VISUAL AMENITY

MISSION AND OBJECTIVES – 1999-1997

CALM Annual Report 1998/1999. 1999
CALM Annual Report 1997/1998. 1998
CALM Annual Report 1996/1997. 1997

NOTE: REFER TO ENTRY UNDER ANNUAL REPORT 1992/1993 – SIMILAR WORDING

SILVICULTURE GUIDELINE - 1997

Silviculture guideline 1/97 : Fire as a Silvicultural Tool in the Jarrah forest

NOTE: THIS GUIDELINE SUPERSEDES SILVICULTURE GUIDELINE 1/91

4. Fire and Silvicultural Strategies
4.1 Thinning
Silvicultural Objective
"[…] *In some cases thinning is carried out for aesthetic reasons ...*" (p. 4)

OPERATIONS MANUAL – 1997

NOTE: FOR UPDATES ISSUED IN 1997 REFER TO THE ENTRIES UNDER THE FOLLOWING –
Fire Operations Manual : Volume 3 : Fire Protection Instructions. 1993

MISSION AND OBJECTIVES – 1996

CALM Annual Report 1995/1996. 1996

NOTE: REFER TO ENTRY UNDER ANNUAL REPORT 1992/1993 – SIMILAR WORDING

TIMBER HARVESTING … 1996 ED. – 1996

Timber Harvesting in Western Australia … 1996 Ed. 1996

Section 1 : Planning and Monitoring
Specification 1.1 : Harvesting and Regeneration Plans
1. Responsibilities
NOTE: REFER TO ENTRY UNDER 1990 EDITION (SIMILAR WORDING)

2. Plan Types
2.3 Short Term Integrated Harvesting and Regeneration Plan
"*This is the tertiary level integrated harvesting plan which shows in detail proposed harvesting areas over a one or two year period. The short term plan takes into account the principles contained in 'Guidelines for Integrated Forest Harvest Planning and Design'.*" (p. 16)

"*The plans shall include:*

(1) A 1:250, 000 overview plan showing the approximate location of all proposed harvesting areas for each year of the plan.
(2) 1:50, 000 block plans showing proposed harvesting boundaries and major access – also shows CALM grid.
(3) 1:25, 000 plans showing, when available:
[…]
- *VLM buffers as they become available.*
[…]" (p. 16)

3. Plan Amendment
NOTE: REFER TO ENTRY UNDER 1990 EDITION (SIMILAR WORDING)

8. Records
"*SFRBU or District staff must maintain up-to-date field records of areas cut over and silviculturally treated. Forms for inputs into the computer system 'SILREC' will be collated every six months with assistance from Forest Management Branch.*" (p. 17)

3.1 River and Stream (Riparian) Zones
Native Hardwood Forests:-

STREAM ORDER	***WIDTH EITHER SIDE (APPROX.) (M)***	***TOTAL WIDTH (APPROX.) (M)***	***MINIMUM WIDTH EITHER SIDE (M)***
First	*30*	*60*	*20*
Second	*30*	*60*	*20*
Third	*30*	*60*	*20*
Fourth	*75*	*150*	*50*
Fifth upwards	*200*	*400*	*100*

(p. 37)

3.2 Travel Route Zones (formerly road zones)
"*Fixed travel route zone widths are applicable in the Southern Forest Region on what are known as 'Level 1' and 'Level 2' travel routes.*

For Level 1 travel routes the width must be 200m on both sides. For Level 2 travel routes the width must be 100m on both sides.

For all other roads in State forest, any adjacent harvesting is to be carried out in accordance with appropriate VLM principles." (p. 37)

NOTE: THE FORMER SPECIFICATION 5.5 : PROTECTION OF THE VISUAL RESOURCE (LANDSCAPE) IS NOT IN THIS EDITION

MISSION AND OBJECTIVES – 1995

CALM Annual Report 1994/95. 1995

NOTE: REFER TO ENTRY UNDER ANNUAL REPORT 1992/93 – SIMILAR WORDING

SILVICULTURE GUIDELINE - 1995

Guidelines For Forest Landing & Snig Track Design & Management. 1995

Introduction

"*The following set of guidelines provides instructions for all phases of landing, snig track and in-coupe shunt operations from planning through to rehabilitation. They integrate measures of protected the visual landscape values …*" (p. 1)

Planning And Design

- "*Landings will be located outside the possible area of influence of reserves and special care zones as defined in the Regional Management Plans and Manual of Timber Harvesting in Western Australia. Areas of influence being that area likely to be affected by mud overflow into reserve, damage by burning off operations, etc.*

- *Landings will be located where topography or vegetation provides a visual screen from primary viewer positions.*

- *Landing size will depend on applied log loading technique, volume and number of products required, and Visual Landscape Management classifications.* […]" (p. 1)

- "*Landings will be located in natural forest openings, where possible, with no unduly impact on environmental values.* […]

- *Season of logging will be considered when selecting landing sites.* […] *Landings will be located where they can withstand the required traffic.*

- *Landings will not be located in natural drainage lines or depressions.* […]

- […] *however in steeper slopes care will be taken to ensure that snig track's don't cause water to collect and lead to track erosion and ponding on landings.* […]

- *Drainage from the landing catchment area must be considered and provided at the lowest point of the landing. This will generally be at the front where water can be diverted into the road drainage system.*

[…]

- *A number of options are available to reduce the visual impact of landings and snig tracks. Refer sketches.*

A. Landings will be accessed from in-coupe roads or from public roads within Visual Landscape Management Zone (VLMZ) C areas.
C. The depth of adequate roadside vegetation screening will vary according to vegetation site types." (p. 1)

Landings, Debris Heaps & In-Coupe Roading Design Cont'd

NOTE: REFER TO ACTUAL DOCUMENT FOR ACCOMPANYING ILLUSTRATION

"*Curve coupe access roads through roadside vegetation. Ensure screening of debris heaps in VLMZ's A & B.*" (p. 2)

Location of Landings

NOTE: REFER TO ACTUAL DOCUMENT FOR ACCOMPANYING ILLUSTRATION

"*Minimise the size of visible roadside landings (VLMZ Careas) with the thinnest boundary (max. 20 metres) facing the road.*" (p. 2)

Replanting Of Landings

NOTE: REFER TO ACTUAL DOCUMENT FOR ACCOMPANYING ILLUSTRATION

"*Replant landings at irregular intervals in the rip lines, and in areas partially beyond the landing boundaries.*" (p. 2)

In-Coupe Roading Design

NOTE: REFER TO ACTUAL DOCUMENT FOR ACCOMPANYING ILLUSTRATIONS

"*Avoid aligning tracks vertically or parallel to the principal direction of views.*" (p. 2)

Construction

- "*Scrub and ground log debris will be stacked into tight soil free heaps in a suitable forest opening as nominated by the FOIC or his/her representative.* […]
- *Where trees exist on clearing sites, they will be pushed to fell within the confines of the allowable clearing wherever possible. This is not applicable to clearfell areas.*" (p. 2)
- "*Merchantable timber will immediately be cut from trees pushed during clearing operations. Non merchantable trees will be cut into lengths that allow confined stacking and eventual removal by salvaging or burning.*
- *All debris resulting from tree removal will be stacked a minimum of 5 metres away from retained stems in tight, soil free, tall rather than broad heaps, as noted above.*
- *With the exception of sheet laterite areas, top soil will be stripped from the entire landing clearing (to a minimum depth of 100 mm where soil depth allows) and stockpiled in screened areas, clear of site operations. No heavy woody debris will be mixed with or strewn over stockpiled top soil.* […]" (p. 2)

- "*No woody debris will be pushed closer than 1 metre to retained vegetation. No debris will be heaped within 5 metres of retained vegetation. Retained vegetation refers to vegetation planned for retention, i.e. – crop & habitat trees, visual amenity vegetation, etc.*

- *See Appendix 2 for details of landing dimensions.*

- *See Appendix 3 for sequence and timing of operations.*" (p. 3)

Operation Phase
Entry Points For Skidding and Forwarding
"*Two entry points at the rear of landings are generally preferred for efficient skidding and forwarding.* […]" (p. 3)

Disposal Of Log Debris

- "*All debris material less than 1.8 m (Jarrah) or 2.1 m (Karri & Marri) will be stacked in heaps at the back of the landing, as described in Construction Section above.*" (p. 3)

