green algae is apparent, temporarily close dams to swimming	Ongoing.
	Assess the condition and safety of water access points in the dams. In conjunction with Lions Dryandra Village (Inc.) maintain, replace or remove facilities as required. Record inspections and management action.	Ongoing. Risk analysis done. Resulted in removal of swing from Congelin. Formal recording system not in place. Recommend formal system be put in place.
	Inspect the dams regularly for surface obstacles. Record all inspections and management actions.	Ongoing but formal recording system not in place.
	Ensure that any site redevelopment at Congelin or Old Mill dams specifically address the issue of visitor safety, particularly with respect to children.	Done. Congelin redevelopment used Departmental risk standards.

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	Maintain the fence surrounding the small dam adjacent to the Irabina Study Centre.	Ongoing.
13.7	<b>ORIENTEERING, ROGAINING AND CROSS COUNTRY RUNNING</b>	
	Permit orienteering, rogaining and cross country running in areas of State forest and national park within Dryandra Woodland.	Ongoing.
	<p>Ensure orienteering, rogaining and cross country running groups seek approval from the District Manager to stage events in Dryandra. Applications, including the event status (club, state or national), timing, and the number of competitors and observers expected, should be of sufficient detail to enable thorough evaluation of environmental and social issues, such as:</p> <ul style="list-style-type: none"> <li>• protection of flora and fauna;</li> <li>• potential to spread plant diseases;</li> <li>• susceptibility of soils to erosion;</li> <li>• potential conflict with other visitors; and</li> <li>• availability of suitable facilities, such as car parking areas, toilets, and BBQ areas.</li> </ul>	Ongoing. Protection issues dealt with through signage about presence.
	<p>Research and Monitoring</p> <p>Ensure people involved with orienteering, rogaining and cross country running monitor the impacts of events in Dryandra. In conjunction with these groups, develop, monitoring criteria and standards.</p>	Not done. No significant impacts observed at present use levels.
13.8	<b>HORSE RIDING</b>	
	Limit recreational horse riding (including carts) in Dryandra to gazetted public roads.	Done.
	Reassess demand for horse riding in year five of the Plan and, if necessary, consider designating a bridle trail within State forest areas in Dryandra. The trail will follow existing tracks and be sited on stable surfaces where existing biological values can be satisfactorily protected and managed.	No significant demand.
	Exclude competitive horse riding events from Dryandra (eg. gymkhanas and cross country riding).	Done.
13.9	<b>CAR AND MOTORBIKE EVENTS</b>	
	Exclude competitive car rallies and other motor sports from Dryandra Woodland.	Done.
	Encourage groups wishing to conduct social vehicle rallies to contact CALM for approval and planning of the event.	Ongoing. Groups usually seek approval.
	Direct social rallies away from areas of high conservation value, or popular recreation sites where there is a possibility of a nuisance being created to other visitors.	Done. Road Classification report used.
13.10	<b>FISHING</b>	
	1. Allow recreational fishing for Redfin and Yabbies at Old Mill Dam and Congelin Dam in accordance with the relevant Fisheries Department regulations.	Done.
14.	<b>TOURISM AND COMMERCIAL VISITOR SERVICES</b>	
	Tourism	

