

FOREST MANAGEMENT PLAN 2004-2013 STATUS OF IMPLEMENTATION AS AT 31 DECEMBER 2005

CONSERVATION COMMISSION OF WESTERN AUSTRALIA

January 2008



**Conservation Commission
of Western Australia**



Table of contents

Introduction	1
Biological diversity	2
Productive capacity	11
Ecosystem health and vitality	19
Soil and water	25
Global carbon cycles	29
Natural and cultural heritage	30
Socio-economic benefits	32
Plan implementation	36

Introduction

The *Forest Management Plan 2004-2013* (FMP) sets out a series of actions relating to a range of objectives for management of Western Australia's south-west forests that combine to achieve ecologically sustainable forest management. These actions require the Conservation Commission of Western Australia (Conservation Commission), the Department of Conservation and Land Management (since mid-2006 the Department of Environment and Conservation here referred to as the Department) and the Forest Products Commission to undertake a range of specific activities.

The Conservation Commission and the Department are not required to report annually on compliance with the FMP. However, both organisations have chosen to prepare an annual report. The contents of the Department's report are incorporated into this report.

The Forest Products Commission is required to produce an annual report on the compliance by its staff and contractors with the provisions of the FMP and subsidiary management guideline documents (Action 32.5). That compliance report for 2005 has been published on the Forest Products Commission's website¹ and its contents are incorporated into this report.

Each Action in the FMP includes either an actual (in the text of the Action) or indicative (in Appendix 14 of the FMP) timeline for its implementation and completion.

This report addresses the Actions in the order they appear in the FMP and describes the implementation status of each as at 31 December 2005, including the actions of the Conservation Commission, the Department and the Forest Products Commission.

¹ http://www.fpc.wa.gov.au/pdfs/FMP%20Compliance%20Report%20as%20at%2031%20December%202005%20_final_.pdf

Biological diversity

FOREST MANAGEMENT PLAN ACTION	IMPLEMENTATION STATUS
<p>1. FORMAL RESERVES</p> <p>The plan proposes the following actions at the whole of forest scale for the purpose of seeking to conserve biodiversity and ecological integrity in all native forest ecosystems through the establishment and management of a system of reserves that is comprehensive, adequate and representative:</p>	
<p>1.1 The Department will initiate the processes required for the land category changes proposed by the plan by:</p> <p>1.1.1 undertaking fine scale reserve design for the parks proposed in the <i>Protecting our old-growth forests</i> policy so as to include within the parks old-growth forest adjacent to the nominal boundaries (<i>on plan commencement & ongoing</i>);</p> <p>1.1.2 facilitating the Government's community consultation process on fine-scale reserve design (<i>on plan commencement & end of year 2</i>); and</p> <p>1.1.3 consulting with the Conservation Commission and then advising the Minister for the Environment on final reserve boundaries. (<i>on plan commencement & ongoing</i>)</p> <p>Consultation with the community and affected government and local government authorities as contemplated by Action 1.1.2 may result in minor amendments to the boundaries of reserves shown on Map 3 and Map 5.</p>	<p>Three Reserves Acts, assented to in late 2004, implemented 136 of the tenure proposals listed at Appendix 2 of the FMP. Work to resolve the National Estate issues holding up proclamation of the outstanding 12 areas progressed. Throughout 2005 work continued on the fine-scale mapping and consultation with local government authorities, relevant State Government agencies, service utilities and Aboriginal groups on the remaining 97 land category changes. With the exception of 14 proposals, falling within the shires of Manjimup and Denmark, all land category change proposals have been mapped and consultation completed or underway. The land category changes are proposed to be implemented through a Reserves Bill in 2006 or 2007 or administratively under the <i>Land Administration Act 1997</i>.</p>
<p>1.2 The Department will manage the areas proposed by Appendix 2 for inclusion in a national park, nature reserve or conservation park consistently with their proposed land category and purpose and relevant Departmental policies until such time as they are formally created. Timber production in these areas will not be permitted. (<i>on plan commencement & ongoing</i>)</p>	<p>Implemented and ongoing.</p>
<p>1.3 The Department will cooperate with the Departments of Environment and Planning and Infrastructure and other agencies in relation to the establishment of a comprehensive, adequate and representative reserve system outside the RFA area, through Bush Forever or similar programs. (<i>on plan commencement & ongoing</i>)</p>	<p>The Department continues to work with the Department for Planning and Infrastructure and the former Department of Environment and other agencies to implement the Bush Forever Program.</p> <p>The Swan Bioplan project commenced during 2005 with a comprehensive survey program which will continue over 2006 and 2007. The information gained from this survey will allow the identification of areas that are worthy of addition to the formal conservation reserve system.</p>

Biological diversity

2. FOREST CONSERVATION AREAS	
The plan proposes the following Actions at the whole of forest scale for the purpose of seeking to complement the function of the formal reserve system in the conservation of biodiversity:	
2.1	The Department will initiate the processes required for the land classification changes proposed by the plan. <i>(in year 1 & ongoing)</i>
	Mapping of the proposed forest conservation areas within the Walpole Wilderness Area has commenced. However, priority is to implement the land category changes proposed by the plan followed by the land classification changes.
2.2	The Department will manage the areas proposed by Appendix 2 to be classified as forest conservation areas consistently with their proposed classification and purpose and relevant Departmental policies until such time as they are formally classified. Timber production in these areas will not be permitted, but other productive activities not involving harvesting of sawlogs or other residue logs may be allowed. <i>(on plan commencement & ongoing)</i>
	Implemented and ongoing.
2.3	The Department in consultation with the Conservation Commission will consider classifying all areas of old-growth forest outside the formal reserve system as forest conservation areas to improve their long-term security of classification. <i>(in year 1 & end of year 1)</i>
	An implementation paper was compiled to address this action. The paper recommended classifying only the large and consolidated areas of old-growth forest as forest conservation areas. The paper was endorsed by the Conservation Commission at its 13 December 2004 meeting and referred to the Minister for the Environment on 22 December 2004. The Minister endorsed the approach and sought a report on old-growth forest patches over 100 hectares. The analysis is still to be completed.

Biological diversity

3. INFORMAL RESERVES

The plan establishes informal reserves described in Appendix 3 and proposes the following Actions at the operational scale for the purpose of seeking to conserve biodiversity outside of formal reserves and forest conservation areas:

<p>3.1 The Department and the Forest Products Commission will conduct their operations within the informal reserves established by Appendix 3:</p> <p>3.1.1 in a manner that has regard to the requirements set out in Appendix 3 where the operation occurs prior to the approval of the Guidelines referred to in the following paragraph (<i>on plan commencement & end of year 1</i>); and</p> <p>3.1.2 in accordance with the Guidelines for the Management of Informal Reserves which are to:</p> <ul style="list-style-type: none">• be prepared by the Department with public consultation;• provide for the manner in which the requirements of Appendix 3 are to be met; and• be submitted to the Conservation Commission for advice and approved by the Minister for the Environment by 31 December 2004, when they will take effect and supercede Appendix 3.	<p>The requirements of Appendix 3 were implemented for the management of informal reserves. Checking compliance with the FMP requirements to protect informal reserves is a component of Departmental operational audits and is reported in the Department's Annual Report. The four new informal reserve categories, including old-growth forest, were implemented in all operations that commenced in 2005.</p> <p>There were 7 incursions across informal reserve boundaries associated with native timber harvesting operations reported through the Forest Products Commission's environmental management system (EMS). One of these involved falling trees within a travel route zone, the others involved harvesting machine movement. All except two were of a minor nature. The exceptions were an incident involving the falling of trees and another involving the cleaning down of a harvest machine within a stream zone.</p> <p>There were two related incidents where timber harvesting machinery strayed outside of the demarcated harvest boundary. These two incidents did not involve formal or informal reserves.</p> <p>The Guidelines for the Management of Informal Reserves have not been completed. The Department has been progressively developing the more complex components of the Guideline and publishing them in an interim form as Advisory Notes. Three Advisory Notes (Blade-up Access on State Forest and Timber Reserves, Salvage of Logs in Association with Informal Reserves, and Management of Access in Informal Reserves and Other Protected Areas Within State Forest and Timber Reserves) are well developed. These Advisory Notes are intended to form part of the guidelines. A framework for the Guidelines for the Management of Informal Reserves has been developed, however, the Department will discuss with the Conservation Commission a process to address the FMP requirements.</p>
---	---

Biological diversity

<p>3.2 The Conservation Commission will:</p> <p>3.2.1 assess whether any areas available for timber harvesting which were classified as old-growth forest in the Department's corporate database in 1997, but which are not classified as old-growth forest on the date of the commencement of this plan, should be reclassified as old-growth forest (<i>in year 1 & ongoing</i>);</p> <p>3.2.2 prepare with public consultation an assessment process and field assessment criteria, (<i>in year 1 & ongoing</i>) which will:</p> <ul style="list-style-type: none"> • be based on the Department's current approach to the application of the criteria for classification of land as old-growth forest in the Department's corporate database; • include a process for persons to request the Conservation Commission to assess whether areas on an indicative timber harvest plan referred to in Action 11.5 should be classified as old-growth forest in the Department's corporate database, and for the Conservation Commission to determine whether such an assessment is warranted; and • be made publicly available. <p>3.2.3 publish the reasons for altering or confirming an area's classification in the Department's corporate database after it has been assessed by the Conservation Commission. (<i>in year 1 & ongoing</i>)</p>	<p>In December 2005 the Conservation Commission published <i>Assessment criteria and process for the Conservation Commission review of old-growth amendments</i>. Since the completion of the assessment criteria and process the Conservation Commission has applied them to the areas classified as old-growth forest in the Department's corporate database in 1997, but which were not classified as old-growth forest at the commencement of the FMP.</p> <p>As part of the development of the draft assessment criteria and process a procedure for members of the community to nominate potential old-growth forest areas for assessment by the Conservation Commission was developed and implemented.</p> <p>The Conservation Commission provided the draft assessment criteria and process to the Department prior to the public consultation process. The Department's comments were received and considered as part of the draft review process. The Conservation Commission engaged with key stakeholders including the Conservation Council of Western Australia and the Western Australia Forest Alliance to provide formal updates and briefings.</p>
<p>3.3 Where the Conservation Commission advises the Department that it has assessed that land not currently classified as old-growth forest should be reclassified as old-growth forest, the Department will amend the Department's corporate database in accordance with the Conservation Commission's assessment. (<i>in year 1 & ongoing</i>)</p>	<p>The assessment criteria and process were completed in December 2005. The Conservation Commission has commenced its old-growth forest reclassification assessments and will provide advice to the Department. No advice on this was provided during 2005.</p>
<p>3.4 The Forest Products Commission will not undertake any timber production in any area:</p> <p>3.4.1 referred to in Action 3.2.1; or</p> <p>3.4.2 for which the Conservation Commission has determined an assessment of whether the area should be classified as old-growth forest on the Department's corporate database to be warranted;</p> <p>until the Conservation Commission has assessed the area and confirmed the classification of that area in the Department's corporate database as other than old-growth forest. (<i>on plan commencement & ongoing</i>)</p>	<p>Areas relevant to Action 3.2.1 that are identified in coupe planning are excluded from timber production. The Conservation Commission has not identified any areas under 3.4.2.</p> <p>One incident was recorded in the Forest Products Commission's EMS where an area of 0.1 hectare of mapped old growth was harvested. This occurred in a regrowth karri thinning operation. The area mapped as old growth was karri regrowth from a previous harvesting operation and was thinned as part of the adjacent thinning operation. The area has since been correctly demarcated and awaits formal assessment for old growth status.</p>