Protection Of Retained Landscape Elements

- "*Damage to retained trees, including vegetation screens, rock outcrops and landform immediately surrounding landings and in-coupe roads is to be avoided.*" (p. 3)

Landing Rehabilitation

- "*Landings will be rehabilitated with the aim of restoring natural landforms and drainage patterns and vegetation species.*

- *The following sequence of rehabilitation measures will be fully implemented as soon as possible, preferably at the same time, following the harvest operations and as soil conditions allow (see Appendix 3). Partial rehabilitation measures will be implemented if the overall coupe operations extend over long time periods. If the coupe is to be inactive for more than 14 days then drainage structure will be established.*" (p. 3)

Rehabilitation Sequence

- "*All unmerchantable debris heaps resulting from landing and in-coupe road clearing, including ramp logs will be removed from the screened area and pushed into a tight heap in the middle of the landing, avoiding the boundaries or edges of the landing.* […]

[…]

- *The landing area will be regraded to original land contours.* […]

- *Original top soil will be returned & evenly spread over the areas disturbed.*

- *Using a winged ripper, the landing, and where possible-areas immediately adjacent to the landing, will be deep ripped to 0.5 metre (max.) at 1.0 metre intervals, along the contour, avoiding geometrical like patterns or shapes.*

- *Drainage from snig tracks will be diverted to ensure that water does not run onto the landing site. Refer to MHLS Specification Section 5.2, Part 2.*

- *Trees of suitable indigenous species will be planted at irregular intervals (+/-3 x 2 metres) in the rip lines and in areas partially beyond the landing boundaries.* […]

[…]

- *All signs, industrial debris, cans, tyres, wire ropes, etc. must be removed before the landing can be certified as complete.*" (p. 3)

Snig Tracks & In-Coupe Shunt Rehabilitation

- "*Rip snigs tracks & in-coupe shunts to 0.7 metres (max.), at 1.0 metre intervals.* […]" (p. 4)

SILVICULTURE GUIDELINE - 1995

<u>Silviculture Guidelines 2/95 : Silvicultural Practice in the Karri Forest. 1995</u>

NOTE : THIS GUIDELINE SUPERSEDES SILVICULTURE SPECIFICATIONS 6/89

2. Silvicultural Objectives and Treemarking for Harvesting

- "*Harvesting and treatment practices will be varied in accordance with the visual and landscape management objectives of the site. Gap size, thinning intensity, felling cycle, rotation length, treatment method, sequence of harvesting, coupe shape and uncut patch size may all be adjusted (see 'Landscape Management Guidelines for Integrated Forest Harvest Planning and Design')*" (p. 1)

SILVICULTURE GUIDELINE - 1995

Silviculture Guidelines 1/95 : Silvicultural Practice in the Jarrah Forest

NOTE: THIS GUIDELINE SUPERDSEDES SILVICULTURE SPECIFICATIONS 2/91

4.2 Marking to Promote Growth (Thinning)
Thinning intensity
"[…]*In areas of high visual resource value and salt sensitivity additional trees must be retained. (Appendix 2)*" (p. 3)

Diversity
"*To maintain diversity, up to 10% of the retained trees may be 'non crop tree' marri. Mark to protect native pear, river banksia and examples of snoddygobble, peppermint, large blackboys etc. Additional diversity of size and density of retained trees is required in the first 150 metres of VLM Zone A. (Appendix 2).*" (p. 3)

4.3 Marking to release regeneration (gap creation)
Gap Size
"[…] *These must be at least 50-100 metres across depending on VLM zone (Appendix 2) and will not be available for timber harvesting until the next cutting cycle*.[…]" (p. 4)

5. Silvicultural Treatment
5.2 Priorities for Treatment
"*vi. Areas of high landscape sensitivity where treatment is essential to meet the VLM objective*." (p. 7)

MISSION AND OBJECTIVES – 1994

CALM Annual Report 1993/94. 1994

NOTE: REFER TO ENTRY UNDER ANNUAL REPORT 1992/93 – SIMILAR WORDING

MANAGEMENT PLAN - 1994

Forest Management Plan 1994-2003. 1994

Vision Statement
"*The Government's vision is based on the ecologically sustainable management of the State's publicly owned native forests for all forest values. In particular, the vision is for:*

[…]
- *forests in which visual amenity values are maintained to enhance the tourism industry.*" (p. i)

1. Forest Policy Statement
Management Objective
"*To protect and enhance identified forest values and to employ the best practices in managing forest ecosystems.*

To achieve this objective CALM will:
[…]
- *Manage operations in ways that sustain the beauty of the forest through the application of landscape planning and design principles.*" (p. 2-3)

2. The Strategies for the Sustainable Management of Native Forests
Managing Forest Structure
"*The following management practices will be progressively applied to the karri forest:*

[…]
3.[…] *Travel route zones will remain unharvested except for those portions of regrowth forest where thinning can be undertaken in a manner consistent with the defined Visual Quality Objective.*" (p. 11)

Managing the Visual Landscape on Forest Lands
"*The need to preserve the scenic beauty of forested landscapes resulted in the retention of undisturbed forest along major roads in the 1973 Woodchip Environmental Impact Statement. Since that time, this concept has been extended and formally adopted into CALM planning procedures known as the Visual Resource Management System (VRMS). This methodology is being progressively adopted in all forest areas where disturbance takes place. It is well recognised that active management of forest scenery is important to maintain the recreational and tourism values of forests.*

To preserve scenic beauty the following approach will be adopted:

1. Visual landscape values will be evaluated and integrated into all forest management operations.

2. All landscape types in the forest will be identified and classified into Visual Landscape Management Zones.

3. Visual Quality Objectives will guide forest management for each zone. […]
[…]
5. Use areas throughout the forests will be managed according to visual resource management principles and zone objectives.

6. In the southern forests, where clearfelling is the method of harvesting and regeneration of the karri forests, a new system of fixed travel route zones will be instituted:

- *level one travel routes, a zone of 200 metres either side;*
- *level two travel routes, a zone of 100 metres either side.*

No clearfelling of mature forest will occur in these zones. Thinning of regrowth and the removal of dangerous trees will be acceptable provided visual quality objectives are met." (p. 24)

"*7. In the central and northern forests, where group selection cutting and thinning are the harvesting methods employed, new silvicultural prescriptions will be applied adjacent to level one and level two travel routes to minimise the visual impact of harvesting and regeneration.*" (p. 25)

Silviculture in the Jarrah Forest
"*The following silvicultural approach will be used in the jarrah forest. In some respects the principles are new and will require progressive implementation. As a result of Ministerial Condition 3, the jarrah silvicultural system will be implemented as a trial and reviewed during the period of the plan.*

" *2. The maximum gap size will be approximately 10 hectares and gap size and shape will be varied to meet visual resource and other management objectives. Notwithstanding gap size, sufficient trees in terms of number, age and condition will be retained to provide habitat for hollow nesting species.*" (p. 12)

"*3. The relationship of gap area and shape to visual impact will be studied in harvesting trials and will be incorporated into operational practice.*" (p. 12)

"*5.* […] *Retained strips will be a minimum of 100 meters between gaps, except where gaps are reduced to below one hectare for aesthetic reasons; the minimum strip width then will be 50 metres.*[…]" (p. 12)

"*8.*[…]*Travel route zones will remain unharvested except for those portions of regrowth forest where thinning can be undertaken in a manner consistent with defined Visual Quality Objectives.*" (p. 13)

Silviculture in the Karri Forest
"*The following management practices will be progressively applied to the karri forest:*

[…]
3. […]*Travel route zones will remain unharvested except for those portions of regrowth forest where thinning can be undertaken in a manner consistent with the defined Visual Quality Objective.*" (p. 11)

Forest Tourism
"[…]*Goals for forest-based tourism are therefore:*

- *To maintain 'naturalness', diversity of natural experiences and quality of attractions. Here quality not only refers to the natural environment but also to its visual attributes, information, infrastructures and services.*" (p. 40)

STRATEGIC PLAN - 1994

Strategic Plan : Southern Forest Region. 1994

4.0 Vision
"*The Southern Forest Region is a place of EXTENSIVE VALUES where our PEOPLE ARE MOTIVATED, our UNIQUE ENVIRONMENT SUSTAINED, our RESOURCES are WELL MANAGED and our CUSTOMERS NEEDS are MET.*" (p. 2)