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	Improve access for tourists to Dryandra's natural and cultural environment (see Section 11. Access and 13.2 Pleasure Driving and Sightseeing).	See previous.
	Develop a range of recreation opportunities to enhance tourists' experience of Dryandra (see Section 12.1 Recreation Areas and Facilities).	See previous
	Upgrade the Settlement area, including the Old Mill Dam, and encourage caravan and 'farm stay' type accommodation adjacent to Dryandra to better service the needs of tourists.	See previous
	Market Dryandra to attract a clientele that is appreciative of the natural environment. The main target audiences will include local communities, schools and universities, passive recreationists, naturalists and nature-based tourists and others seeking passive recreation in a natural setting.	Ongoing. This is part of Focus Group responsibilities.
	Liaise with the Central south Tourism Association and the Western Australian Tourism Commission to ensure Dryandra is viewed and promoted as an integral part of regional tourism.	Ongoing. Staff attend meetings.
	In consultation with the local community and tour operators, design and implement educational programs and activities that promote the theme that 'biodiversity is essential to sustain each individual's quality of life'.	Ongoing. Examples of action include viewing enclosure and components of the Woodland Ecology course.
	Commercial Visitor Services Develop guidelines, in consultation with operators, for groups and commercial tours, including: <ul style="list-style-type: none"> <li>• maximum numbers of participants;</li> <li>• activities carried out in areas able to sustain such use; and</li> <li>• safety and environmental standards.</li> </ul>	Ongoing. Guidelines developed for viewing enclosure numbers and management of large bus groups.
H	Approve only those commercial concessions that rely on the special environmental qualities of the Woodland.	Ongoing. Limited number of commercial users.
	Issue concessions (through leases and licences) to tour operators to supply appropriate visitor services. Where it is necessary to limit licences/leases, offer opportunities to operators according to criteria including experience, knowledge, willingness to contribute to management, etc.	Ongoing. Has been limited to date but more with opening of viewing enclosure. Departmental standards will be applied.
	Encourage all tourism operators in Dryandra to attend CALM's Dryandra Woodland Ecology course (see Section 25. Education, Information and Interpretation).	Ongoing. A number of operators have attended. Consideration of a new course for operators at the viewing enclosure.
	Ensure CALM is directly involved in those commercial activities which: <ul style="list-style-type: none"> <li>• are of particular environmental or social sensitivity;</li> <li>• are of important educative or interpretative value to visitors; and</li> <li>• are likely to cause an overall financial loss to CALM if conducted by concession.</li> </ul> Ensure that fees and charges for the provision of these services to users at least cover costs.	Not applicable.
	Research and Monitoring Monitor the impact of commercial tours on the Woodland environment. If Dryandra's values are being adversely affected take appropriate action, such as limiting the number of tours.	Very limited number of commercial tours.

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	COMMERCIAL USE	
15.	TIMBER PRODUCTION	
H	Issue licences for up to ten years to approximately coincide with the term of this Management Plan.	Done.
H	Produce a plan for the management of mallet plantation areas and the associated industries by December 1995. The plan will: <ul style="list-style-type: none"> <li>state the criteria for selecting which mallet plantations will be either returned to communities or original species or remain plantation for a further rotation;</li> <li>determine which mallet plantations fall into the above categories;</li> <li>maximise the efficient use of the resource by linking timber allocations for the fencepost and firewood industries to:</li> <li>the estimated residue from the tool handle industry;</li> <li>CALM's silvicultural requirements (eg. thinning); and</li> <li>meeting the objectives of returning mallet plantations to natural vegetation</li> <li>contain timber management prescriptions that address silvicultural and nature conservation needs for all production operations (including domestic firewood);</li> <li>outline revegetation prescriptions for plantation areas which are to be returned to communities of original species;</li> <li>consider methods of encouraging the development of plantations on private property; and</li> <li>be reviewed concurrently with the Management Plan in 2004.</li> </ul>	Partly done. Work on this commenced but was not finalised. This is now a task that must be done jointly with FPC
H	Continue to prohibit the harvesting of Wandoo and Powderbark Wandoo in Dryandra Woodland. Identify, in conjunction with the local timber industry, alternative sources of these species as necessary, including CALM operations in the Darling Range forest belt.	Done. No wandoo logging done in Dryandra.
H	Demonstrate how the establishment of commercial plantations of suitable trees (especially local species, such as Brown Mallet and Sandalwood) can be integrated with surrounding agricultural land uses to benefit landowners, the timber industry and the environment.	Done. Plots on farmland established.
	Promote within the timber industry the need to harvest simultaneously all timber products (eg. tool handles, fence posts and firewood) from plantation areas to minimise the disturbance period of native fauna.	Partly done. Some integration of harvesting is done but it is not considered feasible to do for all products.
	Ensure that timber harvesting operations are conducted in accordance with the CALM Visual Resource Management guidelines to reduce aesthetic impacts.	Done. Low intensity of operations limit need for specific planning.
	Continue to follow, in all operations, the hygiene practices outlined in the CALM Dieback Hygiene Manual.	Done. Addressed through the District hygiene plan.
	Research and Monitoring Further develop research with the aims of increasing the yield and quality of mallet, and determining the properties and uses of mallet.	Ongoing. Very limited work on thinning.
	Continue silvicultural studies of sandalwood within current plots.	Ongoing. Sandalwood studies are being undertaken elsewhere.
	Monitor the impact of timber production on fauna populations.	Not done. General monitoring provides an indication.