Biological diversity

<p>4. DIVERSITY IN VEGETATION STRUCTURE</p> <p>The plan proposes the following Actions at the landscape scale for the purpose of seeking to conserve biodiversity through a diverse representation and distribution of forest structures and understorey seral stages through time:</p>	
<p>4.1 The Department will conduct its operations in a manner that has regard to Goals for Understorey Structural Diversity, which are to be:</p> <p>4.1.1 prepared by the Department with public consultation; and</p> <p>4.1.2 submitted to the Conservation Commission for advice and approved by the Minister for the Environment by 31 December 2005, when they will take effect.</p>	<p>Work is continuing on the development of these goals. The Department's Fire Management Services Branch is taking a lead role in the development of these goals. Fire Management Services Branch is working with the Department's Science Division to develop a methodology for fire management that will provide for a diversity of fire treatments to promote and maintain biodiversity as per the Department's <i>Fire Management Policy</i> (Policy 19).</p>
<p>4.2 The Department will monitor its operations to identify the extent to which the Goals for Understorey Structural Diversity are being achieved and publish a report of the results of that monitoring. (<i>in year 5 & ongoing</i>)</p>	<p>This action will be reported against after 2008.</p>
<p>5. INTEGRATING FOREST MANAGEMENT</p> <p>The plan proposes the following Actions for the purpose of seeking to promote integrated management across all land categories at the whole of forest, landscape and operational scales:</p>	
<p>5.1 The Conservation Commission will cooperate with the Department of Industry and Resources and mining and petroleum companies in relation to forest management and encourage them to act in a manner that is consistent with the plan. (<i>in year 1 & ongoing</i>)</p>	<p>The Conservation Commission works with the Department of Industry and Resources and mining and petroleum companies with regard to any project involving land vested in the Conservation Commission, including forest areas. The Conservation Commission endeavours to ensure projects are undertaken having regard to best practice environmental management, including forest management in accordance with the FMP.</p>
<p>5.2 The Conservation Commission will prepare by 31 December 2004, guidelines for the preparation of other management plans in a manner that integrates with existing management plans, including this plan.</p>	<p>Early in their development it was recognised that these guidelines will be more useful if broadened to address management for terrestrial conservation reserves throughout the state, rather than just the south-west forest region. Accordingly, the scope has been expanded so that the guidelines will provide a strategic framework for planning the management of conservation reserves across Western Australia. Interim guidelines are expected to be released in mid 2006.</p>
<p>6. OPERATIONS AND THE CONSERVATION OF FLORA</p> <p>The plan proposes the following Actions at the operational scale for the purpose of seeking to reduce the extent of the threat to the diversity and abundance of flora from silvicultural operations that are designed to reduce competition between understorey and commercial species:</p>	
<p>6.1 The Department will undertake the measures identified in Appendix 13 (which relate to the protection of significant flora values). (<i>in year 2 & ongoing</i>)</p>	<p>The significant flora values identified in Appendix 13 are managed according to management principles outlined in Regional Wildlife Management Programs (Flora). The Department has revised planning checklists for disturbance activities to address management requirements for significant flora values.</p>

Biological diversity

<p>6.2 The Forest Products Commission and its agents will conduct its silvicultural operations (<i>on plan commencement & ongoing</i>):</p> <p>6.2.1 in accordance with the Department's Silviculture Guidelines; and</p> <p>6.2.2 prior to the formal incorporation of the amendments identified in Appendix 5 into those Guidelines, in a manner that is consistent with those amendments.</p>	<p>Approximately 5,870 hectares of native jarrah forest was tree marked during 2005. Five incidents directly related to implementation of the Department's Silvicultural Guidelines were recorded in the Forest Products Commission's EMS. Two of these related to general tree marking standards and one to commencing harvesting in the absence of completed tree marking. The other two related to jarrah gaps being in excess of 10 hectares one of which was a carryover from 2004. Eleven related incidents concerning inadequate crop tree protection were also recorded in the Forest Products Commission's EMS.</p>
<p>7. RETENTION OF HABITAT ELEMENTS IN HARVESTING OPERATIONS</p> <p>The plan proposes the following Actions at the landscape scale for the purpose of seeking to prevent any species moving to a higher category of threat or, in particular, declining to irretrievably low levels as a result of management actions:</p>	
<p>7.1 The Department will publish a map by 1 January 2004 showing locations of indicative fauna habitat zones.</p>	<p>This action has been completed.</p>
<p>7.2 The Department may change the locations and areas of indicative fauna habitat zones in a manner that:</p> <p>7.2.1 has regard to the criteria specified in Appendix 4, where the change occurs prior to the approval of the Guidelines referred to in the following paragraph (<i>on plan commencement & end of year 1</i>); and</p> <p>7.2.2 is in accordance with Guidelines for the Selection and Management of Fauna Habitat Zones, (<i>in year 2 & ongoing</i>) which are to be:</p> <ul style="list-style-type: none"> • prepared by the Department with public consultation; and • submitted to the Conservation Commission for advice and approved by the Minister for the Environment by 31 December 2004, when they will take effect and supercede Appendix 4. 	<p>The Department has been complying with the criteria as specified in Appendix 4. The final location and size of zones is being progressively determined in advance of disturbance operations. The Department refers the proposed final location and size of fauna habitat zones (FHZ) to the Conservation Commission for their advice prior to implementation in the field. The Conservation Commission receives advice from the voluntary conservation movement. As at 31 December 2005, 18 FHZ had been finalised. An updated map of indicative and final FHZ (completed as at 30 June 2005) was published on NatureBase.</p> <p>A draft process for the component of the guidelines dealing with FHZ selection is near finalisation, however, further work is required on drafting the management component. An audit of FHZ finalisation during the year identified and made recommendations on a number of issues with the finalisation process that will be addressed in the guideline.</p> <p>It is anticipated that the selection component of the guidelines will be released for public comment by the end of 2007.</p>
<p>7.3 By 30 June 2004 the Department, in consultation with the Conservation Commission, will complete a review of the location of indicative fauna habitat zones having regard to the criteria specified in Appendix 4, with a view to making appropriate changes to those locations under Action 7.2.1.</p>	<p>This Action has been completed.</p>

Biological diversity

<p>7.4 The Department and Forest Products Commission will conduct their operations in indicative fauna habitat zones, and in fauna habitat zones established under Appendix 4 and the Guidelines for the Selection and Management of Fauna Habitat Zones <i>(on plan commencement & ongoing)</i>:</p> <p>7.4.1 in a manner that has regard to the requirements set out in Appendix 4, where the operation occurs prior to the approval of the Guidelines; and</p> <p>7.4.2 in accordance with the Guidelines after they are approved and supercede Appendix 4.</p>	<p>The Department and Forest Products Commission conducted their operations in a manner having regard to the requirements set out in Appendix 4. Two incidents where incursions into Fauna Habitat Zones occurred were recorded in the Forest Products Commission's EMS. The first involved the harvesting of an area of 3.2 hectares of jarrah forest which highlighted a demarcation inadequacy that has since been addressed. The second involved the chemical (roundup) notching of approximately 10 hectares of a regrowth jarrah stand as part of an adjacent non commercial thinning operation.</p>
<p>8. THREATENED AND PRIORITY SPECIES AND ECOLOGICAL COMMUNITIES The plan proposes the following Actions at the landscape scale for the purpose of seeking to protect, and assist the recovery of, threatened and priority species of flora and fauna and ecological communities:</p>	
<p>8.1 The Department will maintain a list identifying threatened and priority species of flora and fauna and threatened ecological communities. (Threatened species and communities are those under risk of extinction. Priority species and communities are those that may be threatened but for which there are insufficient survey data, and those that are rare but not threatened). <i>(on plan commencement & ongoing)</i></p>	<p>The Department has maintained lists of threatened and priority species of flora and fauna and threatened ecological communities. The lists of flora and fauna were updated in February 2005 and the lists of threatened and priority ecological communities are constantly maintained.</p>
<p>8.2 The Department and the Forest Products Commission will conduct their operations having regard to the Department's <i>Conservation of Endangered and Specially Protected Fauna in the Wild</i> policy and <i>Conservation of Threatened Flora in the Wild</i> policy. <i>(on plan commencement & ongoing)</i></p>	<p>The Department and Forest Products Commission conducted their operations having regard to the Department's policies referred to in this action. No incidents were reported.</p>
<p>8.3 The Department and Forest Products Commission will revise planning checklists to identify actions to be taken in specified circumstances in which declared rare flora species, threatened ecological communities, and other significant flora identified in Appendix 13 may be disturbed by their operations. <i>(in year 1 & end of year 2)</i></p>	<p>The Department has revised checklists and expanded the pre-operations checklist to address these issues for a range of disturbance operations. The checklist has been tested in field operations and is now close to completion.</p> <p>The Forest Products Commission revised its pre harvesting planning checklist in 2004 to address this Action.</p>
<p>8.4 The Forest Products Commission and the Department will undertake operations in accordance with guidelines for operations in the presence of fauna, to be developed as part of the Fauna Distribution Information System, which is to be completed by the Forest Products Commission <i>(on plan commencement & end of year 1)</i>:</p> <p>8.4.1 to the satisfaction of the Department; and</p> <p>8.4.2 in consultation with the Conservation Commission <i>(end Year 2)</i>.</p>	<p>The Forest Products Commission and the Department applied the preliminary version of the Fauna Distribution Information System (FDIS) in the planning and approval processes for timber harvesting operations. FDIS documentation has been redrafted by the Forest Products Commission and submitted to the Department for comment. The Department is currently considering the documentation before consulting with the Conservation Commission. Completion is expected in 2008.</p>

Biological diversity

<p>8.5 (Plantations): The Forest Products Commission will advise the Department of its harvesting and management activities within plantations: 8.5.1 where those activities may impact on threatened species and threatened ecological communities, agreed protection measures will be implemented. <i>(on plan commencement & ongoing)</i></p>	<p>The Forest Products Commission is currently conforming to this via the use of Preharvest Checklists (FPC444).</p>
<p>8.6 The Department will develop and implement recovery plans for selected threatened species and ecological communities, including: 8.6.1 the Western Shield fox baiting program (which seeks to reduce predation pressure on threatened and priority species of fauna). <i>(on plan commencement & ongoing)</i></p>	<p>There are 10 published and 3 draft Interim Recovery Plans (IRPs) for declared rare flora occurring in State forest or timber reserves within the area to which the FMP applies. The management of a further 15 declared rare flora which occur on these lands are covered in published regional flora management plans, and 4 in draft regional flora management plans. One IRP has recently been updated and one completed for Threatened Ecological Communities (TECs) that occur on land covered by the FMP. Another IRP for a Priority 1 community is also in late draft. Twelve Recovery Plans for threatened fauna are also current for land to which the FMP applies.</p>

Biological diversity

9. INCREASING KNOWLEDGE	
<p>The plan proposes the following Actions at the whole of forest scale for the purpose of seeking to develop an improved understanding of the biodiversity of forest regions and the response of forest ecosystems to natural and human induced disturbance, with a view to improving forest management practices:</p>	
<p>9.1 The Department will undertake biological surveys, which will be:</p> <p>9.1.1 of priority areas determined in consultation with the Conservation Commission (<i>by year 5 & ongoing</i>); and</p> <p>9.1.2 used, where appropriate, to assist in evaluating the extent to which biodiversity is being conserved and the need for any review of the reserve system (<i>as required & as required</i>).</p>	<p>No action during 2005. This action will be reported against by 2008.</p>
<p>9.2 The Department will:</p> <p>9.2.1 continue to monitor the effect of disturbance from timber harvesting on fauna and flora in the Kingston study² area (<i>on plan commencement & ongoing</i>);</p> <p>9.2.2 implement the species, community and process monitoring program, FORESTCHECK (<i>on plan commencement & ongoing</i>);</p> <p>9.2.3 conduct a monitoring trial using a specific species sampling approach and review the comparative effectiveness of this and the monitoring protocol adopted for FORESTCHECK since its inception in 2001 (<i>In year 2 & ongoing</i>); and</p> <p>9.2.4 maintain a research program on ecologically sustainable forest management which is prepared in a manner that has regard to advice from the Conservation Commission's Research Advisory Committee (<i>in year 1 & ongoing</i>).</p>	<p>Trapping programs for vertebrate and invertebrate fauna were re-activated to monitor responses 10 years after completion of the harvesting operations. Data will be used to describe trends in species composition and abundance following harvesting and silvicultural burning.</p> <p>Ten additional FORESTCHECK monitoring grids were established in Jarrah forests within the eastern part of Wellington District bringing the total number of grids to 37. The 2004-2005 FORESTCHECK Report of Progress was published on the Naturebase website in November 2005 (http://www.naturebase.net/content/view/2388/1510/).</p> <p>The Department's Science Division continued to implement a range of research addressing aspects of sustainable forest management including forest health, fire, silviculture and hydrology. Individual research project summaries are provided in the Annual Research Activity Report published by the Science Division in July 2005. New projects were initiated to monitor stream invertebrate biodiversity (FMP KPI 20), and to identify appropriate seed collection zones for plant species used in rehabilitation operations.</p>

² A major interdisciplinary research study by the Department located in jarrah forest in Kingston and surrounding forest blocks north-east of Manjimup, to examine the impact of native forest silvicultural practices on flora and fauna.