7.1 Objectives
"*Commencing immediately we plan to have achieved the following by the year 2000. (See 7.2 Action Plans for a description of how we intend achieving each of these objectives).*" (p. 4)

Environment and Operational Area
"*OBJECTIVE 2 – FOREST MANAGEMENT STRATEGY:*
We have successfully implemented the 1994 Forest Management Plan and 1987 Regional Management Plan." (p. 5)

"*OBJECTIVE 4 – IMPLEMENTATION OF MANAGEMENT PLANS:*
We have effectively implemented the priority works defined in the:
- *Shannon D'Entrecausteaux Management Plan*
- *Walpole/Nornalup Management Plan*
- *Various Interim Management Guidelines*" (p.5)

GUIDELINES – 1994

Guidelines for Integrated Forest Harvest Planning & Design. 1994

Introduction
"*The following guidelines address the broad scale and project level planning and design requirements of managing aesthetic forest values in an integrated resource or multiple-use forest values in an integrated resource or multiple-use forest management process for the Southern Forest Region. Integrated resource planning by definition involves the identification, evaluation and sensitive handling of the whole spectrum*

of natural and cultural resource values. Consequently, a multi-disciplinary approach is required if the planning process is to be totally effective. The role and performance of these strategic guidelines are linked to the abilities of further integrating landscape design capabilities at the specific forest operational site scale.

The prime purpose of these guidelines is to assist forest officers with the determination of the degrees of acceptable aesthetic change within forest landscapes. Wherever possible, visual landscape values must be sustained and or enhanced over space and time. […] *The prime use will be in the areas of both Strategic and Operational planning and design.*

Whilst these guidelines have been prepared for use in the Southern Forest Region, their application will be of Importance for other Forest Regions in CALM.

Key Management Objectives

"*1.0 Ensure that all land uses on lands and waters managed by CALM are planned and carried out in ways that sustain the visual quality of the natural environment.' CALM'S Landscape Management Policy No. 34.*

2.0 Manage operations in ways that sustain the beauty of the forest through the application of landscape planning and design principles. Forest Management Plan 1994-2003." (p. 1)

Landscape Management Principles

- "*At any one time, plan and manage for the maximum diversity and representation of intrinsic forest scenic quality across landscape character type areas. Do not simply manage for 'seen-area sensitivity' of the forest.*

- *Plan for harvesting in a manner compatible with the visual landscape management objectives specific to the locality or total visual landscape management (VLM) zone area.*

The following objectives will be applied within the zones:

Visual Landscape Management Zone A :
VLM Priority – ***High***
VLM Objective – ***Maximum Retention of Visual Quality***

- *Avoid forest operations which lead to a major change in scenic quality in the short term.*
- *Focus on the maximum protection of all existing visual landscape features.*
- *The recommended landscape alteration would be low, least accommodating to visual change.*

Visual Landscape Management Zone B :
VLM Priority – ***Moderate***
VLM Objective – ***Moderate Retention of Visual Quality:***

- *Landscape alterations may be visually apparent.*
- *Focus on the protection of the dominant existing visual landscape features.*
- *The recommended alteration level would be moderately accommodating to visual change.*

Visual Landscape Management Zone C :
VLM Priority – ***Moderate***
VLM Objective – ***Partial Retention/Enhancement:***

- *Landscape alterations may be visually dominant but should reflect the natural lines, forms, colours and textures of the surrounding landscape.*
- *Where possible, seek to optimise and enhance visual quality over the medium to longer term.*
- *The recommended alteration level would be highly accommodating to visual change.*

Special Visual Landscape Management Area – Preservation:
VLM Priority – ***High***
VLM Objective – ***Preservation:***

- *These preservation areas include those landscapes where visual values are of very high aesthetic importance and have equal priority with other critical natural resource values.*
- *The recommended alteration level for these areas allows for little more than natural change or very low impact changes which are carefully planned to accommodate and/or enhance the special visual qualities of the preservation area.*" (p. 1)

"***Special Visual Landscape Management Area-Rehabilitation:***

VLM Priority – ***High/Moderate***
VLM Objective – ***Rehabilitation:***

- *Landscape alterations which have resulted from past management practices or natural events and do not satisfy the desired visual quality objective will require rehabilitation.* […]" (p. 2)

Landscape Management Design Parameters
"*The main harvest, landscape planning and design parameters are:*

- *distribution of harvest area in time and space*
- *scale of the harvest area*
- *apparent shape of the harvest area in the landscape*
- *Harvest area edge configuration and treatment*" (p. 2)

Distribution Of Harvest Areas In Time And Space

- "*Limit the amount of introduced change seen at any one time in any landscape scene.* […]
- *Maximise the time between the harvesting of adjacent and surrounding harvest areas. (Fig. 4.1.1)*" (p. 2)

- "[…] *Where clearfelling is the mode of regeneration, plan for a mosaic of harvest area sizes in all distance zones.* […]" (p. 2)

- "*Harvest area gap sizes should be minimised in all Foreground Distance Zones for all Landscape Management Zones, for example 20 Ha or less (Zone A), 40 Ha or less (Zone B), and 80 Ha or less (Zone C). These sizes will depend on the landform characteristics-vegetation type, landuse patterns and scale etc.*

- *Schedule Harvest area/Gap sequencing from the rear or far Distance Zone of the landscape scene.* […]" (p. 3)

Scale of Harvest Areas

- "*The scale of a landscape is defined by the size and character of landforms, vegetation and landuse patterns or variations within the landscape.* […]" (p. 3)

Apparent Shape of Harvest Area

- "*This refers to the way a harvest area appears in the landscape when seen from a particular viewpoint. Existing natural patterns or shapes resulting from changes in vegetation communities or from areas of rock outcropping are valuable indicators to acceptable shapes for introduced changes.* […]" (p. 4)

- "[…] *If skyline cutting is necessary, arrange the harvest at an angle to the main viewpoint. Visual impacts are lessened if the harvest is along, instead of across, the skyline. (Fig, 4.3.4)*" (p. 4)

Special Areas
Exclusion Areas

- "*These are areas set aside from harvesting and are often linked to natural lines and forms eg. rock outcrops and stream zones. Often, however, for silvicultural purposes and the protection of habitat, these exclusion areas are not often linked to such natural lines. It is important that the most natural position is found for these link reserves and that natural lines and forms are followed where these reserves need to be located. (Fig. 5.1.1)*" (p. 5)

Reserves

- "*Areas of significant scenic and aesthetic quality shall form permanent exclusion areas (PEAS) and will remain free from harvesting activities.* [….]" (p. 6)

- "*PEA's that are identified as Level 1 or 2 Road Reserves often are straight because these lines are parallel to the road alignment and cannot always allow natural lines.* […]" (p. 6)

Finally
"*These guidelines will require levels of interpretation and training in the field and throughout the harvest planning process.*

It is certainly not the intention to leave responsible staff alone now that these have been prepared, but rather further strengthen the integrated approach to harvest planning and design and to satisfy CALM's commitments to forest resource management." (p. 6)

MISSION AND OBJECTIVES – 1993

CALM Annual Report 1992/93. 1993

"***CALM's mission :***

We conserve and manage Western Australia's wildlife and the lands, waters and resources entrusted to the Department for the benefit of present and future generations." (p. i)

TIMBER HARVESTING … 1993 ED. – 1993

Timber Harvesting in Western Australia … 1993 Ed. 1993

Section 1 : Planning and Monitoring
Specification 1.1 Harvesting and Monitoring and Regeneration Plans
Part A : Hardwood
Part A : Hardwood
"*Complete details are contained in the Department's 'Provisional Manual of Hardwood Logging Planning'. The following is a summary.*" (p. 20)
1. Responsibilities
NOTE: REFER TO ENTRY UNDER 1990 EDITION (SIMILAR WORDING)

2. Plan Types
2.3 Short Term Integrated Harvesting and Regeneration Plan
NOTE: REFER TO ENTRY UNDER 1990 EDITION (SIMILAR WORDING)

8. Monitoring and Records
NOTE: REFER TO ENTRY UNDER 1992 EDITION (SIMILAR WORDING)

Section 4 : Coupe Management
Specification 4.1 : Coupe Demarcation
3.1 River and Stream Reserves