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		Current level of harvesting low risk.
	Monitor the impact on fauna populations of returning selected plantations to pre-existing vegetation.	Not done.
	Monitor the use of plantation corridors by native fauna.	Not done.
16.	APICULTURE	
	1. In keeping with CALM policy on apiculture: <ul style="list-style-type: none"> <li>maintain the existing number of apiary sites within Dryandra. No decision on beekeeping will be made until the impacts of Honeybees on conservation values has been sufficiently described;</li> <li>permit no additional apiary sites (ie. additional to the existing sites) within Dryandra during the above period of research;</li> <li>administer apiculture by designating access routes, supervising field activities, sign posting sites and reviewing site management; and</li> <li>make available to registered apiarists with sites in Dryandra Woodland the annual prescribed burning program for the area.</li> </ul>	<p>Done</p> <p>Done</p> <p>Done.</p> <p>Done.</p>
	2. Manage access to sites in accordance with dieback hygiene principles. Close and relocate sites (if possible) if access poses an unacceptable disease risk.	Done.
17.	MINING	
	Continue to implement Government policy on mining, including the 'Guidelines for the Application of Environmental Conditions for Exploration on Conservation Reserves and Other Environmentally Sensitive Land'.	Ongoing/Not applicable.
	Ensure that if exploration or mining is approved, CALM recommends that it is subject to conditions that will minimise impacts on the biological, physical, cultural, and landscape values of the Woodland. Rehabilitation will be to CALM and DOME specifications and at the proponent's expense.	Not applicable.
	PROTECTION	
18.	DISEASE	
	1. Continue to follow, in all operations, the hygiene practices given in the CALM Dieback Hygiene Manual. Develop new procedures as necessary.	Ongoing. District Hygiene plan developed.
H	2. Continue plan disease surveys of Dryandra to identify and then isolate diseased areas. Redevelop or close any access tracks (vehicular, horse or pedestrian) that passes through inundated, infected or high risk areas.	Ongoing. Surveys completed and section of track closed off.
	3. Consider provision of footbaths (containing fungicide) at the entrances to walk tracks that traverse dieback disease susceptible plant communities.	Ongoing. This action proposed for viewing enclosure use.
	4. Consider temporary closure of tracks when the risk of disease spread is high, for example, after significant summer rainfall.	Not done. Current infestation limited, not necessary.
	5. Inform and educate Woodland users about plant diseases and the need to stay on well-formed roads or tracks. Include dieback hygiene information in each Settlement hut.	Ongoing. Information provided to the public about infestation found in Dryandra. No information in huts – to be

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		developed.
	6. Ensure staff associated with Dryandra are trained in plant disease recognition, sampling and management techniques.	Ongoing. One staff member trained.
	Research and Monitoring 7. Monitor known fungal disease infections. Develop a comprehensive description of each infection, including information on species affected, vegetation association, infection area, rate of spread, soil profile, topography and threat to ground and surface waters. Use this information to update predicted hazard ratings for vegetation associations in the Woodland.	Ongoing. Infestation only described in 2001. Further monitoring work required.
	8. Investigate possible disease control and eradication procedures, while ensuring that they do not place other areas or values at risk.	Ongoing. District and Departmental work will advise measures to be taken.
19.	FIRE	
H	Fire Prevention Maintain a system of 50-100 m burn buffers along strategic access routes and high risk public roads to assist containment of wildfires to blocks of about 400 to 600 ha, as depicted on maps 5(a) and (b). Maintain fuel levels within these buffers at less than 7-8 tonnes/ha. Where practicable, link the buffers with natural low fuel areas, such as breakaways and wandoo flats.	Done. System of buffers in place.
H	Maintain low fuel levels (less than 7 to 8 tonnes/ha) in buffer strips and areas immediately adjoining the Settlement, recreation sites and other facilities.	Ongoing. Buffers considered adequate for protection of facilities.
H	Reduce the risk of wildfire by progressively phasing in gas barbecues. In the interim period allow fires in constructed fireplaces only	See previous.
H	Restrict fires associated with backpack camping to portable fuel stoves for cooking only.	Done.
H	Consider closing areas within Dryandra to the public to protect environmental assets (eg. long unburnt areas) during extreme fire conditions.	Not done. Not considered necessary, very little peak summer use.
H	Burning Operations Maintain an appropriate range of vegetation community age classes to ensure maximum habitat diversity.	Ongoing. Boyagin research to inform.
H	Ensure all prescribed burns comply with written prescriptions approved by the Regional Manager. The prescription must incorporate an environmental checklist which takes into consideration the impact of burning on the environment. Where monitoring sites or research plots are involved, consult the appropriate research officer.	Done. Departmental systems used.
H	Modify, relocate or defer proposed burns where threatened flora occurs within these areas. Where it is a necessary component of the species' life cycle, or where in exceptional circumstances it is considered by CALM that the burn should proceed, Ministerial permission will be obtained.	Not applicable.
H	Map and document all burning and fuel modification operations, as well as wildfire outbreaks in or near Dryandra.	Done.
H	Carry out all burns according to visual resource management principles, particularly in visually	Done. Part of Departmental checklist.