Productive capacity

FOREST MANAGEMENT PLAN ACTION	IMPLEMENTATION STATUS
10. MAINTAINING FOREST AREA	
The plan proposes the following Actions for the purpose of seeking to maintain the net area of forested land:	
<p>10.1 The Conservation Commission and the Department will make submissions in relation to development proposals forwarded to them for comment or advice, <i>(as required & as required)</i> with a view to:</p> <p>10.1.1 seeking to reduce the permanent loss of forested areas as a result of development;</p> <p>10.1.2 seeking the replacement of forested areas permanently lost to development;</p> <p>10.1.3 promoting the construction of infrastructure such as roads, pipelines and other utilities at common locations, such as infrastructure corridors; and</p> <p>10.1.4 reducing the impact of mining and petroleum operations on forested areas with a high productive capacity for timber production.</p>	<p>Seeking to avoid loss of forest values/areas remains a primary objective when dealing with resource developers.</p> <p>The Conservation Commission and Department seek offsets that replace values foregone where loss cannot be avoided.</p> <p>The co-location of infrastructure remains a primary consideration in the environmental impact assessment process.</p> <p>The Department discourages development in highly productive timber areas, however, significant rights remain under State Agreement Acts.</p>
<p>10.2 The Department will, where reasonable and practicable, construct roads in a manner and at a location that will service multiple needs. <i>(on plan commencement & ongoing)</i></p>	<p>New roads are constructed where funding permits and according to recommendations in management plans. No significant new road proposals commenced or progressed during 2005. The upgrade of Claymore Road in Blackwood District, South West Region was a major project during 2005.</p>
<p>10.3 The Department will seek to progressively rehabilitate redundant roads. <i>(by year 5 & ongoing)</i></p>	<p>During 2005 the Department initiated a project to review the legal status of undedicated roads in State forest and timber reserves and also commenced a road classification project. It is expected that results from these studies will assist in the identification of redundant roads to be progressively rehabilitated.</p> <p>This action will be reported against by the end of 2008.</p>

Productive capacity

<p>10.4 (Plantations): The Forest Products Commission will maintain the minimum area of plantation estate required to meet State Agreement Act supply requirements by:</p> <p>10.4.1 replanting pines in all suitable areas of State forest and freehold (fee simple) land held in the name of the Executive Director that have previously been planted with pines and have been clearfelled, except at Gngara, Peel, Hamel and other areas determined consistently with the agreement ratified under the Wood Processing (Wesfi) Agreement Act 2000 (<i>on plan commencement & ongoing</i>); and</p> <p>10.4.2 establish new plantations on appropriate cleared land to replace any plantation areas that are clearfelled but not replanted with plantation species (<i>as required</i>).</p>	<p>The Forest Products Commission is undertaking this replanting program at a rate of approximately 1,500 hectares per annum. An increase in the replanting program is expected in 2007 to 2009 to address a backlog which has developed recently due to seasonal and operational constraints.</p> <p>A section of Hamel plantation was replanted under agreement with the Department.</p>
---	--

<p>11. SUSTAINED YIELD</p> <p>The plan proposes the following Actions for the purpose of seeking to provide for timber production of jarrah and karri sawlogs on a sustained yield basis and to maintain the quality of the sustained yield calculations for the next plan period:</p>	
<p>11.1 The average annual yield of logs, calculated over the 10 year life of the plan, shall not exceed the maximum volumes stipulated in Tables 3 and 4, and given above for wandoo, blackbutt and sheoak. (<i>in year 1 & end of year 10</i>)</p>	<p>The average annual yield of sawlogs for jarrah and karri in the plan is 131,000 cubic metres and 54,000 cubic metres respectively. The actual removals totalled approximately 133,670 cubic metres for jarrah and 55,290 cubic metres for karri. Although the actual removals were slightly in excess of the allowable annual average they were well within the KPI performance target of no more than 10 per cent more than the annual average. The total volume harvested for 2004 and 2005 combined was approximately 251,730 cubic metres for jarrah and 108,280 cubic metres for karri compared to an allowable level of 262,000 cubic metres and 108,000 cubic metres respectively.</p> <p>For karri bole logs other than first and second grade logs the FMP provides for 117,000 cubic metres to be produced where as the actual produced was approximately 136,000 cubic metres. Forest Products Commission systems do not currently differentiate between the quantity of logs produced as other bole volume and the quantity produced from the crown of the tree. The FMP indicates that non-bole logs (crown logs) can add up to an additional 10 per cent of the gross bole volume. The inclusion of both of these two sources of other bole logs is the likely reason for the higher actual production. Refinement of the process for differentiating between bole and non-bole volume requires consideration in consultation with the Department.</p>

Productive capacity

<p>11.2 In addition to the yield referred to in 11.1, the Forest Products Commission may contract for the removal and sale of forest products of species other than jarrah, karri, marri, blackbutt, wandoo and sheoak that become available in small quantities from operations designed to produce the yield referred to in 11.1 or as a result of other operations such as mining. <i>(as required & as required)</i></p>	<p>As a consequence of planned mining in a section of the tuart forest near Ludlow the Forest Products Commission sold a total of 1,527 cubic metres of tuart sawlogs and bole sawlogs.</p>
<p>11.3 The Forest Products Commission will prepare annual timber harvesting plans that are to be <i>(on plan commencement & ongoing)</i>:</p> <p>11.3.1 developed in consultation with, and to the requirements of, the Department;</p> <p>11.3.2 consistent with the allowable timber yields referred to in Action 11.1; and</p> <p>11.3.3 made publicly available.</p>	<p>Indicative timber harvest plans were prepared by the Forest Products Commission in consultation with the Department for each forest region for 2005. The total projected volumes made available under these plans were consistent with the allowable timber yields. The indicative plans were made publicly available and the Forest Products Commission advertised where harvesting was to take place and undertook local consultation.</p>
<p>11.4 The Forest Products Commission and the Department will:</p> <p>11.4.1 monitor the volume of all timber log categories removed from native forest in each year, separately recording for each of the commercial species the equivalent volume of <i>(in year 1 & ongoing)</i>:</p> <ul style="list-style-type: none"> • first and second grade sawlogs; • lower grades of sawlogs; and • residue logs; and <p>11.4.2 periodically audit the grading and removal of sawlogs <i>(in year 1 & ongoing)</i>.</p>	<p>The Forest Products Commission has recorded the volume of timber removed in the Logging Operations Information System (LOIS). Monitoring of these volumes by the Department is underway. During 2005, 34 inventory plots were established in harvest coupes to monitor sawlog removals and strategic inventory. Three related incidents were recorded in the Forest Products Commission's EMS where inventory plots were harvested without notice to the Department's Forest Management Branch.</p>
<p>11.5 The Department will prepare rolling three-year indicative timber harvesting plans <i>(in year 2 & ongoing)</i> that are to be:</p> <p>11.5.1 developed in consultation with the Forest Products Commission;</p> <p>11.5.2 consistent with the allowable timber yields referred to in Action 11.1; and</p> <p>11.5.3 made publicly available.</p>	<p>Development of the three-year plan was well progressed during 2005. A final three year indicative harvest plan was released for public comment in the first half of 2006.</p>
<p>11.6 The Forest Products Commission will conduct its silvicultural operations:</p> <p>11.6.1 in accordance with the Department's Silviculture Guidelines <i>(on plan commencement & ongoing)</i>; and</p> <p>11.6.2 prior to the formal incorporation of the amendments identified in Appendix 5 into those Guidelines, in a manner that is consistent with those amendments <i>(on plan commencement & ongoing)</i>.</p>	<p>Approximately 5,870 hectares of native jarrah forest was tree marked during 2005. Five incidents directly related to implementation of the Department's Silvicultural Guidelines were recorded in the Forest Products Commission's EMS. Two of these related to general tree marking standards and one to commencing harvesting in the absence of completed tree marking. The other two related to jarrah gaps being in excess of 10 hectares one of which was a carryover from 2004. Eleven related incidents concerning inadequate crop tree protection were also recorded in the Forest Products Commission's EMS.</p>

Productive capacity

<p>11.7 Any amendment to the Silviculture Guidelines following the incorporation of the amendments identified in Appendix 5 into those Guidelines will be prepared by the Department with public consultation, submitted to the Conservation Commission for advice and approved by the Minister for the Environment before they take effect. <i>(as required & as required)</i></p>	<p>The amendments to the Silviculture Guidelines identified in Appendix 5 were incorporated into the existing guidelines. No amendments were made to the guidelines during 2005, however, amendments for the jarrah and karri guidelines are being progressed.</p>
<p>11.8 The Department and the Forest Products Commission will monitor and record the areas over which each different silvicultural treatment is achieved in each year. <i>(on plan commencement & ongoing)</i></p>	<p>Monitoring and recording of the areas over which each different silvicultural treatment is implemented is ongoing. The Department's Forest Management Branch captures this information electronically in its Silrec GIS program and results from 2005 will be reported in the Department's 2005/06 Annual Report. No incidents were recorded.</p>
<p>11.9 The Forest Products Commission will, where practicable and economically feasible, enter into contracts that are not confined to the supply of first and second grade sawlogs. For example, the Forest Products Commission may enter into contracts for the sale of bole sawlogs. When the Forest Products Commission enters into such a contract, the Forest Products Commission and the Department will calculate the equivalent volume of first and second grade sawlogs which would be derived from the volume of timber taken under the contract. <i>(on plan commencement & ongoing)</i></p>	<p>The Forest Products Commission has entered into contracts with three customers for the sale of jarrah bole sawlogs. Approximately 19,600 cubic metres of jarrah bole logs was produced for the 2005 calendar year. The equivalent volume of first and second grade sawlogs has been included in the volume figures provided against action 11.1 above.</p> <p>In addition the Forest Products Commission has entered into contracts for the sale of third grade karri and jarrah sawlogs, jarrah bole residue sawlogs, marri sawlogs and low grade feature sawlogs. During 2005 the respective volumes of these products sold was approximately 5,400 cubic metres, 15,900 cubic metres, 13,500 cubic metres, 3,800 cubic metres and 900 cubic metres.</p>
<p>11.10 The Department may use forest produce that becomes available for use from the carrying out of operations to which section 33(1)(cb) of the CALM Act applies for the purposes of making improvements to any land to which the CALM Act applies. <i>(as required & as required)</i></p>	<p>This provision is utilised on an ongoing basis.</p>
<p>11.11 The Department will continue to refine the data and methodology used for the sustained yield calculations <i>(on plan commencement & ongoing)</i> by:</p> <p>11.11.1 Maintaining and enhancing the quality and coverage of the data sets, and the methodology, used in sustained yield calculations. In doing this the Department will have regard to the recommendations of the Ferguson Panel's Stage 1 and 3 reports (Ferguson et al. 2001, 2003).</p>	<p>Update of inventory data commenced in 2004 through re-measurement and mapping programs were maintained.</p>

Productive capacity

12. EXOTIC SPECIES ON STATE FOREST AND TIMBER RESERVES The plan proposes the following Action for the purpose of seeking to achieve the optimum yield in production on State forest and timber reserves planted with exotic species consistent with the satisfaction of long-term social and economic needs:	
12.1 (Plantations): The Forest Products Commission will harvest exotic species on State forest and timber reserves to supply up to 1.2 million cubic metres per annum of various log products to industry. <i>(on plan commencement & ongoing)</i>	The total volume of exotic plantation species delivered in 2005 was below 1.2 million cubic metres being approximately 806,000 cubic metres of softwoods and 6,700 cubic metres of hardwoods. These figures include deliveries from land held in the name of the Department's Executive Director.
13. OTHER FOREST PRODUCE The plan proposes the following Actions for the purpose of seeking to manage the removal of forest produce, other than sawlogs and residue logs, in a manner that, so far as is practicable and sustainable, satisfies public demand for that produce:	
13.1 The Department will: <ul style="list-style-type: none"> 13.1.1 regulate the supply of forest produce, other than sawlogs, residue logs, and craftwood ('other forest produce') through the administration of licensing legislation <i>(on plan commencement & ongoing)</i>; 13.1.2 maintain and, where appropriate, prepare guidelines for the management of other forest produce <i>(by year 5 & ongoing)</i> that: <ul style="list-style-type: none"> • are to be periodically reviewed, with public consultation, and • in the case of new guidelines or revisions to guidelines, are to be submitted to the Conservation Commission for advice and approved by the Minister for the Environment before they take effect; 13.1.3 where reasonable and practicable, monitor supply patterns for signs of non-sustainability <i>(by year 5 & ongoing)</i>; and 13.1.4 facilitate the salvage of forest produce generated by management actions the primary purpose of which is not timber production, or natural events where salvage activities can contribute to rehabilitation and do not significantly increase the level of disturbance or the risk of environmental impacts to the forest area <i>(as required & as required)</i>. 	<p>The supply of forest produce was regulated through existing licensing systems. Amendments to the <i>Forest Management Regulations 1993</i> relating to the administration and management of apiary sites have been approved and are in the drafting stage. This follows outcomes of the Competition policy review of the CALM Act. The amendments will provide for the trading of apiary sites.</p> <p>No guidelines were commenced during year two.</p> <p>Action 13.1.3 will be reported against after 2008.</p> <p>The Department facilitated salvage of logs from a significant windblow event at Collie during 2005. The Department has commenced a project to clarify the requirements for salvaging forest produce and forest products generated by activities other than timber production.</p>
13.2 The Department and the Forest Products Commission will work together to review the regulation of access to craftwood <i>(in year 1 & end of year 1)</i> , which: <ul style="list-style-type: none"> 13.2.1 if considered reasonable and practicable will be through production contracts issued under the FP Act for areas of State forest and timber reserves (whether or not those areas are identified in timber harvesting plans proposed by Action 11.3). 	During 2005 access to craftwood and feature grade logs continued through the use of auctions. Access to craftwood was also available through the issue of minor production contracts.