NOTE: REFER TO ENTRY UNDER 1990 EDITION (SIMILAR WORDING)
***EXCEPT* FOR THE FOLLOWING SECTION (WHICH WAS FORMERLY TITLED*, In the Area Known Originally as the Woodchip Licence Area*) -**

Native Hardwood Forests

"- *Width of river or stream zones must be varied according to the table below.*

Stream Order	*Width Either Side (approx. m)*	*Total Width (approx. m)*	*Minimum Width Either Side (m)*
First	*30*	*60*	*20*
Second	*30*	*60*	*20*
Third	*30*	*60*	*20*
Fourth	*75*	*150*	*50*
Fifth upwards	*200*	*400*	*100*

Elsewhere
NOTE: THIS SECTION IS NOT IN THIS EDITION

3.2 Road Zones
General:

"- *The purpose of road zones is to provide undisturbed forest vistas on major roads and to act as habitat and movement corridors for fauna.*

[…]

- *Fixed width road zones are only applicable in the Southern Forest Region on what are known as 'Level 1' and 'Level 2' roads. (See Att. 4.1.1)*

Width of Road Zones:

"- *For Level 1 roads the width of the road zone must be at least 200m on both sides of the road. For Level 2 roads the minimum width must be at least 100m on both sides of the road. For all other roads in State forest, any adjacent harvesting is to be carried out in accordance with appropriate VRM principles.*" (p. 62)

In the area known originally as the Woodchip Licence Area
NOTE: THIS SECTION IS NOT IN THE 1993 EDITION

Elsewhere:

"- *VRM principles are to be applied*." (p. 62)

Specification 4.3 : Extraction
NOTE: REFER TO ENTRY FOR THE ABOVE IN 1987 EDITION (SIMILAR WORDING)

Specification 5.5 : Protection of the Visual Resource (Landscape)
NOTE: REFER TO ENTRY UNDER 1990 EDITION (SIMILAR WORDING)

OPERATIONS MANUAL – 1993

Fire Operations Manual : Volume 2 : Fire Protection Instructions. 1993

Fire Protection Instruction 1 : Mater Burn Plan Review Process

Appendix 1 : Planning Steps

"*The following are Planning Steps that need to be considered and appropriately acted upon to properly implement the Prescribed Burning Planning Process*." (Fire Protection Instruction 1 : Page 11) Issued 20/01/99

" *PLANNING STEP* *LM1*

Year Relative to Burn: *-8*

Issue: *Protect High Visual Landscape areas.*
Action: *Review burn proposals and final Landscape Management plans.*
Information: *Final Landscape Management Site Plans from Districts.*
Custodian: *Regional Landscape Planner (or officer responsible).*
Input by: *District, Region, Landscape Planning Officer.*
Received by: *Regional Resource Planners, District.*
Critical: *Yes, to ensure that visual landscape qualities are not unnecessarily compromised, and that burns do not combine to impact heavily on visual quality.*
Other Options: *Local assessment.*" (Fire Protection Instruction 1 : p. 12) Issued 21/09/1993

"*PLANNING STEP* *LM2*

Year Relative to Burn: *-2*

Issue: *Development of Landscape Management (LM) opportunities for the Master Burn Plan (MBP).*
Action: *Review of the MBP and generation of information and planning requirements for preferred LM options for the MBP.*
Information: *Broad scale LM classification data sets*
Other forest value data – vegetation types, topography, scale of burns, season, rotation, type of burn etc.
Custodian: *Regional Landscape Planners.*
Input By: *Master Burn Planning Team.*
Received By: *Master Burn Planning Team*
Critical: *Yes, to ensure that LM is integrated into operations.*
Other Options: *No.*" (Fire Protection Instruction 1 : p. 16) Issued 21/09/93

"*PLANNING STEP* *LM3*

Year Relative to Burn: *-1 (-3 months)*

Issue: *Training and briefing of Landscape Management requirements for burn.*
Action: *Train operational personnel with regards to requirements of individual burn.*
Information: *Lighting pattern, scorch, visual impact etc.*
Custodian: *District Fire Protection Officer.*
Input By: *District and Regional Fire Protection Officer, Landscape Planner (local, regional or specialist as required).*
Received By: *District Burn team.*
Critical: *Yes, ensures appropriate burn.*
Other Options: *No.*" (Fire Protection Instruction 1 : p. 17) Issued 21/09/93

Fire Protection Instruction 28 : Water Point Construction and Maintenance
Construction
"*Relevant Visual Resource Management requirements will be adhered to, especially the levelling out and covering of white clay form hole with gravel, shale etc.*" (Fire Protection Instruction 28 : p. 2) Issued 15/09/93

Fire Operations Manual : Volume 3 : Forest Protection Instructions

NOTE: INCLUDES UPDATES ISSUED 1997

Fire Protection Instruction : 53 : Scrubrolling Prior to Prescribed Burning Operations
7. Method of Operation

- "*Landscaping considerations are most important for visual impact, especially alongside major tourist roads.* […]" (Fire Protection Instruction 53 : p. 3) Issued 09/16/93

Fire Protection Instruction 61 : Objectives and Standards : Aerial Prescribed Burning : Southern Forest Region
Hazard Reduction Burning
Objectives:
Scorch:

- "*No extensive/significant visible scorch on viewsheds from nominated sites, eg: Gloucester Tree*
- *No adverse visual impacts evident after one year from date of burn.*
- *To restrict scorch along South West Highway (or any other road) to 4 metres.*" (Fire Protection Instruction 61 : p. 2) Issued 14/1/97

GUIDELINES - 1993

Dieback Hygiene Evaluation : User Guidelines. 1993

4. Consequences on Land Use
"*The consequences of disease on land uses may vary according to the hazard rating of the site being examined (see Appendix 1.) Always err on the conservative side. e.g. low hazard & few susceptible species may indicate a low level of consequence if the area became infected, but the vegetation may support a very delicate ecosystem of dependant species which has great ecological significance.*

In general the following effects apply:
[...]
Landscape
The effects of disease on landscape can be serious on both environmental and visual resources." (p. 5)

MANAGEMENT PLAN - 1992

Walpole-Nornalup National Park Management Plan 1992-2002. 1992

Visual Landscape Management
Objective
"*Ensure that all uses and management activities are planned and implemented to complement rather than detract from the visual qualities of the Park's landscapes.*" (p. 16)

Actions
"*2. Ensure the following guidelines are incorporated in the development or alteration of moderate visual quality zones:*
[…]
10. Ensure all road construction is carried out in a visually sensitive manner." (p. 17-18)

Management for Conservation – Protection
Fire
Objectives
[…]
- *Protect landscape values from severe damage by uncontrolled fires or from inappropriate burning regimes or suppression techniques.*

[…] (p. 33)

Action
Fire Prevention
"*4. Carry out all burns according to visual resource management principles, particularly in visually significant areas (see Section 6.0 Visual Landscape Management).*" (p. 36)

TIMBER OF HARVESTING … 1992 ED. - 1992

Timber of Harvesting in Western Australia … 1992 Ed. 1992

PART 2 : MANUAL OF LOGGING SPECIFICATIONS
Section 1 : Planning and Monitoring
Specification 1.1 Harvesting and Monitoring and Regeneration Plans

Part A : Hardwood
"*Complete details are contained in the Department's 'Manual of Hardwood Harvesting Regeneration Planning'. The following is a summary.*" (p. 23)

1.1 Responsibilities
NOTE: REFER TO ENTRIES UNDER 1990 EDITION (SIMILAR WORDING)

2.3 Short Term Integrated Harvesting and Regeneration Plan
Plan A : Operations Plan
NOTE: REFER TO ENTRY UNDER 1990 EDITION (SIMILAR WORDING)

3. Plan Amendment
NOTE: REFER TO ENTRY UNDER 1990 EDITION (SIMILAR WORDING)

8. Monitoring and Records
"*District staff must maintain up-to-date field records of areas cut over and silviculturally treated. For each coupe, a Coupe Silvicultural Report (CLM 160) must be completed as quickly as possible following the completion of harvesting. (Refer Attachment 1.1.2)*