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	significant areas (see Section 6. Landscape).	
H	Access Maintain a network of roads to enable safe and rapid access for fire control to blocks of approximately 400 to 600 ha.	Done. Component of road classification plan.
H	Minimise construction of any new firelines during wildfire suppression, and ensure post-fire rehabilitation occurs. Construct new firelines and firebreaks according to dieback disease hygiene guidelines.	Not applicable.
H	Visitor Protection and Safety Actively promote public education and awareness of fire risk, safety and survival through pamphlets, information boards and personal contact by staff.	Ongoing. Information specific to Dryandra and more general awareness information.
H	Review regularly the Dryandra Settlement Fire Protection Plan. Provide opportunities for visitors to the Settlement to view this document.	
H	Fire Detection Staff the Dryandra fire tower when Fire Danger Index ratings reach or exceed Very High, or when otherwise considered appropriate by the Fire Duty Officer. In addition, continue to utilise fire notifications from the public, neighbours and shires.	Done until last year. Fire tower no longer safe. Fire risk considered low so no alternative proposed.
H	Fire Suppression Maintain an effective fire suppression capability within the Narrogin District in accordance with the Narrogin District Fire Control Working Plan.	Ongoing.
H	Continue to liaise with the local Bush Fire Brigades and neighbouring shires to ensure an effective fire management force is in place.	Ongoing. Attendance at Brigade meetings.
H	Ensure compliance with inter-agency and other co-operative fire suppression agreements.	Not applicable. No such agreements in place.
H	Research and Monitoring Map the distribution, structure and vigour of poison thickets. Conduct two experimental burns during the life of this Plan, with the aim of forming large, continuous thickets. Monitor subsequent thicket development and use by fauna. If successful, prepare and implement a program or rehabilitation for degraded poison thickets.	Not done. Some work done in period prior to Plan and ongoing work elsewhere (Boyagin).
H	Research and monitor: the effects of fire on selected biota, including vulnerable species, within fuel datum areas, buffer burns and experimental burns; burning strategies aimed at maintaining the supply of hollow stumps, log and trees; and the effects of rotational burning for habitat management.	Not done at Dryandra, these are components of work at Boyagin.
H	Review relevant fire information from other areas that may be applicable to Dryandra.	Proposed. Intention to review and apply appropriate knowledge from Boyagin.
H	Investigate the role of fire in the silvicultural treatment and revegetation of mallet plantations.	Not done. Recommend that action on this be considered and proposal forwarded to CC by June 2003.
20.	WEEDS	
H	Monitor the location, extent, spread and, where possible, ecological effects of weeds in	Done. Declared weeds monitored and spraying program