Productive capacity

<p>13.3 The Department will conduct research and undertake public consultation with a view to determining the environmental management requirements for the production of domestic firewood. <i>(in year 2 & ongoing)</i></p>	<p>A pilot study investigating the removal of firewood in the Swan Region has been undertaken. The results suggest that a significant amount of firewood is being removed without a permit, or without strict compliance with permit conditions. A significant amount of firewood removal (more than 30 per cent) was from outside of gazetted firewood areas. When finalised, the report will be used to develop management strategies to address the illegal removal.</p>
<p>14. WEEDS, PESTS AND DISEASES</p>	
<p>The plan proposes the following Actions at the operational scale for the purpose of seeking to reduce the impact of weeds, pests and diseases on the productive capacity of the forest:</p>	
<p>14.1 In addition to the measures referred to in Action 18.4, the Department will:</p> <p>14.1.1 establish a process for the identification and investigation of weed, pest and disease outbreaks that threaten productivity <i>(in year 2 & end of year 2)</i>; and</p> <p>14.1.2 where appropriate, prescribe measures in Silviculture Guidelines to limit the impact of weeds, pests and diseases on productivity <i>(as required & as required)</i>.</p>	<p>The Department continues to maintain records at a District level of “Declared” and major environmental weeds, including any new or significant weed incursions identified on land managed by the Department. There is no standard register in place within the Department. A scoping paper has been prepared on options for the development of a methodology and for the maintenance of an up-to-date register of forest condition; presence of weeds, pests and diseases of concern; and the status of their severity on State forest and timber reserves.</p>
<p>14.2 (Plantations): The Forest Products Commission will:</p> <p>14.2.1 maintain an early warning system for Sirex in pine plantations <i>(on plan commencement & ongoing)</i>; and</p> <p>14.2.2 monitor weeds, pests and diseases affecting productivity and, where reasonable and practicable, take measures to control them <i>(on plan commencement & ongoing)</i>.</p>	<p>The Forest Products Commission maintains a monitoring program for Sirex in pine plantations. It also has a more general monitoring program for other weeds, pests and diseases.</p>
<p>15. REGENERATION AND REHABILITATION OF DISTURBED FOREST</p>	
<p>The plan proposes the following Actions for the purpose of seeking to regenerate or rehabilitate disturbed forest so as to maintain the productive capacity, flora composition and structural attributes of that forest in the long term:</p>	
<p>15.1 The Forest Products Commission will conduct regeneration operations in a manner that:</p> <p>15.1.1 is in accordance with the Department's Silviculture Guidelines <i>(on plan commencement & ongoing)</i>; and</p> <p>15.1.2 prior to the formal incorporation of the amendments identified in Appendix 5 into those Guidelines, is consistent with those amendments <i>(on plan commencement & ongoing)</i>.</p>	<p>The Forest Products Commission conducts its regeneration operations in accordance with this Action item. There was one incident recorded in the Forest Products Commission's EMS associated with karri regeneration operations. This was of a minor nature involving planting technique.</p>

Productive capacity

<p>15.2 The Forest Products Commission will pursue additional markets for log categories that have traditionally been under-utilised, particularly lower grade jarrah and karri sawlogs and marri sawlogs. <i>(on plan commencement & ongoing)</i></p>	<p>The Forest Products Commission is actively seeking additional markets for lower grade log products.</p> <p>The Forest Products Commission has entered into contracts with three customers for the sale of jarrah bole sawlogs. Approximately 19,600 cubic metres of jarrah bole logs was produced for the 2005 calendar year. The equivalent volume of first and second grade sawlogs has been included in the volume figures provided against action 11.1 above.</p> <p>In addition the Forest Products Commission has entered into contracts for the sale of third grade karri and jarrah sawlogs, jarrah bole residue sawlogs, marri sawlogs and low grade feature sawlogs. During 2005 the respective volumes of these products sold was approximately 5,400 cubic metres, 15,900 cubic metres, 13,500 cubic metres, 3,800 cubic metres and 900 cubic metres.</p>
<p>15.3 The Department will cooperate with industry and Government agencies in the rehabilitation of areas subject to mining and petroleum activities, including extraction of gravel and sands, by:</p> <p>15.3.1 recommending, where practicable and economically feasible, the inclusion of a formal requirement for the rehabilitation of areas subject to those activities <i>(as required & as required)</i>.</p>	<p>Formal rehabilitation requirements are consistently applied in areas subject to mining and petroleum activities, including extraction of gravel and sands. The Department accepted back from Alcoa responsibility for management of 975 hectares of their mining lease, which included rehabilitated bauxite mined areas. The Department continues to liaise with mining and industry groups to progressively rehabilitate pits.</p> <p>The Department's and the Forest Product Commission's new gravel pits for timber harvesting are recorded within the Silvicultural Recording System (SILREC). Inventories of the legacy gravel pits were prepared in some Districts and will provide a basis for prioritizing and progressively rehabilitating pits. Rehabilitation of the Department's gravel pits is conducted in accordance with the Guidelines for the Management and Rehabilitation of Gravel Pits.</p>

Productive capacity

<p>15.4 (Plantations): The Forest Products Commission will:</p> <p>15.4.1 regenerate areas of plantation that are clearfelled and are to be replanted with exotic species, in accordance with the Forest Products Commission's Plantation Management Guidelines (<i>on plan commencement & ongoing</i>);</p> <p>15.4.2 rehabilitate the native vegetation in areas of plantation that are clearfelled and are not to be replanted with exotic species, in accordance with Guidelines for the Rehabilitation of Plantation Areas that are to be:</p> <ul style="list-style-type: none"> • developed by the Department with public consultation; and • submitted to the Conservation Commission for advice and approved by the Minister for the Environment before they take effect (<i>as required & as required</i>); and <p>15.4.3 where regeneration or rehabilitation operations do not result in regeneration or rehabilitation to a standard specified in the relevant guidelines, investigate the cause and if necessary, repeat the regeneration or rehabilitation operations in order to achieve that standard (<i>on plan commencement & ongoing</i>).</p>	<p>All plantations replanted in 2005 were established as per the Forest Products Commission's Plantation Management Guidelines. A total area of 1,999 hectares of plantation was clearfelled on State forest with 1,055 hectares replanted.</p> <p>The Department has not commenced the development of the Guidelines for the Rehabilitation of Plantation Areas, however, the Department has prepared a draft guideline for rehabilitation of a specific area in the Murray Valley plantation.</p>
<p>16. MANAGEMENT OF REGROWTH STANDS The plan proposes the following Actions for the purpose of seeking to realise the productive capacity of the forest:</p>	
<p>16.1 The Forest Products Commission and the Department will:</p> <p>16.1.1 maintain records of the history of silvicultural treatments applied to stands of trees (<i>on plan commencement & ongoing</i>);</p> <p>16.1.2 develop schedules of future silvicultural treatments for stands of trees to promote growth of timber that can be used to produce sawlogs (<i>on plan commencement & ongoing</i>);</p> <p>16.1.3 assess stand development when silvicultural treatments are scheduled, with a view to determining whether those treatments are then required (<i>on plan commencement & ongoing</i>);</p> <p>16.1.4 undertake or reschedule those proposed silvicultural treatments, according to the assessment referred to in Action 16.1.3 (<i>on plan commencement & ongoing</i>); and</p> <p>16.1.5 report to the Conservation Commission every two years after the commencement of the plan on the extent to which these scheduled silvicultural treatments have been undertaken (<i>in year 2 & ongoing</i>).</p>	<p>The spatial extent and silvicultural objective of treatments in 2005 has been recorded. The Department's Forest Management Branch captures this information electronically in its SILREC database³ and the statistics are being compiled for reporting in the Department's 2005/06 Annual Report (http://www.naturebase.net/).</p> <p>The Department has commenced stratification of regrowth stands to assist long-term scheduling of silvicultural treatments. No rescheduling of proposed silvicultural treatments has occurred to date.</p>

³ The SILvicultural RECORDing system (SILREC) is the principal record system used for harvesting and post-harvest silvicultural treatments. SILREC is used to record operations, to program future activities that are required, to provide reports and provide an input source for other Departmental systems.

Ecosystem health and vitality

FOREST MANAGEMENT PLAN ACTION	IMPLEMENTATION STATUS
<p>17. FIRE</p> <p>The plan proposes the following Actions at the whole of forest and landscape scale for the purpose of seeking to use and respond to fire in a manner that:</p> <ul style="list-style-type: none"> • optimises the maintenance of forest ecosystem health and vitality; • promotes the conservation of biodiversity; • controls adverse impacts of fire on the social, cultural and economic values of land managed by the Department and adjoining land; and • minimises the risk of smoke emanating from prescribed burns impacting on population centres and other sensitive areas. 	
<p>17.1 The Department will:</p> <p>17.1.1 maintain a competent fire management, suppression and response capability (<i>on plan commencement & ongoing</i>);</p> <p>17.1.2 prepare and maintain a fire management plan and smoke management guidelines (<i>in year 1 & ongoing</i>);</p> <p>17.1.3 undertake an annual prescribed burning program in a manner that:</p> <ul style="list-style-type: none"> • is in accordance with the fire management plan; • is in accordance with the smoke management guidelines; • has regard to the Goals for Understorey Structural Diversity referred to in Action 4.1; and • considers any special vulnerability of fauna and flora known to exist in a particular area to burning in that area (<i>on plan commencement & ongoing</i>); and <p>17.1.4 consult with stakeholders and interested community members in a manner that seeks to develop community understanding of and support for, and enable constructive discussions and deliberations on, the planning and implementation of prescribed burning and other fire management programs (<i>on plan commencement & ongoing</i>).</p>	<p>Actions 17.1.1, 17.1.2. 17.1.3 are implemented on an ongoing basis.</p> <p>Consultation with stakeholders was undertaken for the Spring and Autumn burning program. During the year work was undertaken to develop a three-year (six-season) burn plan for public consultation.</p>