A Post Operation Checklist (CLM 813) must be completely between 12 and 24 months following the completion of harvesting. (Refer Attachment 1.1.3)" (p. 27)

Section 2 : Road Construction and Maintenance
Specification 2.4 : Gravel Pit Selection Working and Rehabilitation
Guidelines for the Management and Rehabilitation of Gravel Pits : South West Forest Areas
NOTE: REFER TO ENTRIES UNDER 1990 EDITION (SIMILAR WORDING)

Section 4 : Coupe Management
Specification 4.1 : Coupe Demarcation

3.1River and Stream Reserves
NOTE: REFER TO ENTRY UNDER 1990 EDITION (SIMILAR WORDING*)*

In the area known originally as the Woodchip Licence Area:
NOTE: REFER TO ENTRY UNDER 1990 EDITION (SIMILAR WORDING*)*

Elsewhere:
NOTE: REFER TO ENTRY UNDER 1990 EDITION (SIMILAR WORDING*)*

3.2 Road Reserves
NOTE: REFER TO ENTRY UNDER 1990 EDITION (SIMILAR WORDING*)*

In the area known originally as the Woodchip Licence Area:
NOTE: REFER TO ENTRY UNDER 1990 EDITION (SIMILAR WORDING)

Elsewhere:
NOTE: REFER TO ENTRY UNDER 1990 EDITION (SIMILAR WORDING*)*

Specification 4.3 : Extraction
NOTE: REFER TO ENTRY FOR THE ABOVE IN 1987 EDITION (SIMILAR WORDING)

Specification 5.5 : Protection of the Visual Resource (Landscape)
NOTE: REFER TO ENTRY UNDER 1990 EDITION (SIMILAR WORDING)

SILVICULTURE SPECIFICATION - 1992

Silviculture specification 1/92 : Karri thinning

NOTE: THIS SPECIFICATION SUPERSEDES SILVICULTURE SPECIFICATION 2/90

Silvicultural Objective
"*5. Maintain species and visual diversity*." (p. 1)

Maintenance of Diversity
"*Retain all groups and where practicable, individuals of Allocasuarina. Retain wildlife habitat trees. In mixed stands, retain marri to ensure that a mixture is maintained. Up to 10% of the retained trees may be 'non-crop tree' marri in addition to other species which provide visual diversity or habitat.*

Within the first 50 m of roadsides in VRM Zones A & B, deliberately vary the spacing between trees and retain a variety of tree sizes to create more visual diversity (retain the target stand density overall)." (p. 3)

GUIDELINES - 1992

Guidelines for the Management and Rehabilitation of Gravel Pits : South West Forest Areas. 1992

"*Quarrying on Conservation and Land Management (CALM) lands results in the loss of conservation and production values. It also impacts on aesthetics, recreational and water production values.*" (p. 1)

Visual Impact
"*This must be minimised by adequate screening (buffer) from public roads (150 metres is a suggested minimum), by dog legging the access roads into the pit and by avoiding sites in view of prominent observation points.*" (p. 4)

LEGISLATION - 1991

Conservation and Land Management Amendment Act No. 20 of 1991

"*AN ACT to amend the Conservation and Land Management Act 1984, and to consequently amend certain other Acts.*

[Assented to 25 June 1991.]" (p. 1)

Section 33 Amended
"*21. Section 33 of the principal Act is amended –*

(a) in subsection (1) –
[…]
(dc) to promote the conservation of water, as to both quantity and quality, on land referred to in paragraph (a);

(ii) in paragraph (e) by deleting subparagraphs (i) and (ii) and substituting the following subparagraphs -

' (i) the management of land to which this Act applies;" (p. 12)

"*(ii) the conservation and protection of flora and fauna; and*
(iii) the taxonomy of flora and introduced plants,';
and
(iii) in paragraph (f) by inserting after 'other person' the following -
' , whether in the State or elsewhere';

(b) in subsection (3), by deleting paragraph (b) and substituting the following paragraph –

(i) in the case of nature reserves and marine nature reserves, in such a manner that only necessary operations, within the meaning in section 33A (1) are undertaken;

(ii) in the case of national parks, conservation parks and marine parks, in such a manner that only compatible operations, within the meaning in section 33A(2), are undertaken; or

(iii) in any other case, in accordance with the provisions of section 56 applicable to the land.'.
and

(c) by deleting subsection (4)." (p. 13)

Section 33A Inserted
"*22. After section 33 of the principal Act the following section is inserted-*

Definition of 'necessary operations' etc.
' 33A. (1) In section 33 (3) (b) 'necessary operations' means those that are necessary for the preservation or protection of persons, property, land, flora or fauna, or for the preparation of a management plan." (p. 13)

Section 55 Amended
"*27. Section 55 of the principal Act is amended by inserting after subsection (1) the following subsection (1) the following subsection-*

‘ (1a) A management plan for an indigenous State forest or timber reserve shall specify the purpose, or combination of purposes, for which it is reserved being one or more of the following purposes-

(a) conservation;
(b) recreation;
(c) timber production on a sustained yield basis;
(d) water catchment protection; or
*(e) other purpose being a purpose prescribed by the regulations**.’**.*" (p. 17)

Section 56 Amended
"*28. Section 56 of the principal Act is amended-*

(a) in subsection (1)-

(i) by repealing paragraph (a) and substituting the following paragraph-

‘ (a) in the case of indigenous State forests or timber reserves, to achieve the purpose, or combination of purposes, provided for in the proposed management plan under section 55 (1a);’;

(ii) in paragraph (c) by inserting after ‘national parks’ the following-

‘ and conservation parks’;

and

(iii) in paragraph (d) by inserting after ‘and fauna’ the following-

‘ , and to preserve any feature of archaeological historic or scientific interest’;

and

(b) by repealing subsection (2)." (p. 17)

Land may be classified
"*(62)(2) A classification of land or waters as a temporary control area under subsection (1)(d) shall only be made for the purposes of public safety or the protection of flora or fauna, or both flora and fauna, and a notice of classification –*

(a) shall not have effect for a period exceeding 90 days;
but
(b) may be made more than once for the same purpose and for the same area." (p. 19)

"*(3) A classification, or amendment of classification, of any land or waters shall not be made under this section –*

(a) unless it is in conformity with the provision of section 56 which is relevant to, or any management plan for, that land or those waters; and

(b) in the case of land to which section 16 applies, unless the owner, and any person occupying the land with the consent of the owner, has given approval in writing to the classification or the amended classification.

(4) In this section 'controlling body' means the Commission or the Authority.'." (p. 20)

POLICY STATEMENTS – 1991

Policy Statement No. 18 : Recreation. 1991

Policy
"*2.1.4.1 ... The Department will endeavour in its planning and management to preserve and/or enhance the inherent scenic values of all public travel routes.*" (p. 40)

"*2.1.4.2 Selected public roads on CALM managed lands which have important scenic values and which afford outstanding views of surrounding landscapes may be identified, promoted and managed as scenic drives. The identification and selection of such roads will be based on the Department's Visual Resource Management System criteria (see Policy Statement No. 34) as well as other considerations such as available interpretative opportunities, driver safety and the resources required for management.*" (p. 40)

2.5 Picnicking and Barbecuing
Policy
"*2.5.3 Picnic and barbecue areas will be located in stable landscapes which are capable of sustaining intensive visitor use over the long term. Particular attention will be given to ensuring sites are situated so that they do not unduly impact on environmental, cultural or scenic values. The site planning and design guidelines as outlined in Policy Statement 1.9 will be adhered to.*" (p. 56)

Policy Statement No. 40 : Road Management. 1991

Performance Indicators
"*2. Visual resource values are maintained and enhanced.*" (p. 4)

SILVICULTURE SPECIFICATION – 1991

Silviculture Specification 2/91 : Treemarking and Silvicultural Treatment in the Jarrah Forest

NOTE: THIS SPECIFICATION SUPERSEDES SILVICULTURE SPECIFICATIONS 5/89 AND 7/89

Introduction
"*The aim of silvicultural practice in the jarrah forest managed for multiple use purposes is to develop or maintain a forest structure that will achieve objectives for nature conservation, timber production, water quality and water production, heritage and aesthetics.*

This specification details:

the broad goals for each value,
requirements for integrated planning,
the standards to be achieved for all values, and
guidelines for field application.

and outlines the variation to silvicultural practice that will be made to cater for various forest values, recognising their relative importance in different areas. It deals with the application of these strategies at the coupe level in areas from which timber is harvested.