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	Dryandra. Use the results to modify management practices or instigate control measures.	implemented annually.
	Conduct control programs in areas of greatest conservation value. For example, monitor known priority flora populations for weed invasion. Take control measures as necessary.	Not done. No targeted control applied.
	Identify and give priority to control of major weed threats such as cape tulip, perennial grasses and Bridal Creeper.	Done. These are priority under item 1 above.
	Eradicate, where practical, isolated outbreaks of weeds while the infestations are small and easily controlled.	Done. Program focus on declared weeds.
	Remove exotic and non-local trees and shrubs where considered necessary. Where records exist about the establishment of exotic plantings, measure and document growth details.	Ongoing. Some acacia species removed in Village.
	Liaise with government authorities and adjacent landowners to promote the control of environmental weeds on lands adjoining Dryandra.	Ongoing. Some liaison with the Department of Agriculture, neighbouring properties not a significant problem.
	Consider the potential for weed introduction and spread when planning management operations, eg. road maintenance, particularly where adjacent to weed sources. Modify strategies as necessary.	Ongoing. Contract conditions require clean machinery.
	Involve volunteer groups in weed control where appropriate (see Section 26. Community Liaison and Involvement).	Not done. Low priority.
	Research and Monitoring Keep abreast of new information in weed research and new methods of control. Utilise this new knowledge to modify control programs, where appropriate, using specialist assistance.	Ongoing. Limited action specific to Dryandra but ongoing Departmental programs (eg Bridal Creeper leaf hopper).
	Monitor and report on the effectiveness and potential ecological side-effects of control programs.	Ongoing elsewhere in State.
21.	INTRODUCED ANIMALS	
H	Record the incidence of feral animals, and monitor their location, extent, spread and ecological effects. Instigate control measures, with pigs, foxes and cats receiving high priority.	Ongoing. Presence of ferals noted on files. Focus on fox control, other work as needed.
	Liaise with the Agriculture Protection Board, adjacent landowners and local authorities regarding pest control in Dryandra and on surrounding lands. Integrate control programs wherever possible.	Done.
H	Continue the current fox baiting program, modifying methods in light of new information or with specialist advise. If practicable, expand the program to include all the blocks of Dryandra Woodland.	Done. Frequency modifications etc but not extended to Highbury.
	Continue strategies to minimise the risk of accidental poisoning of working dogs, including liaison with adjacent landowners and providing information to the public on the risk of poisoning working dogs.	Done. Signs in place.
	Continue to follow a policy of prohibiting domestic animals from Dryandra, except for guide	Done. Signs in place.

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	dogs accompanying blind persons and horses on permitted routes. Provide information as to why domestic animals are not allowed in Dryandra, and the location of alternative bushland areas (eg. Foxes Lair within the Narrogin townsite).	
	Ensure adequate hygiene methods to prevent spread of weeds or plant diseases when using vehicles for fox baiting.	Ongoing. Clean vehicles requirement and exclude high risk areas from travel.
	Continue to control rabbits where necessary. Modify control methods in light of new information or with specialist advice.	Done. Action as required.
	Liaise with the apiculture industry to minimise the likelihood of swarming events.	Not applicable.
	Eradicate feral Honeybee colonies that area interfering with recreation sites.	Not applicable.
	Research and Monitoring Participate in research on introduced animals and their control.	Ongoing. Most work elsewhere but limited in Dryandra
	Keep abreast of new information in introduced animal research and new methods of control. Utilise this new knowledge to modify control programs where appropriate, using specialist assistance.	Ongoing.
	Monitor and report on the effectiveness and potential ecological side-effects of control programs.	Ongoing. Woylie numbers used to monitor.
22.	GRAVEL, SAND AND STONE	
	In accordance with NPNCA policy, permit access to basic raw materials from nature reserve or national park areas where the road or facility is within the boundaries or road reserve enclave of the reserve or national park. Where the material is for use on areas or easements not managed by CALM, ensure that all biological survey and dieback assessment and related costs are borne by the authority accessing the material.	Done. Limited gravel requirements.
	Ensure requests for gravel, sand and stone from State forest areas of Dryandra are in accordance with CALM Policy Statement No 2. Local Government Authority Access to Basic Raw Materials from State Forest and Timber Reserves.	Done. Request from local authority denied.
	Use, wherever practicable, materials for road construction and maintenance that visually blend with the surrounding soils.	Done.
	Ensure an up-to-date hygiene map is available before raw materials are extracted. Materials infected with plant fungal disease will not be used on disease-free-sites. Ensure all quarries have strictly controlled access.	Done. Recent survey map available. Control of all access to quarries difficult to achieve.
	Ensure that conservation values, particularly threatened plants or Aboriginal sites, are not disturbed by extraction of materials.	Not applicable.
	Rehabilitate all pits according to CALM guidelines as soon as extraction of materials is complete.	Done/ongoing.