Ecosystem health and vitality

<p>17.2 The Forest Products Commission will:</p> <p>17.2.1 undertake an analysis of the risk from fire to its native timber production resources (<i>in year 2 & end of year 2</i>); and</p> <p>17.2.2 provide to the Department funding sufficient to enable the Department to control the risk to acceptable levels, so far as is reasonable and practicable (<i>on plan commencement & ongoing</i>).</p>	<p>In 2004 the Forest Products Commission with assistance from the Department commenced an analysis of the risk from fire to the karri regrowth resource. This analysis is anticipated to be completed in 2006. Resources within the Department have not been able to be allocated to assist the Forest Products Commission in commencing the analysis of the jarrah regrowth resource to date.</p> <p>The Forest Products Commission provided funds to the Department for fire protection associated with timber resources.</p>
<p>17.3 The Department and the Conservation Commission will:</p> <p>17.3.1 participate in the proposed public review of fire management by the Environmental Protection Authority (<i>on plan commencement & end of year 1</i>); and</p> <p>17.3.2 incorporate the recommendations made in the review that are endorsed by the Minister for the Environment into the Department's fire management policy, plan (see Action 17.1.2) and fire management guidelines (<i>in year 2 & end of year 2</i>).</p>	<p>The Minister for the Environment responded to the review of the Department's fire management by the Environmental Protection Authority (EPA) in August 2005. The Department subsequently completed the revision of the <i>Fire Management Policy</i> (Policy 19) incorporating comments received in public submissions and the EPA's recommendations into the policy. The <i>Fire Management Policy</i> was published on the Department's NatureBase website in October 2005.</p>
<p>17.4 (Plantations): The Forest Products Commission will:</p> <p>17.4.1 undertake an analysis of the risk from fire to its plantation timber production resources (<i>in year 2 & end of year 2</i>);</p> <p>17.4.2 undertake an analysis of the risk from fire emanating from its plantations moving into surrounding land (<i>in year 2 & end of year 2</i>); and</p> <p>17.4.3 cooperate with the Department and other organisations in seeking to control the risks to acceptable levels, so far as is reasonable and practicable (<i>on plan commencement & ongoing</i>).</p>	<p>Assessment and audit of the Forest Products Commission's plantation asset risk is still to be completed. The Forest Products Commission cooperates with the Department and other organisations to control the risks from fire associated with plantations as far as is reasonable and practicable.</p>
<p>18. WEEDS, PESTS AND DISEASES</p> <p>The plan proposes the following Actions at the operational scale for the purpose of seeking to:</p> <ul style="list-style-type: none"> • minimise, as far as is reasonable and practicable, the impact on the health and vitality of forest ecosystems of pathogens and their associated diseases; • protect from infestation those areas currently free from <i>P. cinnamomi</i>; and • control weeds and pests in forest ecosystems. 	
<p>18.1 The Conservation Commission will develop a whole of Government policy framework for the management of dieback. (<i>in year 1 & end of year 1</i>)</p>	<p>The Conservation Commission continued to contribute to the development of a whole of Government policy for the management of dieback through the Government's dieback response group, established in March 2004.</p>

Ecosystem health and vitality

<p>18.2 The Department and the Forest Products Commission will conduct their operations having regard to the Management of Phytophthora and Disease Caused By It policy and in accordance with Volume 1 of the Phytophthora cinnamomi and Disease Caused by It Guidelines (<i>on plan commencement & ongoing</i>), which:</p> <p>18.2.1 will be reviewed by the Department with public consultation by 31 December 2008; and</p> <p>18.2.2 in the case of a new policy or Guidelines, or revisions to the policy or Guidelines, will be submitted to the Conservation Commission for advice and approved by the Minister for the Environment before they take effect (<i>as required & as required</i>).</p>	<p>The policy has been reviewed and the revised draft was made available for public consultation. In December 2004 the Conservation Commission resolved to accept the proposed final CALM Policy No.3 <i>Phytophthora cinnamomi</i> with the qualification that it be an interim policy. The Department has been complying with the intent of the revised policy and with the guidelines. The policy and guidelines will be reviewed during 2007 and the outcomes of the review will be reported.</p> <p>The Forest Products Commission has been conducting its operations having regard to the requirements of this action. Seven incidents related to this Action were recorded in 2005 in the Forest Products Commission's EMS. Three of these involved machines crossing blazed dieback boundaries, two related to inadequate clean down procedures and two related to the keeping of clean down records.</p>
<p>18.3 The Department will:</p> <p>18.3.1 prepare an inventory of sites where the impact of <i>P. cinnamomi</i> on the vegetation is known to have been high, with a view to setting priorities for the regeneration or rehabilitation of those areas (<i>in year 2 & end of year 5</i>); and</p> <p>18.3.2 further develop dieback spread and impact models, including models relating to the effects of new infections (<i>in year 5 & end of year 10</i>).</p>	<p>No action was taken during 2005.</p> <p>Action 18.3.2 will be reported against after 2008.</p>

Ecosystem health and vitality

<p>18.4 The Department will:</p> <p>18.4.1 maintain records of weeds, pests and diseases that are known to have a significant impact on the health and vitality of forest ecosystems <i>(on plan commencement & ongoing)</i>;</p> <p>18.4.2 develop and implement weed, pest and disease control programs <i>(on plan commencement & ongoing)</i>;</p> <p>18.4.3 eradicate, wherever reasonable and practicable, localised infestations of weeds, pests or diseases before they are securely established <i>(on plan commencement & ongoing)</i>;</p> <p>18.4.4 encourage the coordinated involvement of industry, the community and other land managers in addressing weeds, pests and diseases <i>(on plan commencement & ongoing)</i>; and</p> <p>18.4.5 investigate, and where reasonable and practicable take action to control the identified cause of, any significant decline in the health and vitality of forest ecosystems <i>(as required)</i>.</p>	<p>The Department has continued to maintain records at a district level of “Declared” and major environmental weeds occurring on land managed by the Department. The Department of Agriculture with the assistance of the Department, has conducted a pest animal survey for a range of lands within WA including land to which the FMP applies.</p> <p>The Department has continued to implement appropriate weed, pest and disease management practices and control programs. These include aerial fox baiting on nearly 2.1 million hectares as part of the Western Shield program, the control of feral pigs, rabbits, arum lily, bridal creeper, blackberry and other declared and priority environmental weeds, costing just over \$2 million per year (inclusive of salaries, operational costs and overheads only on land to which the FMP applies). Expenditure for control programs implemented in 2005 was similar to expenditure for 2004.</p> <p>The Department prioritises weed, pest and disease control operations according to the potential environmental impact, distribution and invasiveness of any given infestation. The opportunity to eradicate an infestation is considered as part of the prioritisation of infestations to be treated and within available resources.</p> <p>The Department continues to actively pursue sponsorship support from the mining industry for the Western Shield program on land to which the FMP applies. Alcoa supports the Western Shield program in the northern jarrah forest to the value of around \$120,000 per annum.</p> <p>The Department has initiated a project to develop a systematic forest health monitoring system.</p>
<p>18.5 The Forest Products Commission will, so far as is reasonable and practicable, maintain their nurseries free from weeds, pests and pathogens that could be transported into the forest with planting stock. <i>(on plan commencement & ongoing)</i></p>	<p>The Forest Products Commission has been conducting its nursery operations having regard to the requirements of this Action. Where necessary weeds are removed from planting stock prior to leaving the nursery. No related incidents were captured in the Plant Propagation Centre’s EMS.</p>

Ecosystem health and vitality

<p>18.6 (Plantations): The Forest Products Commission will:</p> <p>18.6.1 monitor for the presence of significant weeds, pests and diseases in plantations, and where reasonable and practicable undertake control measures (<i>on plan commencement & ongoing</i>);</p> <p>18.6.2 develop and implement weed, pest and disease control programs for identified weeds, pests and diseases (<i>on plan commencement & ongoing</i>);</p> <p>18.6.3 where there is an identified risk that plantation operations may result in transport of <i>Phytophthora cinnamomi</i>, conduct its operations having regard to the policy and in accordance with the Guidelines referred to in Action 18.2 (<i>on plan commencement & ongoing</i>); and</p> <p>18.6.4 take reasonable and practicable measures to control the spread of plantation species into adjacent native vegetation (<i>on plan commencement & ongoing</i>).</p>	<p>The Forest Products Commission responds to advice from the Department, Water Corporation and the Department of Agriculture regarding the presence of declared pests, weeds and diseases. However the process of information interchange regarding any concerns raised on the Preharvest Checklist (FPC444) requires further attention.</p> <p>Forest Products Commission operations manage dieback via Preharvest Checklists and associated Hygiene Plans.</p>
<p>19. DEVELOPING SELF-SUSTAINING ECOSYSTEMS The plan proposes the following Actions at the operational scale for the purpose of seeking to develop self-sustaining ecosystems of native species from regeneration or rehabilitation operations in native forest:</p>	
<p>19.1 The Department and the Forest Products Commission will undertake their regeneration or rehabilitation operations by (<i>on plan commencement & ongoing</i>):</p> <p>19.1.1 using natural regeneration where reasonable and practicable; or</p> <p>19.1.2 where natural regeneration is not reasonable and practicable, using seed collected locally or plants propagated from seed collected locally.</p>	<p>Allowing natural seed drop from a perimeter influence remains a primary objective in regeneration and rehabilitation for the Forest Products Commission and the Department. Where the area is too large to rely on perimeter influence seed drop alone, the Department has assisted by using seed collected locally or plants propagated from seed collected locally for more efficient regeneration operations.</p> <p>The Forest Products Commission's preferred option is to use natural regeneration in regeneration operations. This is largely achieved in jarrah regeneration establishment operations, however in karri regeneration operations the lack of seed availability has meant that seed has been collected locally and propagated in the Forest Products Commission's nursery for later planting.</p> <p>The Department has commenced a project to study genetic variability to better define "local" in the context of this action. Progress on this project, <i>Identification of seed collection zones for rehabilitation</i>, is reported in the Department's Science Division's <i>Annual Research Activity Report July 2005-June2006</i>, and later reports, available at: http://www.naturebase.net/component/option,com_docman/task,cat_view/gid,700/Itemid,711/.</p>

Ecosystem health and vitality

<p>19.2 The Department and the Forest Products Commission will report to the Conservation Commission annually as to the circumstances where local seed sources have not been used in their regeneration or rehabilitation operations. <i>(in year 1 & ongoing)</i></p>	<p>There were no known occasions when non local seed was used for regeneration in the Swan or Warren Regions. In the South West region there was one occasion where non local seed was used. Rehabilitation at the Cable Sands Ludlow mine site required a large volume of seed that was not available within local proximity of the site. The Department approved the use of seed sourced from tuart ecosystems along the Swan coastal plain to supplement local seed.</p> <p>The Department approved the Forest Products Commission using a non-local seed source to achieve regeneration of a karri coupe of approximately 10 hectares in area. Frost damage to initial plantings of a local seed source made infilling with the non-local seed source later in the planting season necessary.</p>
--	---

Soil and water

FOREST MANAGEMENT PLAN ACTION	IMPLEMENTATION STATUS
<p>20. SOIL An overall aim of the plan is to seek to protect soil and water resources on land to which the plan applies.</p>	
<p>20.1 The Forest Products Commission and the Department will conduct their operations involving the use of heavy machinery in a manner that:</p> <p>20.1.1 has regard to the requirements of Appendix 6 where the operation occurs prior to the approval of the Guidelines referred to in the following paragraph (<i>on plan commencement & end of year 2</i>); and</p> <p>20.1.2 is in accordance with the Soil and Water Conservation Guidelines which are to:</p> <ul style="list-style-type: none"> • be prepared by the Department with public consultation; • provide for the manner in which the requirements of Appendix 6 are to be met; and • be submitted to the Conservation Commission for advice and approved by the Minister for the Environment by 31 December 2005, when they will take effect and supercede Appendix 6 (<i>in year 2 & end of year 2</i>). 	<p>Implementation of the requirements of Appendix 6 and the <i>Interim Manual of Procedures for the Management of Soils Associated with Timber Harvesting in Native Forests</i> (Interim Manual), which superseded Appendix 6, have been major focuses for the three agencies during the first two years of the Plan. The Interim Manual, which provided the basis for implementation of Appendix 6, was developed in 2004 and reviewed and revised in 2005.</p> <p>Operations were conducted in accordance with these documents with considerable difficulty. Eleven incidents related to the implementation of the Interim Manual were recorded in the Forest Products Commission's EMS. Four of these incidents related to exceeding soil disturbance thresholds.</p> <p>Monitoring of soil disturbance during timber harvesting operations indicated that operations were generally undertaken well within the maximum allowable soil disturbance thresholds.</p> <p>Four incidents involving petrochemical spills were also recorded in the Forest Products Commission's EMS.</p> <p>The Soil and Water Conservation Guidelines were not completed on the schedule required and are still under development. The Department is addressing specific aspects of management not covered by existing guidelines through the development of Advisory Notes. It is the Department's intention that these Advisory Notes will ultimately be incorporated into the required guidelines.</p>
<p>20.2 The Department and the Conservation Commission will review the operation of the implementation of Appendix 6 and any Guidelines approved under Action 20.1.2, 12 months after the commencement of the plan. (<i>in year 2 & end of year 2</i>)</p>	<p>The requirements of Appendix 6 were reviewed, revised and re-issued during 2005 based on the experience of operations in 2004. There have been no other guidelines approved under Action 20.1.2 of the FMP that require reviewing.</p>
<p>20.3 The Department will investigate the development of a soil hazard assessment system to help planning to protect soil from damage. (<i>by year 5 & end of year 6</i>)</p>	<p>A consultant report on soil trafficability issues was completed during 2005. A contract for the mapping of soils in timber harvesting areas was initiated.</p>