The broader strategy that deals with zoning of the forest and the location, arrangement and harvesting is established at the regional planning level. This includes determining where harvesting can best located to achieve the strategic goals, the allocation of zones (e.g. water, wildlife) from which harvesting is to be excluded and the establishment of relative priorities between values.

[…]

The treemarking and silvicultural treatments outlined in Sections 4 –7 of this specification do not apply to extensively managed areas of eastern and Sunklands jarrah forest (Sect. 3.2.3). A new specification is being prepared to cover these areas." (p. 2)

2.4 Visual Resource
Management Objective

"* *To implement harvesting in a manner compatible with the visual resource management (VRM) objectives specific to the site.*

* *To maintain, enhance and improve scenic quality.*" (p. 4)

Silvicultural Strategies

"* *The visual resources of each area will be inventories and assessed to delineate and map Visual Resource Management Zones with the following Visual Quality Objectives:*

Visual Resource Management Zone A
VRM Priority – High
VRM Objective – Maximum Retention

Avoid landscape alterations which would lead to a discernible deterioration in scenic quality in the short term. Focus on the maximum protection and retention of all existing visual attributes of the characteristic landscape.

The recommended alteration is low, least accommodating to visual change,

Visual Resource Management Zone B
VRM Priority – Moderate
VRM Objective – Retention

Landscape alterations may range from visually apparent to visually dominant. Focus on the protection and retention of the dominant existing visual attributes of the characteristic landscape.

[…]

Visual Resource Management Zone C
VRM Priority – Moderate
VRM Objective – Partial Retention/Enhancement

[…]

Special Visual Resource Management Area – Preservation
VRM Priority – High
VRM Objective – Preservation

These preservation areas include those landscapes where visual resource values are of very high aesthetic importance and have priority over other natural resource values.

The recommended alteration level for these areas allow more than natural change or very low impact changes which are carefully planned to accommodate and/or enhance the special visual qualities of the Preservation Area.

Special Visual Resource Management Area – Rehabilitation
VRM Priority – High/Moderate
VRM Objective – Rehabilitation

Visual resource alterations which have resulted from past management practices or natural events and do not satisfy the Visual quality objective will require rehabilitation. […]

* *Harvesting and treatment practices are to be varied in accordance with the site's visual resource management objectives.* […] *Coupes will be designed to attain the VRM objective with minimum impact on other values."* (p. 5)

3.1Inventory
"*The following are essential planning tools*

(1) Contour Maps showing watercourses
(2) Visual Resource Management Zones
(3) Rainfall Zones
(4) API Type maps, and other maps showing cutting histories and silvicultural treatments
(5) Streams and other permanent zones
(6) Wildlife Values

It is also valuable to have current 230mm aerial photography as this assists in the interpretation of forest structure. Site/vegetation type maps for the area are useful indices for several values.

A coupe plan is prepared showing:

WATER: Harnesssed catchments
Rainfall Zones
Stream Zones=

VISUAL RESOURCE: VRM Zones (including seen area)
VRM Special Areas
Roadside Zones (Southern Forest Region)=

WILDLIFE: Significant values

TIMBER: Low Value/Non Productive Areas
Structural Types (where known)

= Note that these zones are currently subject to review" (p. 6)

3.2Field Inspection
"*A field inspection of each coupe must be made to verify the values that are present.* […]" (p. 6)

4. Treemarking
4.1 General
"*Treemarking is the means by which stand objectives are marked out in the forest so that harvesting and tending operations can proceed. By making trees to be retained the forester provides a vision of the future development of the stand.*

Before marking commences, the forester must know:
the water, visual resource and wildlife objectives within the coupe, and the type of trees likely to be removed commercially.

Marking specifications will vary in accordance with the above objectives. (See Appendix 2).

The first task in marking a patch of trees is to determine the silvicultural objective (thinning, regeneration release, or shelterwood) and whether its boundaries are apparent. The process for making these decisions is outline in 'Treemarking and Silviculture in the Jarrah Forest' (1987).

Only after the objective has been identified for each patch can individual trees be marked.

Marking habitat trees and logs for retention are the first priority." (p. 9)

4.2 Marking to Promote Growth (Thinning)
Diversity
"[…] *Mark to protect native pear, river banksia and examples of snottygobble, peppermint, large blackboys etc. Additional diversity of size and density of retained trees is required in the first 150 metres of VRM Zone A. (Appendix 2).*" (p. 9)

Gap Size
"*Where the gap would exceed the maximum dimension (See Appendix 2) temporary exclusion areas of uncut forest are required to confine the gap to that maximum. These must be at least 50-100 metres across depending on VRM zone (Appendix 2) and will not be available for timber harvesting until the next cutting cycle.*" (p. 10)

Visual Resource
"*Retained vegetation in the roadside zones (Appendix 2) is to be free from visible damage and scarring.* […]

[…] *Log grades with a limited market shall be removed from the roadside zones in preference to their removal from remote and unseen areas.*" (p. 11)

6.2 Priorities for Treatment
"*The resources required for silvicultural treatment following harvesting will not always be sufficient to complete the available work. In allocating resources the following priorities will be adopted:*
[…]
." (p. 12) *(6) Areas of high landscape sensitivity where treatment is essential to meet the management objective*

MANAGEMENT PLAN – 1990

<u>Lane Poole Reserve Management Plan 1990-2000. 1990</u>

Resources and Land Use
Protection
"*Protection of the ecosystem is fundamental if its values are to be maintained. Major values currently recognized in the northern jarrah forest are water, timber, recreation, scientific study, educational resources, flora, fauna, geological resources, landscape, and other forest products such as honey and wildflowers.*

Appropriate management of the forest ecosystem will help conserve these important values. Management must minimise damage from wildfires, dieback disease and other pathogens, feral animals, weeds and uncontrolled recreation. Only by controlling these damaging agents will it be possible to manage the Reserve in a way that ensures conservation of its values." (p. 33)

C4 Land Management
C4.2 Landscape
"*The objective is to plan and manage activities in the Reserve in ways that recognise and complement rather than detract from the inherent visual qualities of the environment.*" (p. 78)

"[…] *Visual resource management is dependent on an assessment of the landscape and an understanding of landscape values and the effects of the proposed land uses on these values.*" (p. 78)

Prescription
"*1. In road and recreation site construction and maintenance, maximise the scenic values of the landscape.*

2. Reduce existing negative visual impacts by closing unnecessary tracks and roads. Re-direct traffic and re-align roads from visually obtrusive areas. Rehabilitate degraded areas where possible.

3. Ensure that management activities remain unobtrusive within the landscape as much as possible, eg. firebreak construction, gravel extraction.

4. Carry out visual resource assessments as required." (p. 79)

C7 Protection
C7.1 Fire
"*The 10 objectives are:*

[…]

To protect landscape values from severe damage by uncontrolled fires or from inappropriate burning regimes or suppression techniques.

[…]" (p. 85)

C13.2 Timber Utilization
"*The objective is to ensure any logging operations remove forest produce in a way which minimises damage to landscape, soil and water values and protects against impacts from dieback disease.*" (p. 119)

Prescriptions
"*5. CALM will assess the Recreation Zone for its current and potential recreation and landscape values and will review silvicultural criteria for wood production. Visually prominent areas will be delineated and excluded from commercial timber utilization. Other areas will be excluded from cutting if needed to protect water values or the aesthetic value of roadside vegetation.*

Within the remaining areas, cutting will be based on accepted forestry practices concentrating on forest stands which have been severely degraded by fire or dieback." (p. 120)

C13.7 Public Utilities
Prescriptions
"*3. Maximum effort must be made to minimise the environmental and visual impacts of any future power lines through the Reserve.*" (p. 126)

MANAGEMENT PLAN – 1990

Waroona Reservoir and Catchment Area Management Plan 1990-2000. 1990

8.4.2 Forest Management
Objective
"*To enable a level of hardwood production from the area of State forest that is sustainable indefinitely, consistent with requirements such as protection of water catchment, conservation and provision of recreational opportunity.*" (p. 39)

Prescriptions
- "*CALM forest management prescriptions will be routinely applied within the catchment area.*" (p. 39)