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23.	REHABILITATION OF DISTURBED AREAS	
	Manage Dryandra, as far as practicable, to avoid disturbance. Rehabilitation should be the last option in a series of management decisions designed to protect Dryandra's values.	Ongoing. Limited disturbance to areas in Dryandra.
	Minimise the area and degree of disturbances associated with planned activities (for example, recreation site development - see Table 4), and specify rehabilitation requirements.	Done. Built into planning for site development and viewing enclosure.
	Survey Dryandra for existing disturbances and specify areas that require rehabilitation. As part of this process determine, in consultation with the Lions Club, what recreation activities are appropriate for the Settlement field and the associated area required. Rehabilitate the remainder of the field, except the seed orchard.	Partly done. No broadscale survey but masterplan for village area drafted. Planned to retain significant portion of playing field. Some planting around village undertaken.
	Prepare and implement rehabilitation prescriptions for all disturbed areas as resources permit. Natural regeneration is the preferred method rehabilitation and, where necessary, steps should be taken to encourage it. Where natural regeneration is not possible, species of local provenance should be planted, with restoration as far as practicable of the original species diversity and composition.	Ongoing. Limited work undertaken, refers to tree planting around the village.
	Ensure that, whenever possible, the cost of rehabilitation is borne by the agency responsible for the disturbance.	Done.
	Liaise with mining companies, government departments and other land users to ensure an exchange of ideas on the latest techniques and standards in rehabilitation.	Ongoing. Regional/District wide responsibility.
	Research and Monitoring Investigate techniques for converting the selected areas of mallet plantation to communities of original species, and monitor the effects on fauna.	Not done. Proposed for action, report on progress to Commission June 2003.
	Monitor rehabilitation programs to ensure that the aims are being achieved, and to ensure that improvements are incorporated.	Not applicable.
24.	PUBLIC UTILITIES	
	Encourage the placement of any new utility corridors outside Dryandra or along existing access routes. Encourage alternative, low impact methods of providing services, for example underground cables.	Not applicable.
	Ensure that strict dieback disease hygiene conditions apply when maintenance of utilities and corridors is undertaken.	Ongoing. Western Power use their internal hygiene prescriptions.
	Refer any new proposal for utility corridors through the Woodland to the Environmental Protection Authority.	N/A
	COMMUNITY RELATIONS	
25.	EDUCATION, INFORMATION AND INTERPRETATION	
H	Information Provide basic information on the Woodland to visitors, including pre-visit and recreational information, by way of a general brochure.	Done. A number of information brochures are available.

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	Upgrade visitor orientation to Dryandra by upgrading signposting and installing an information shelter at Old Mill Dam. Ensure all signs, including those erected by the Lions Club, meet the standards of the CALM Signs Manual.	Done.
H	<p><b>Interpretation and Education</b>  Design and implement educational programs and activities that promote the theme that 'biodiversity is essential to sustain each individual's quality of life' by:  providing teaching kits and resource information that can be used for environmental education programs;  upgrading the Irabina Field Study Centre;  providing instructional courses on recreational activities and ecology; and  developing an interpretive drive trail  Components of this theme include: nature conservation; sustainable timber production (including agroforestry), recreation; agriculture; and Aboriginal culture.</p>	Ongoing. Actions listed completed further work being undertaken.
	Focus interpretation and education programs at Dryandra Settlement, the Old Mill Dam and the Irabina Study Centre.	Done. Additional focus at viewing enclosure under construction.
	Liaise with the relevant groups, eg. tour operators, when preparing audience-specific programs.	Ongoing. Done as required via tourist association and on a one to one basis.
	Develop 'user-pays' systems for: seasonal interpretative activities programs; and the Irabina Study Centre ecology courses.	Done. User pays system in place but not at full cost recovery.
	Allocate additional District staff time to education programs at Dryandra Settlement. Investigate stationing staff with an educational role at Dryandra.	Done. Staff increases, not stationed at Dryandra.
	Train staff and, where appropriate, volunteers in the principles and procedures of public communication, and the planning and effective presentation of nature interpretation programs.	Done. Staff have done interpretation training.
	<p><b>Funding</b>  Seek funds and resources for educational programs and activities from the following sources:  government (Federal and State);  the corporate community, eg: sponsorship; and  the private non-profit sector, eg. volunteers.</p>	Done. Funding has been obtained from Federal Government (Viewing enclosure), State (for signs and other developments and from the Community (Focus Group for signs).
	<p><b>General</b>  Develop communication plans for major management issues. Plans should identify objectives, target audiences and channels of communication.</p>	Not done. No formal plans in place, have commenced informal interaction.
26.	COMMUNITY LIAISON AND INVOLVEMENT	
H	Liaise with adjoining landowners, Land Conservation District Committees, local authorities and Government departments to ensure that, as far as possible, land management is integrated across the landscape.	Ongoing. Not specific to Dryandra, Regional approaches used.
	Promote on-going liaison with the Bush Fires Board, local Bush Fire Control Officers and volunteer brigades.	Ongoing. Meetings attended, District/Regional approach.
	Encourage shires and the local community to take responsibility for weed control, feral animal	Ongoing. Regional approach.