Soil and water

<p>20.4 The Forest Products Commission and the Department will rehabilitate soil damaged in the course of their operations (<i>on plan commencement & ongoing</i>) by:</p> <p>20.4.1 identifying and mapping damaged soil; and</p> <p>20.4.2 undertaking rehabilitation work as soon as is reasonable and practicable after the completion of the operation.</p>	<p>There have been no instances during 2005 where soil damage has occurred as a result of a Department operation.</p> <p>Where required damaged soil was rehabilitated by the Forest Products Commission in conjunction with harvest coupe regeneration operations. For example in karri regeneration coupes, extensive ripping of landings was undertaken.</p> <p>The Forest Products Commission is awaiting the development and implementation by the Department of Guidelines for the rehabilitation of damaged soil to provide clearer guidance on commitments in this area.</p>
<p>20.5 (Plantations): The Forest Products Commission will:</p> <p>20.5.1 conduct its plantation operations in a manner that is in accordance with guidelines for soil protection in the Code of Practice for Timber Plantations and the relevant plantation manual, which will be revised in consultation with the Department by 31 December 2005 (<i>on plan commencement & ongoing</i>); and</p> <p>20.5.2 rehabilitate damaged soil resulting from plantations operations to the standards specified in the Code of Practice for Timber Plantations and the relevant plantation manual (<i>on plan commencement & ongoing</i>).</p>	<p>There were two incidents of excessive soil disturbance recorded in the Forest Products Commission's plantations EMS with respect to Action 20.5.1 One incident related to a machine sinking in water logged soil the other related to erosion following planting preparation operations.</p> <p>The review of the Code of Practice for Timber Plantations in WA continued during 2005. The review is expected to be completed in 2006.</p>
<p>21. WATER</p> <p>The plan proposes the following Actions at the operational scale for the purpose of seeking to protect the ecological integrity and quality of streams, wetlands and their associated vegetation, and increase the flow of water to surface and groundwater reservoirs:</p>	
<p>21.1 The Department and the Forest Products Commission will conduct their operations:</p> <p>21.1.1 in a manner that has regard to the provisions for stream zones in Appendix 3 where the operation occurs prior to the approval of the Guidelines referred to in the following paragraph (<i>on plan commencement & end of year 1</i>); and</p> <p>21.1.2 in accordance with the Guidelines for the Management of Informal Reserves referred to in Action 3.1.2 and the Soil and Water Conservation Guidelines referred to in Action 20.1.2 (<i>in year 2 & ongoing</i>).</p>	<p>The Department and the Forest Products Commission have been conducting their operations in accordance with the provisions of Appendix 3. During 2005 there were three incidents related to stream zones recorded in the Forest Products Commission's EMS. All except one were of a minor nature. The exception involved a harvesting machine cleaning down within a stream zone.</p> <p>The guidelines were not completed on the schedule required and are still under development (see Action 20.1.2). The Department is addressing specific aspects of management not covered by existing guidelines through the development of Advisory Notes. It is the Department's intention that these Advisory Notes will ultimately be incorporated into the required guidelines.</p>
<p>21.2 The Department will review the extent and condition of public access ways leading to public water catchment areas, with a view to considering whether the number of access ways ought to be reduced or their condition improved. (<i>by year 5 & end of year 10</i>)</p>	<p>No action in 2005.</p> <p>This will be addressed by the end of year 5.</p>

Soil and water

<p>21.3 The Department and the Forest Products Commission, in consultation with the Conservation Commission, will evaluate with the Water Corporation and the Water and Rivers Commission any proposal seeking to employ silvicultural treatments to increase the flow of water to surface and ground water reservoirs. <i>(as required & as required)</i></p>	<p>The Conservation Commission, the Department and the Forest Products Commission have contributed to the Water Corporation's Wungong Catchment Project, including its thinning proposal, at the policy and technical levels. The Department, in consultation with the Conservation Commission, evaluated a proposal seeking to employ silvicultural treatments to increase the flow of water to the Wungong reservoir and provided advice to the Environmental Protection Authority (EPA) to assist the EPA in its assessment of the project. The project moved into the implementation stage and the Department continued to liaise with the Water Corporation so that the Department's land management interests are fully considered, particularly the environmental protection aspects of the project.</p> <p>The Conservation Commission will conduct performance assessments of Water Corporation's activities in the Wungong catchment.</p>
<p>21.4 The Department:</p> <p>21.4.1 will provide advice and assistance to bodies seeking access to the potential sub-surface aquifers and surface reservoirs located on land to which the plan applies <i>(as required & as required)</i>;</p> <p>21.4.2 will facilitate access to land to which the plan applies for the purposes of water extraction and the development of associated infrastructure for public water supply purposes where this is consistent with the CALM Act <i>(as required & as required)</i>;</p> <p>21.4.3 will take and use water sustainably from land to which the plan applies <i>(on plan commencement & ongoing)</i>;</p> <p>21.4.4 may issue permits, after consultation with the Conservation Commission, for the sustainable taking of water from land to which the plan applies <i>(as required & as required)</i>; and</p> <p>21.4.5 will assist the Conservation Commission to develop a policy to provide guidance when proposals to take water from land to which the plan applies are considered <i>(as required & as required)</i>.</p>	<p>During 2005 the Department continued discussions with the Water Corporation to facilitate access to CALM Act land to allow the taking of water by either agency. Discussions have focussed on whether a CALM Act water removal permit is needed for the preliminary stages of project assessment and planning. Discussions have also been held to start to formalise tenure arrangements for Water Corporation dams and borefields located on CALM Act land. A CALM Act water removal permit has been drafted by the State Solicitor's Office and is likely to operate in conjunction with a CALM Act lease for any water infrastructure. A standard lease which will accommodate farm dams and water utilities is being finalised. The Conservation Commission is about to be consulted on behalf of the Minister for the Environment on the intention to publish a notice in the <i>Government Gazette</i> that the water removal permits are required.</p>

Soil and water

<p>21.5 (Plantations): The Forest Products Commission will:</p> <p>21.5.1 conduct its plantation operations in a manner that is in accordance with guidelines for water protection in the Code of Practice for Timber Plantations and the relevant plantation manual, which will be revised in consultation with the Department by 31 December 2005 <i>(on plan commencement & ongoing)</i>;</p> <p>21.5.2 consult with the Water and Rivers Commission prior to undertaking plantation operations in a public water catchment area <i>(on plan commencement & ongoing)</i>; and</p> <p>21.5.3 evaluate with the Department, the Water Corporation and the Water and Rivers Commission any proposal seeking to employ silvicultural treatment to increase the flow of water to surface and ground water reservoirs <i>(as required & as required)</i>.</p>	<p>Operations have been conducted in accordance with this action item.</p>
---	--

Global carbon cycles

FOREST MANAGEMENT PLAN ACTION	IMPLEMENTATION STATUS
<p>22. FORESTS AS A CARBON SINK The plan proposes the following Actions at the whole of forest scale for the purpose of seeking to sustain or increase the net quantity of carbon stored in the forest ecosystem:</p>	
<p>22.1 In addition to the Actions proposed in previous chapters, which will assist in maintaining net carbon storage, the Department will incorporate carbon management considerations into management planning and guidelines (<i>on plan commencement & ongoing</i>) by:</p> <p>22.1.1 having regard to the function of the forest as a carbon sink in the ongoing development of its greenhouse gas position and policy on emissions, sequestration, and bioenergy.</p>	<p>The Department is continuing work on its draft climate-biodiversity strategy which commenced during 2004.</p>
<p>23. ENHANCED GREENHOUSE EFFECT The plan proposes the following Actions at the whole of forest scale for the purpose of seeking to incorporate the best available predictions of likely future climate change into management planning:</p>	
<p>23.1 The Department will:</p> <p>23.1.1 investigate the likely impacts of climate change on the forest, including the role of forest ecosystems in the carbon cycle (<i>in year 2 & ongoing</i>);</p> <p>23.1.2 maintain contact and, where appropriate, collaborate with external groups undertaking research and modeling relating to climate change (<i>on plan commencement & ongoing</i>); and</p> <p>23.1.3 incorporate climate change prediction into future planning for the management of land to which the plan applies, where reasonable and practicable (<i>on plan commencement & ongoing</i>).</p>	<p>As for 2004, the Department is a full member of the Indian Ocean Climate Initiative (IOCI), a member of the IOCI Panel Executive and fully engaged in all IOCI-related initiatives that interpret climate change research and modeling for natural resource management planning and management purposes. IOCI is a research consortium that brings together climate researchers from CSIRO and the Bureau of Meteorology with WA State agency personnel.</p> <p>The Department has assembled and interpreted available climate change information and knowledge to enable this factor to be incorporated into forest plans where appropriate. The Department is working as a member of the IOCI Panel to generate better climate change information and scenarios for forest and other ecosystem and land management planning.</p>

Natural and cultural heritage

FOREST MANAGEMENT PLAN ACTION	IMPLEMENTATION STATUS
24. ABORIGINAL HERITAGE	
The plan proposes the following Actions at the operational scale for the purpose of seeking to work with Aboriginal people to identify, interpret, protect, and manage significant cultural heritage sites:	
<p>24.1 The Department will:</p> <p>24.1.1 seek to establish a formal Nyoongar consultative working group to advise on issues relating to Aboriginal cultural heritage in the plan area (<i>in year 1 & end of year 1</i>);</p> <p>24.1.2 identify Nyoongar women and men with authority and knowledge relating to Aboriginal cultural heritage in the plan area, and provide for their involvement in the management of the forest (<i>in year 1 & end of year 2</i>); and</p> <p>24.1.3 facilitate cross-cultural awareness and interpretive activities to inform and educate the wider community regarding Aboriginal culture (<i>on plan commencement & ongoing</i>).</p>	<p>Negotiations with members of the South West Aboriginal Land and Sea Council were instigated during 2004. No progress has been made during 2005.</p>
25. NATURAL AND OTHER CULTURAL HERITAGE	
The plan proposes the following Actions at the operational scale for the purpose of seeking to identify, record, assess and manage places of natural and cultural heritage significance on land to which the plan applies:	
<p>25.1 The Department will:</p> <p>25.1.1 maintain and, where reasonable and practicable, enhance databases of cultural heritage places and values (<i>on plan commencement & ongoing</i>); and</p> <p>25.1.2 cooperate with Commonwealth and State agencies, local government authorities and non-statutory organisations in relation to cultural heritage identification and conservation (<i>on plan commencement & ongoing</i>).</p>	<p>There were 1006 non-indigenous cultural heritage sites recorded in the Department's Recreation and Tourism Information System (RATIS) as at 31 December 2005. These records were maintained and updated by a RATIS Officer and were accessible to Departmental staff throughout the year.</p> <p>The Department does not maintain a separate database for indigenous heritage places and values, however spatial information was maintained by the Department's Geographic Information Services Section and updated monthly with information received from the Department of Indigenous Affairs (DIA) which maintains a detailed Aboriginal Site Register under section 38 of the State's <i>Aboriginal Heritage Act 1972</i>.</p> <p>During 2005, the Department cooperated with the DIA, the Heritage Council and other external agencies in relation to cultural heritage identification and conservation on land to which the plan applies.</p>

Natural and cultural heritage

<p>25.2 The Department and the Forest Products Commission will conduct their operations in a manner that has regard to the Indigenous Heritage Management Guidelines and Non-Indigenous Heritage Management Guidelines after those Guidelines have been prepared. <i>(on plan commencement & ongoing)</i></p>	<p>This action will be reported against after both sets of guidelines have been prepared.</p>
<p>25.3 (Plantations): The Forest Products Commission will:</p> <p>25.3.1 undertake its operations in a manner that is in accordance with guidelines in the Code of Practice for Timber Plantations and the relevant plantation manual for the identification of significant heritage sites, which are to be revised in consultation with the Department <i>(on plan commencement & ongoing)</i>; and</p> <p>25.3.2 share information relating to identified heritage sites with the Department <i>(on plan commencement & ongoing)</i>.</p>	<p>Prior to the commencement of each harvesting operation the Preharvest Checklist (FPC444) is completed which takes into account cultural values. The Forest Products Commission currently uses the same database information as the Department with additional checks conducted using recognized indigenous and non-indigenous heritage information websites.</p> <p>No incidents were recorded in the plantations EMS during 2005.</p>