- "*Future logging activity will not visually impair recreational activities.*" (p. 40)

8.4.3 Landscape Management
Objective
"*To maintain the visual amenity of the areas of principal recreational activity so that the recreational experience is not adversely affected.*" (p. 40)

Rationale
"*Visual quality of the catchment landscape, particularly within the viewsheds available from the reservoir surface, foreshores and scenic drive, is a fundamental component of the recreational resource and, therefore, requires careful management.*" (p. 40)

Prescriptions
- "[…]

- *The visual effects of any work conducted within the catchment area will be evaluated by CALM prior to implementation. Particular attention will be paid to activities within the restricted land management unit (marked on map 7)*

- *Future forest product harvesting from within the restricted zone will utilize methods that have minimal visual effects on the reservoir viewshed..*" (p. 40)

8.4.4 Mining
Objective
"*To minimise the impacts of bauxite mining in the catchment and exclude mining activity from the viewshed of the reservoir.*" (p. 40)

8.4.5 Gravel Extraction
Objective
"*To minimise the effect of the extraction of gravel on conservation values, landscape values, water quality and rehabilitation potential.*" (p. 40)

Rationale
"*Extraction of gravel from the banks of the reservoir is sometimes conducted but is considered to be incompatible with a number of other uses, principally in regard to visual acceptability and bank stability.*" (p. 40)

Prescription
"*The extraction of gravel will not be allowed within the viewshed from the foreshore or the reservoir surface when the dam is full. Gravel extraction will only be considered from the banks between low water and full*

water levels in special circumstances under strict conditions approved by the Consultative Committee and by CALM. Strict attention must be paid to timing of the operation, rehabilitation and the prevention of spread of dieback disease." (p. 41)

MANUAL OF HARDWOOD … 3RD ED. – 1990

Manual of Logging Specifications … 3rd Ed. 1990

Section 1 : Planning
Specification 1.1 : Logging Plans
1. Responsibilities
"*In all cases, planners must produce fully integrated plans and consult with Regional staff, District staff, Specialist Branch staff and where relevant Timber Industry Representatives during plan preparation.*" (p. 1)

2. Plan Types
2.3 Short Term Integrated Logging Plan
"*This is the tertiary level integrated logging plan which shows in detail proposed logging areas over a 2 year period.*

One plan per supply area is produced and issued during the first week of September in the Northern and CFR and the first week of January in the SFR.

Primary users of the plan are District staff, Regional staff, Timber Production Branch and Contractors." (p. 2)

"*The plans shall show:*

> *1) 1:250,000 overview plan showing the approximate location of all proposed logging areas for each year of the plan.*
> *2) 1:50,000 block plan showing proposed logging boundaries and major access - also show CALM grid.*
> *3) 1:25,000 plans showing:*
>
> ***Plan A** - Operations plan*
> *- boundary of proposed logging.*
> […]
> *- CALM mapping grid.*
> […]" (p. 2)
> -" *VRM buffers as they become available.*
> *- special care zones (eg., areas close to domestic dams - 9 refer Section 4.1 of this Manual).*
> […]
> *- contours.*
> *- areas previously cut over.*
> *- no entry areas.*
>
> […]

3.Plan Amendment
Logging plans can only be amended by the logging plan officer. Amendments must be approved in writing by the Regional Manager.

4. Monitoring and Records
Logging cannot commence until an approved logging plan has been issued and CLM 109 has been signed by the Regional Manager (ref Part 6 of this specification).

District staff must maintain up-to-date field records of areas cut over and silviculturally treated. This information must be ready when inventory officers visit Districts within one month of the close of the logging season (refer to revamped HOCS issued from SOHQ on 14/8/90 and CLM 160 - Coupe silviculture report - Jarrah refer Attachment 1.1.2)." (p. 3)

Section 2 : Road Construction and Maintenance
Specification 2.4 : Gravel Pit Selection Working and Rehabilitation
Guidelines for the Management and Rehabilitation of Gravel Pits – South West Forest Areas
2.7 Visual Impact
"*This must be minimised by adequate screening (buffer) from public roads (150 metres is a suggested minimum), by dog legging the access roads into the pit and by avoiding sites in view of prominent observation points.*" (p. 37)

Section 4 : Coupe Management
3.1 River and Stream Reserves
General:
"[…]
- They also provide a softening of the visual impact of logging operations.
[…]" (p. 53)

In the area known originally as the Woodchip Licence Area:
"*- Width of a river reserve must be at least 200m on each side of the river.*

- Width of a stream reserve must be at least 100m on each side of the stream." (p. 53)

Elsewhere:
"*- For all second or third order (or higher) watercourses within 3km of a catchment reservoir, the width of the stream reserve must be, a minimum of 100m on each side of the watercourse, and a minimum for other streams. (See fig.4.1.1 for explanation of stream orders).*
- For watercourses outside the 3km zone, but within harnessed catchments, the respective minimum widths must be 50m and 25m.

- For watercourses in non-harnessed catchments, stream reserve w-,~-, will be at the discretion of the Forest Officer in Charge.

3.2 Road Reserves
General:
- The purpose of road reserves is to screen the unsightly aspects of logging operations from view on major roads and to act as habitat and movement corridors for fauna.

In the area known originally as the Woodchip Licence Area:
- Width of road reserves must be at least 400m on both sides of major roads.

Elsewhere:
- Width of road reserves must be 100 to 200m on both sides of main roads.

- Width of road reserves must be between 0 and 100m on both sides of other roads
[…]" (p. 54)

Specification 4.3 : Extraction
NOTE: REFER TO ENTRY FOR THE ABOVE IN 1987 EDITION (SIMILAR WORDING)

Section 5 : Environmental Protection
Specification 5.5 : Protection of the Visual Resource (Landscape)

NOTE: REFER TO ENTRY 1989 EDITION (SIMILAR WORDING)
***EXCEPT* FOR THE FOLLOWING SECTION –**

"*2. Visual Resource Management (VRM) must be consistent and, if necessary, a harvesting proposal must include a site inventory and analysis of landscape factors. An assessment of projected impact of the operation on scenic values is required*." (p. 97)

SILVICULTURE SPECIFICATION – 1990

Silviculture Specification 2/90 : Karri Thinning

Silvicultural Objective
"[…]
5. Maintain species and visual diversity.
[…]." (p. 1)

Maintenance of Diversity
"*Retain all groups and where practicable individuals of Allocasuarina. In mixed stands, retain marri to ensure that a mixture is maintained. Retain wildlife habitat trees.* […]" (p. 3)

POLICY STATEMENT – 1989

Policy Statement No. 34 : Visual Resource Management on Lands and Waters Managed by CALM. 1989

1. Objective
"*To ensure that all land uses on lands and waters managed by CALM are planned and carried out in ways that sustain the beauty of the natural environment.*" (p. [1])

2. Background
"*Many land uses and management practices can change the character of the landscape. Such uses and practices, while they may be scientifically or technically correct, do not always result in attractive landscapes, especially in the short term. Moreover, where operations are not carefully planned and executed, the result can be long term or permanent degradation of the visual resource. In many instances, it is this loss of scenic quality associated with environmental change that is most apparent to the public and which results in criticism of land-management activities. Often this can be avoided through sensitive planning and management of the visual resource.*

Landscape management, or visual resource management (VRM) as it is frequently termed, is the scientific discipline concerned with the management of land, vegetation and water resources so as to maintain or improve their visual quality." (p. [1])

The prime goal of visual resource management is to ensure that all uses and activities are planned and implemented so as to complement rather than detract from the inherent visual qualities of the environments in which they occur.

Visual Resource Management is a positive and integra1 component in land use planning and management processes. […]" (p. [2])

3. The Basis for Visual Resource Management on CALM Lands
"*The term 'landscape' refers to the appearance or visual quality of an area as determined by its geology, soils, landforms, vegetation, water features and land use history. Visual Resource Management is based on the premise that the visual quality of a landscape is a resource in its own right. This resource can be assessed and managed in much the same way as other resource values such as fauna, flora, water, timber and recreation.*

Managing the visual resource is dependent on a knowledge and assessment of the landscape itself as well as a thorough understanding of proposed land use(s). After the various landscape elements have been identified and assessed, it is possible to evaluate how particular management alternatives will affect the appearance of any landscape and subsequently to develop appropriate landscape prescriptions compatible with other resource management objectives.