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	control and visual resource management on adjoining lands.	
	Encourage and assist in the formation of a self-administering Friends of Dryandra group to undertake volunteer programs within the Woodland, including assisting with interpretation programs, nature conservation works, and monitoring.	Done. Focus Group has similar objective, other groups also involved.
	Continue to inform the community about fox baiting.	Ongoing. Regional and State-wide strategy (eg Western Shield).
	Continue to inform the community about the values of bush corridors and roadside reserve initiatives.	Ongoing. Regional and State-wide strategy (eg Western Shield).
	Promote and provide advisory services to local communities on issues impacting on Dryandra.	Ongoing. Done via Focus Group and broader publicity in media.
	RESEARCH AND MONITORING	
27.	INVENTORY, RESEARCH AND MONITORING	
H	Implement an integrated program of inventory, research and monitoring based on the summary given in Table 6. Staff from CALM's Science and Information Division, and Wheatbelt Region Staff should be involved in integrating the program, and should facilitate its implementation.	See previous comments on specific monitoring strategies.
	Continue to require all researchers to make their findings readily available to CALM and the public.	Ongoing.
	Encourage and support other groups, agencies, institutions, volunteers and individuals to carry out research and monitoring projects relevant to the conservation and management of Dryandra.	Ongoing. Dryandra is well used by a variety of researchers.
	Encourage the use of the Settlement and the Irabina Study Centre for research and educational purposes.	Ongoing. One cottage made available to CALM researchers.
	PLAN IMPLEMENTATION	
28.	PRIORITIES	
	Prepare an initial three year rolling implementation plan. Review the implementation plan after this period and amend where necessary. Continue three-yearly reviews for the life of the Plan.	Not done. Works are built into the District Plan, no system for tracking implementation.
	Implement management strategies outlined in Table 7 as a matter of high priority.	Ongoing. Most high priority strategies implemented.
29.	FUNDING AND STAFF	
	Within CALM's overall staffing and funding priorities the Department will seek to: Provide sufficient staff and resources to implement this Plan and to maintain new developments.	Ongoing.
	Investigate stationing CALM staff with a management and education role at the Settlement.	Done. Considered impractical to implement.
	Provide on-going training to staff.	Done. A number of relevant training events provided (eg animal handling.)
	Involve volunteers in as many aspects of management as practicable.	Partly done. Limited progress, lack of resources to manage such programs.

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H	Identify potential sources of external funding, and projects or areas of operation capable of attracting external funding. Pursue these sources according to departmental policy and procedure.	Ongoing. A number of external sources accessed. See previous.
	Investigate fees or other revenue gaining measure to recoup costs where specific services or opportunities are provided for the public.	Done.
	Provide opportunities for people to contribute directly to Dryandra's budget, for example, through donations.	Done. Such an opportunity will be provided at the viewing enclosure.
	Enter into partnerships with organisations, community groups, and local and State government departments where economic benefits can be obtained in joint or cooperative operations.	Done. Focus group established.
30.	EVALUATION AND REVIEW	
	Evaluate and review the implementation plan every three years for the life of the Plan.	Partly done. One review completed and presented to the NPNCA in late 1997
	Evaluate and review the Plan within ten years of its gazettal.	

[illegible]CRYANDRA  
MAP 3a



Appendix 3b. Map extract from management plan showing proposed tenure