Socio-economic benefits

FOREST MANAGEMENT PLAN ACTION	IMPLEMENTATION STATUS
An overall aim of the plan is to seek to sustain and enhance socio-economic benefits obtained from the forest to meet community needs.	
26. RECREATION AND TOURISM	
The plan proposes the following Actions at the whole of forest scale for the purpose of seeking to provide opportunities for active and passive recreation and tourism that will meet public demand, so far as is practicable and sustainable, and provide regional economic benefits:	
<p>26.1 The Department will:</p> <p>26.1.1 prepare, in consultation with the Conservation Commission, and progressively implement a strategic framework plan for recreation and tourism on land to which the plan applies (<i>in year 2 & end of year 5</i>);</p> <p>26.1.2 issue and administer licences, leases and permits for commercial tourism uses in accordance with the provisions of the CALM Act (<i>on plan commencement & ongoing</i>);</p> <p>26.1.3 issue permits and take other action to enable organised non-commercial recreation and educational groups to undertake appropriate activities (<i>on plan commencement & ongoing</i>);</p> <p>26.1.4 undertake research in relation to the knowledge, attitudes, skills and activities of visitors to land to which the plan applies (<i>by year 5 & ongoing</i>); and</p> <p>26.1.5 where appropriate, provide designated areas where camping may take place or where dogs and horses may be taken (<i>on plan commencement & ongoing</i>).</p>	<p>The Warren Region has completed a Regional Recreation Framework plan based on Recreation Opportunity Spectrum planning and has completed detailed precinct plans for about half of the region. The Swan Region has developed a structure for the two District Recreation Framework plans and a process for analysis of data to facilitate locating recreation facilities to best meet future needs. The South West Region has not commenced preparation of a framework plan. It has very few recreation facilities in State forest and is not planning to expand facilities in the next few years. The South West Region has been focusing on national parks and management planning for those parks. In all areas there is a need to address recreation use of State forest for pursuits such as mountain bike riding, car rallies, motor cycling and 4-wheel driving. All regions have concerns with these activities and there are several working groups attempting to address the issues.</p> <p>As at 31 December 2005, 71 commercial operations licences were on issue for State forest areas; issued pursuant to Section 101 of the CALM Act and Part 7 of the CALM Regulations. Permits are issued by each of the Regions to organised non-commercial recreation and educational groups to undertake appropriate activities.</p> <p>In 2005 the standard visitor satisfaction survey form was revised following widespread consultation with field and specialist staff, and other State agencies, to better assess the visitor activities on and satisfaction with Department-managed lands, including land to which the FMP applies. The response rates have improved. Eleven areas/sites to which the FMP applies were monitored and reported on.</p> <p>Under the <i>Protecting our old growth forests</i> policy, the Department received capital funding for new national parks and has been progressively implementing a range of infrastructure projects throughout the south-west including campgrounds and other visitor facilities. Identification of campsites, which require formal designation, is progressing on a region by region basis. Campsites can also be designated by signs, in accordance with the CALM Regulations. Horse riding in natural areas and</p>

Socio-economic benefits

	<p>domestic animals/pets are addressed in the Department's draft Policy Statement No. 18 – Recreation, Tourism and Visitor Services. Access for horses is managed according to the policy guidelines associated with Policy 18 and addressed in detail where required through management planning for individual parks/reserves. The processes leading to the formal designation (where required) of areas where dogs or horse riding is permitted commenced in 2005. Amendments to the CALM Regulations are proposed to allow dog and horse access areas to be provided through the use of signs.</p>
<p>27. VISUAL LANDSCAPE The plan proposes the following Actions at the whole of forest scale for the purpose of seeking to protect visual landscapes:</p>	
<p>27.1 The Department and the Forest Products Commission will:</p> <p>27.1.1 maintain a visual landscape classification and management system <i>(on plan commencement & ongoing)</i>;</p> <p>27.1.2 review guidelines for the application of visual landscape management principles in land-use planning, codes of practice, operational guidelines and other relevant manuals <i>(by year 5 & end of year 5)</i>; and</p> <p>27.1.3 make submissions in relation to development proposals that may impact on visual landscapes on land to which the plan applies that are forwarded to them for comment or advice, with a view to seeking to reduce the effect of any proposed development on the visual quality of the landscape <i>(as required & as required)</i>.</p>	<p>The initiative reported during 2004 to upgrade the Department's Visual Landscape Management System was ongoing during 2005.</p> <p>The Forest Products Commission implements the visual landscape management systems specified in Departmental guidelines such as <i>SFM Guideline No.1</i>. Visual landscape management is an item for consideration in the pre harvesting checklist and all harvesting operations must give consideration to it.</p>
<p>27.2 (Plantations): The Forest Products Commission will consider the impact of plantation operations on the visual quality of the landscape and where reasonable and practicable, will conduct those operations in a manner that seeks to reduce their impact on the visual quality of the landscape. <i>(on plan commencement & ongoing)</i></p>	<p>This action item was addressed where required.</p>

Socio-economic benefits

28. MINERALS AND PETROLEUM	
The plan proposes the following Actions at the whole of forest scale for the purpose of seeking to reduce the impact of mineral and petroleum operations on land to which the plan applies:	
<p>28.1 The Department and the Conservation Commission will:</p> <p>28.1.1 make submissions in relation to mining and petroleum proposals on land to which the plan applies that are forwarded to them for comment or advice, with a view to seeking to reduce the effect of mining and petroleum operations on that land (<i>as required & as required</i>);</p> <p>28.1.2 provide advice and, where appropriate, assistance to industry and Government agencies in relation to the effect of mining and petroleum operations on the forest, the means by which those effects may be reduced and the rehabilitation of the forest after those operations are complete (<i>as required & as required</i>); and</p> <p>28.1.3 seek to recover the cost of providing that advice and assistance (<i>as required & as required</i>).</p>	<p>This action is addressed on an ongoing basis. The Conservation Commission and the Department have continued to provide advice to the Environmental Protection Authority, Department of Industry and Resources and industry on all proposals that impact land to which the FMP applies. Advice is focused on achieving impact avoidance, reduction or mitigation in that order.</p> <p>The Department has continued to provide advice to the Environmental Protection Authority, the Department of Industry and Resources and industry on operations that impact land to which the FMP applies with a view to achieving sustainable vegetation systems in accordance with the Department's Policy 10 <i>Rehabilitation of Disturbed Land</i> and to seek to ensure liability to the State post closure is minimized.</p> <p>The Department has continued to seek cost recovery where appropriate, for example where specific site visits are required to remote areas.</p>
29. BASIC RAW MATERIALS	
The plan proposes the following Actions at the whole of forest scale for the purpose of seeking to manage basic raw materials (BRM) and promote the rehabilitation of areas to which the plan applies where BRM have been extracted:	
<p>29.1 The Department will extract and use gravel and other BRM required for the management of land to which the plan applies. (<i>on plan commencement & ongoing</i>)</p>	<p>This action is addressed on an ongoing basis.</p>
<p>29.2 The Conservation Commission will review its policy on BRM extraction as a matter of priority. (<i>in year 2 & end of year 2</i>)</p>	<p>The Conservation Commission will review its policy on BRM during 2006.</p>
<p>29.3 The Department will make submissions in relation to proposals to extract basic raw materials on land to which the plan applies that are forwarded to it for comment or advice, with a view to seeking (<i>as required & as required</i>):</p> <p>29.3.1 to have the cost of rehabilitation of areas from which BRM are extracted borne by the organisation responsible for the extraction of those materials; and</p> <p>29.3.2 the lodgment of a rehabilitation performance bond.</p>	<p>As for 2004, all <i>Mining Act 1978</i> leases and notice of entry agreements under the <i>Local Government Act 1995</i> continue to require the proponent to bear rehabilitation costs.</p> <p>The Department has continued to seek the application of performance bonds for all productive mining operations under the Mining Act with the exception of Agreement Act operations, as that is not supported by Department of Industry and Resources. The Department seeks performance bonds for exploration except where the risks are very low.</p>

Socio-economic benefits

<p>29.4 The Department and the Forest Products Commission will maintain a database of areas from which BRM have been extracted and will progressively develop plans and works programs for the rehabilitation of these areas. <i>(in year 2 & end of year 10)</i></p>	<p>New BRM extraction sites for roading associated with timber industry are recorded in the SILREC database.</p> <p>A database detailing areas (gravel pits) within the northern and central forests from which basic raw materials have been extracted, has been created. A similar database for areas in the southern forest is currently under development.</p> <p>Each database details all gravel pits created since the inception of the Forest Products Commission in November 2000. Detail specific to pits created since the advent of the FMP will be incorporated therein.</p> <p>Currently, within northern and central forest databases, there are specific details for 140 different pits from which extraction has occurred since November 2000. The total forest area affected is approximately 34 hectares. Of this area approximately 13 hectares have been rehabilitated by a combination of ripping, seeding and/or re-planting.</p> <p>There are further pits, recently created to service harvesting coupes, which are yet to be captured in the database. These will be added as they become available for rehabilitation following the completion of roading and harvesting in the adjacent coupe.</p>
<p>30. LEASES</p> <p>The plan proposes the following Action at the whole of forest scale for the purpose of seeking to manage leases:</p>	
<p>30.1 The Department will issue and administer leases for facilities and uses in accordance with the provisions of the CALM Act. <i>(on plan commencement & ongoing)</i></p>	<p>During 2005, the Department issued and administered 15 leases for facilities and uses on land to which the FMP applies, in accordance with the provisions of the CALM Act. Three leases were issued for areas in the Warren Region, six for areas in the South West Region and six for areas in the Swan Region.</p>
<p>31. BIOPROSPECTING</p> <p>The plan proposes the following Action at the whole of forest scale for the purpose of seeking to promote, encourage and facilitate the controlled exploration of native flora for scientific, therapeutic and horticultural purposes:</p>	
<p>31.1 The Department will implement the current contract. <i>(on plan commencement & ongoing)</i></p>	<p>As for 2004, the Department continued to implement the current contract.</p>

Plan implementation

FOREST MANAGEMENT PLAN ACTION	IMPLEMENTATION STATUS
<p>32. MONITORING AND AUDIT The plan proposes the following Actions for the purpose of seeking to monitor and audit the extent to which management of land to which the plan applies is undertaken in accordance with the plan:</p>	
<p>32.1 The Department and the Forest Products Commission, in consultation with the Conservation Commission, will:</p> <p>32.1.1 cooperate in the development of an annual audit program to monitor the extent to which management of land to which the plan applies is undertaken in accordance with the plan (<i>on plan commencement & ongoing</i>); and</p> <p>32.1.2 conduct audits in accordance with the annual audit program, and report the results to the Conservation Commission (<i>on plan commencement & ongoing</i>).</p>	<p>The Department and the Forest Products Commission, in consultation with the Conservation Commission, developed an audit program for 2005.</p> <p>The Department completed an audit on compliance with coupe management and environmental protection requirements in native forest harvesting, as well as audits on <i>Phytophthora cinnamomi</i> hygiene management in forest operations and compliance with soil management guidelines during native forest harvesting operations.</p> <p>In 2005 the Forest Products Commission carried out audits in alignment with the program agreed in 2004 with the Department and the Conservation Commission. Most scrutiny for these Forest Products Commission internal audits is based upon the EMS compliance frame work dealing with operational controls such as coupe management, disease hygiene, and soil conservation. Forest Products Commission Branch EMS systems were also subject to internal audit, as well as two external surveillance audits in order to maintain external certification standards. The audits on compliance with coupe management and environmental protection requirements in native forest harvesting and plantations have been completed and are being reported.</p> <p>Utilisation standards were not audited in the Forest Products Commission's 2005 program but are scheduled to be audited in 2006 following internal focus on utilisation issues and redevelopment of the management process.</p>

Plan implementation

<p>32.2 The Conservation Commission will undertake independent audits to assist it in assessing the extent to which management of land to which the plan applies is undertaken in accordance with the plan, and will give priority to auditing (<i>on plan commencement & ongoing</i>):</p> <ul style="list-style-type: none"> 32.2.1 the management of old-growth forest in informal reserves; 32.2.2 the protection of stream zones and less well reserved vegetation complexes; 32.2.3 the selection and management of fauna habitat zones; 32.2.4 marri retention; 32.2.5 dieback hygiene; 32.2.6 protection of significant flora and understorey species; and 32.2.7 soil management. 	<p>The Conservation Commission is responsible for conducting audits of activities undertaken by both the Department and the Forest Products Commission. An audit program framework has been developed. A number of inspections were undertaken and reports on the findings are being prepared. Once completed, these reports will be publicly available on the Conservation Commission's website.</p> <p>During 2005 the following report was completed:</p> <ul style="list-style-type: none"> • <i>Conservation Commission Forest Management Plan Performance Assessment Fauna Habitat Zones, Performance Assessment Number FMPPA – 01/05</i> (http://www.conservation.wa.gov.au/files/docs/155.pdf)
<p>32.3 The Conservation Commission will undertake comprehensive mid-term and end-of-term audits of the extent to which management of land to which the plan applies has been undertaken in accordance with the plan, which will include consideration of the extent to which all key performance indicator targets have been achieved. These audits will be provided to the Environmental Protection Authority for review by 31 December 2008 and 31 December 2012 respectively.</p>	<p>The mid-term audit is to be reported to the Environmental Protection Authority for review by 31 December 2008.</p>
<p>32.4 The Conservation Commission, the Department and the Forest Products Commission will publish the results of the audits referred to in Actions 32.1, 32.2 and 32.3. (<i>in year 2 & ongoing</i>)</p>	<p>During 2005 the Conservation Commission completed the following audit report:</p> <ul style="list-style-type: none"> • <i>Conservation Commission Forest Management Plan Performance Assessment Fauna Habitat Zones, Performance Assessment Number FMPPA – 01/05</i> (http://www.conservation.wa.gov.au/files/docs/155.pdf) <p>The Department publishes the information from its main audit report in its Annual Report, published on the Naturebase website (http://www.naturebase.net/component/option,com_docman/task,cat_view/gid,212/Itemid,711/). A major audit of compliance with environmental standards in timber harvesting was published in the Department's 2004/05 Annual Report.</p> <p>The Forest Products Commission provides copies of the entire audit reports to the Department and the Conservation Commission. External publishing of Forest Products Commission audit outcomes are left to the Conservation Commission as a post report activity. The Forest Products Commission is considering a recommendation to post report summaries on its website.</p>

Plan implementation

<p>32.5 The Forest Products Commission will publish annual reports on the compliance of its staff and contractors with the provisions of the plan and subsidiary management guideline documents. <i>(in year 1 & ongoing)</i></p>	<p>The Forest Products Commission has published its report for 2005 and copies are available from http://www.fpc.wa.gov.au/pdfs/FMP%20Compliance%20Report%20as%20at%2031%20December%202005%20_final_.pdf. The information in that report is also contained in this document.</p>
<p>32.6 The Department, in consultation with the Conservation Commission, will develop a protocol for each key performance indicator in the plan <i>(in year 1 & end of year 1)</i>, which will:</p> <p>32.6.1 identify the data to be collected and analysed in assessing the extent to which the key performance indicator has been achieved; and</p> <p>32.6.2 specify the persons who are responsible for the collection and analysis of that data.</p>	<p>Development of protocols for each key performance indicator began in mid 2004 and their development is continuing. The protocols for more than two thirds of the key performance indicators are close to completion.</p> <p>Delays in developing most of the outstanding protocols are attributed to the need to negotiate with the agencies responsible for the data required for reporting against the key performance indicators, such as the Department of Water.</p>
<p>32.7 The Department and the Forest Products Commission will cooperate with the Commonwealth in the implementation of the Montreal Indicator program. <i>(on plan commencement & ongoing)</i></p>	<p>The Department continues to be involved with the Commonwealth in the implementation of the Montreal Indicator program through representation on both the Montreal Implementation Group and the National Forest Inventory Steering Committee for Australia. The Forest Products Commission will cooperate with both the Department and the Commonwealth as required on this issue.</p>
<p>32.8 (Plantations): The Forest Products Commission will, through the Plantation Environmental Management System, audit the extent to which plantation operations are undertaken in accordance with the plan. Audits will be planned with and reported to the Department and the Conservation Commission. <i>(on plan commencement & ongoing)</i></p>	<p>There were 11 incidents relating to non-conformances against the requirements of the FMP. The incidents related to entry to a Disease Risk Area, movement of vehicles outside of plantation areas into native vegetation, hydro-carbon spills, soil disturbance, disruption to declared threatened (rare) flora, incomplete pre harvest checklist and a prescribed burn escape. All incidents were of a minor nature except for one significant hydrocarbon spill in a public drinking water catchment area. Remedial actions concerning all incidents were addressed through the Forest Products Commission's Environmental Management System (EMS).</p>
<p>33. ADAPTIVE MANAGEMENT</p>	
<p>The plan proposes the following Actions for the purpose of seeking to provide for adaptive management to improve forest management:</p>	
<p>33.1 The Department and the Forest Products Commission will, in cooperation with the Water and Rivers Commission and the Water Corporation, and in consultation with the Conservation Commission, conduct research in relation to the extent to which stream zones in informal reserves adequately protect biodiversity, water quality and water quantity in areas subject to timber harvesting. <i>(in year 2 & end of year 5)</i></p>	<p>The Department conducted a feasibility and costing study during 2005 for an experimental study to investigate the adequacy of stream reserves in protecting biodiversity. The costing was significantly higher than budgeted for and the Department will discuss funding of the project with the Forest Products Commission, Department of Environment and Water Corporation before consulting with the Conservation Commission.</p>
<p>33.2 The Department will, in consultation with the Conservation Commission, conduct trials, where reasonable and practicable, of improvements to silviculture and fire management practices. <i>(by year 5 & ongoing)</i></p>	<p>Analysis of results continued in 2005 from adaptive management trials on the management of moist soils in association with timber harvesting that were undertaken during 2004.</p>

Plan implementation

<p>33.3 The Forest Products Commission will test methods to increase the utilisation of sawlogs below first and second grade standards. <i>(in year 2 & ongoing)</i></p>	<p>Utilisation of jarrah bole residue logs continued in 2005 under a contract to supply 20,000 cubic metres annually to Blueleaf. The actual volume delivered however was approximately 13,500 cubic metres. Third grade jarrah and karri sawlogs continue to be sold by the Forest Products Commission.</p>
<p>34. REVIEW The plan proposes the following Actions for the purpose of seeking to ensure that the plan Actions, policies and guidelines maintain their currency:</p>	
<p>34.1 The Department and the Conservation Commission will:</p> <p>34.1.1 develop or maintain a comprehensive suite of operational guidance documents (see Appendix 1) <i>(on plan commencement & ongoing)</i>;</p> <p>34.1.2 evaluate the results from research, monitoring, audits and trialing of adaptive management practices to determine whether the plan, or guidelines and policies referred to in the plan, should be amended <i>(in year 2 & ongoing)</i>;</p> <p>34.1.3 amend the plan if required according to the CALM and EP Acts <i>(as required & as required)</i>;</p> <p>34.1.4 initiate an independent expert review of silvicultural practices and their impacts on biodiversity during the second half of the life of the plan. The review will have regard to the results from FORESTCHECK and other research monitoring, audits, and adaptive management trials of these practices <i>(in year 8 & end of year 9)</i>;</p> <p>34.1.5 adopt the same processes for consultation, advice and approval for amending policies and guidelines as described earlier in the plan to develop or review them <i>(as required & as required)</i>; and</p> <p>34.1.6 take action that is reasonable and practicable to address problems identified in management systems <i>(as required & as required)</i>.</p>	<p>Results of adaptive management trials, audit and monitoring undertaken on soil management operations during 2004 led to a review and subsequent amendment to the interim soil management guidelines during 2005.</p> <p>Evaluation of the FMP will occur in 2007 and 2008 contributing to the mid-term audit.</p>
<p>35. COMMUNITY INVOLVEMENT The plan proposes the following Actions for the purpose of seeking to provide opportunities for Government agencies, non-government organisations and the community to participate in plan implementation:</p>	
<p>35.1 The Department and the Forest Products Commission will, when required by the provisions of the plan, undertake public consultation in relation to the development and review of management policies and guidelines. <i>(as required & as required)</i></p>	<p>This action will be reported against when required.</p> <p>There were no management policies or guidelines developed by the Forest Products Commission during 2005 that required public consultation.</p>

Plan implementation

<p>35.2 The Department will:</p> <p>35.2.1 develop and implement programs that seek to provide the community with educational opportunities and information on ecologically sustainable forest management, in particular information relating to the sustained yield statistics and models (<i>on plan commencement & ongoing</i>);</p> <p>35.2.2 establish public consultation processes (<i>on plan commencement & ongoing</i>);</p> <p>35.2.3 provide opportunities for community participation in voluntary activities and educational and social development programs relating to ecologically sustainable forest management (<i>on plan commencement & ongoing</i>); and</p> <p>35.2.4 provide a range of opportunities for volunteers to be involved in forest management activities (<i>on plan commencement & ongoing</i>).</p>	<p>During 2005 there were 17 volunteer projects which were either in place or initiated by the Department, which provided a range of opportunities for volunteers to be involved in forest management activities on land to which the FMP applies.</p>
<p>36. MANAGEMENT AND PERFORMANCE STANDARDS</p>	
<p>The plan proposes the following Actions for the purpose of seeking to provide for continuous improvement in management and performance standards:</p>	
<p>36.1 The Department will develop and maintain an environmental management system for forest management, which is to be independently accredited as conforming to AS/NZS ISO 14001. (<i>in year 2 & ongoing</i>)</p>	<p>The Department assessed the requirements for the development and implementation of the EMS and will be looking to appoint a project manager during 2006 who will coordinate the development of the EMS.</p>
<p>36.2 (Plantations): The Forest Products Commission will maintain an environmental management system independently accredited as conforming to AS/NZS ISO 14001. (<i>on plan commencement & ongoing</i>)</p>	<p>The Forest Products Commission maintained an independently accredited EMS for its plantation operations during 2005 and is committed to maintaining it as required by this Action.</p>
<p>37. ROLES AND RESPONSIBILITIES IN MANAGEMENT</p>	
<p>The plan proposes the following Actions for the purpose of seeking to facilitate effective management of forests:</p>	
<p>37.1 The Department and the Forest Products Commission will:</p> <p>37.1.1 identify key roles and responsibilities in forest operations and specify the persons who are responsible for fulfilling those roles and responsibilities (<i>in year 2 & end of year 2</i>); and</p> <p>37.1.2 identify key tasks associated with implementation of the plan and specify the persons who are responsible for undertaking those tasks (<i>in year 2 & end of year 2</i>).</p>	<p>The Department will achieve these actions through Actions 36.1.</p> <p>No action was undertaken by the Forest Products Commission on this action in 2005. The Forest Products Commission anticipates addressing these actions during 2006.</p>

Plan implementation

38. KNOWLEDGE	
The plan proposes the following Actions for the purpose of seeking to generate and transfer knowledge and develop the necessary skills and competencies in staff of the Department and staff and contractors of the Forest Products Commission, with a view to leading to improvements in forest management:	
<p>38.1 The Department will develop and implement research programs, in cooperation with the Conservation Commission, including the research referred to in Actions 9.1 and 9.2. <i>(on plan commencement & ongoing)</i></p>	<p>Research programs have been maintained (see Action 9.2).</p> <p>The Department's Science Division continued to implement a range of research addressing aspects of sustainable forest management including forest health, fire, silviculture and hydrology. Individual research project summaries are provided in the Annual Research Activity Report published by the Science Division in July 2005. New projects were initiated to monitor stream invertebrate biodiversity (FMP KPI 20), and to identify appropriate seed collection zones for plant species used in rehabilitation operations. FORESTCHECK continues to be implemented and annual reports are published, see http://science.calm.wa.gov.au/projects/forestcheck/.</p>
<p>38.2 The Department and the Forest Products Commission will take reasonable and practicable steps to:</p> <p>38.2.1 identify the skills required to competently undertake the key tasks referred to in Action 37.1.2 <i>(in year 2 & end of year 2)</i>;</p> <p>38.2.2 review the skills and competency levels of persons responsible for undertaking those tasks <i>(in year 2 & ongoing)</i>; and</p> <p>38.2.3 initiate training and other programs to increase skill and competency levels where they are deficient <i>(in year 2 & ongoing)</i>.</p>	<p>No action in 2005.</p> <p>This action will be achieved through Action 36.1.</p> <p>The Forest Products Commission anticipates addressing it during 2006.</p>