In the past two years, the Department has adopted a systematic approach to inventorying and assessing landscape values based on systems now operating in other Australian States and overseas. This approach enables scenic values to be described, evaluated, compared and mapped with a minimum amount of subjectivity. To date, landscape values in the Southern Forest Region and several national parks elsewhere in the State have been classified and mapped using the VRM System." (p. [2]-[3])

4. Policy

"*In pursuit of the objective outlined in this policy statement, the Department will:*

4.1 Formulate a visual resource classification and management system that can be used to identify, evaluate and ameliorate visual impacts and that is applicable to both broad scale assessment and detailed project planning management.

4.2 Prepare comprehensive landscape planning and management guidelines and prescriptions covering all operations or activities that have an effect on the beauty of the landscape.

4.3 Ensure that CALM staff and other individuals who operate on departmental lands are trained in and apply the Visual Resource Management System.

4.4 Harvest multiple use forest areas in which timber production is permitted in ways that sustain the beauty of the forest and according to accepted landscape planning and design principles." (p. [3])

4.5 Establish, manage and harvest plantations in accordance with accepted landscape design principles so that discordant or intrusive effects on the landscape are minimized.

4.6 Locate and design roads, walk tracks, fire breaks and trails and utility corridors to minimize visual impacts on the areas they traverse.

4.7 Plan and design facilities for recreation that are in harmony with the natural environment.

4.8 Locate and design all new buildings and structures using materials and colours compatible with the surrounding landscape.

4.9 Design and maintain a standard system of signs which are in harmony with the landscape to cater for the various sign requirements of the Department.

4.10 Ensure that all mining activities including exploration and rehabilitation phases are planned so as to minimise the impact on existing landscape values .

4.11Ensure that dieback disease rehabilitation practices are carried out in a manner that is compatible with or enhances scenic quality.

4.12 Plan fire management programs so as to minimise negative scenic impacts.

4.13 Evaluate land use proposals on adjacent lands in terms of their potential impact on landscape values and recommend how these can be mitigated." (p. [4])

"*4.14 Assess the landscape impact of all water supply proposals including the construction of dams and other structures on lands managed by CALM with a view to minimising visual impact.*" (p. [4])

5. Strategies
"*Implementation of these policies will be achieved through the adoption of the following strategies:*
Staffing
5.1 A Visual Resource Management Section will be established and staffed within the Recreation, Landscape and Community Education Branch. Members of the Section may be based in regions.

5.2 A Coordinator will be appointed to head the Section.

5.3 Operations staff in regions and districts will assist with the assessment and mapping of visual resource values." (p. [4])

Landscape Assessment and Mapping
"*5.4 A Visual Resource Management System will be developed for lands and waters managed by CALM (refer to Figure 1).*

5.5 The assessment and mapping of visual resource values will commence in the South West Land Division, with the initial work concentrated in the three Forest Regions. Other areas managed by CALM will be assessed and mapped as time and resources permit." (p. [5])

"*5.6 Visua1 resource information will be progressively into the Department's Geographic Information*

5.7 The assessment and mapping of visual resource values will, as time and resources permit, be undertaken as part of the preparation of all Regional and Area Management plans." (p. [6])

Preparation of Guidelines and Prescriptions
"*5.8 Management guidelines specific to timber harvesting and reforestation, road construction and maintenance, prescribed burning and other fire management methods, mining and dieback rehabilitation, design of utilities and firebreaks, recreation facilities will be developed.*

5.9 Field trials will be carried out to evaluate the appropriateness of management guidelines and to develop prescriptions specific to particular operations and landscape character types." (p. [6])

Training
"*5.10 An on-going program of in-service training courses, workshops and field days on VRM principles and procedures will be conducted for CALM officers whose activities impinge on the visual resource. Similar training programs will also be conducted for other users of the CALM estate, including the timber and mining industries.*" (p. [6])

MANAGEMENT SYSTEM – 1989

Summary of The Visual Landscape Management System. 1989

"*The Visual Landscape Management System utilises a resource base with two major components:*
1. *Physical Landscape and*
2. *Social Considerations (people's concern for scenic quality).*

A brief step by step summary of the Visual Landscape Management System process follows, refer Figure 1:

***Step 1 : VISUAL LANDSCAPE CHARACTER TYPING** requires identification and description of Visual Landscape Character Types, which are areas of common distinguishing visual characteristics based upon*

landform and landcover patterns in vegetation, water and landuse. The 39 Landscape Character Types of Western Australia are shown on the map below.

[…]

Step 2 : VISUAL QUALITY CLASSIFICATION *requires delineation of the total landscape into Visual Quality Classes (High, Moderate, and Low) using aerial photographs and descriptive Frames of Reference which are based upon diversity, uniqueness, prominence and naturalism of landform, vegetation and waterform within each Visual Landscape Character Type. See overleaf for a Frame of Reference example.*" (p. 1)

"***Step 3 : OBSERVER ANALYSIS*** *requires identification and classification of Observer Volumes and Observer Types for all travel routes and use areas.*" (p. 2)

"***Step 4 : SENSITIVITY LEVELLING*** *requires classification of all travel routes and use areas into Levels of Public Sensitivity (Level 1 – High, Level 2 – Moderate, Level 3 – Low, Level 4 – Very Low) based upon public perceptions of landscape and the criteria listed below.*

Level 1 – Viewer Sensitivity

1. *State highways and other main roads (sealed or unsealed) with high levels of vehicle usage.*
2. *Designated tourist, scenic drive, or* ***scenic*** *forest tour roads (sealed or unsealed)*
3. *Recreation, conservation, cultural or scenic sites, areas, viewpoints, and lookouts of, national, or state significance. (Including their access routes as per 1 and 2 above).*
4. *Walking tracks or national or state significance.*
5. *Residential areas.*
6. *Rail and tram lines of cultural, historic or scenic significance.*
7. *Navigable rivers and streams, lakes and reservoirs of national or state recreation significance.*
8. *Any Level 2, 3, or 4 travel routes or use areas planned for upgrading to Level 1 within 5 years.*

Level 2 – Viewer Sensitivity

1. *Main roads with moderate levels of vehicle usage (sealed or unsealed)*
2. *Recreation, conservation, cultural or scenic sites, areas, viewpoints, and lookouts of regional or high local significance (including their access routes as per 1 above).*
3. *Navigable rivers and streams, lakes and reservoirs or regional recreational significance.*
4. *Walking tracks of regional significance.*
5. *Any Level 3 or 4 travel routes or use areas planned for upgrading to Level 2, or Level 1 planned to be downgraded, within 5 years.*

Level 3 – Viewer Sensitivity

1. *All remaining roads with low levels of vehicle usage (sealed or unsealed).*
2. *Recreation and other use areas of local significance (including their access routes as per 1 above).*
3. *Navigable rivers and streams, lakes and reservoirs of local recreational significance.*
4. *Walking tracks of local significance.*
5. *Any Level 4 travel routes or use areas planned for upgrading, or Level 2 planned to be downgraded, to Level 3, within 5 years.*

Level 4 – Viewer Sensitivity

1. *Management roads with infrequent traffic – very low levels of vehicle usage.*
2. *Any other remaining forest tracks with infrequent usage.*" (p. 3)

"***Step 5 : Seen Area Mapping*** *requires identification and delineation of Seen Areas and Distance Zones – Foreground (0-0.5 km), Middleground (0.5 – 6.5 km) and Background (6.5 – 16 km) from all Level 1, 2 and 3 travel routes and use areas either manually or by using the computer software programs.*

Step 6 : Compositing *requires integration of the Physical Landscape and Social Considerations data by an overlay process resulting in Visual Landscape Management Zones and associated Visual Management Priorities and Objectives.*

The matrix used to determine Visual Landscape Management Zones and correlative Visual Management Priorities and Objectives follows:" (p. 4)

NOTE: REFER TO ACTUAL DOCUMENT FOR MATRIX

"*The Visual Landscape Management Objectives provide measurable standards or objectives for the visual management of subject lands. The objectives for the Landscape Management Zones generated by the previous matrix are defined below.*

VISUAL LANDSCAPE MANAGEMENT (VLM) OBJECTIVES

- ***Visual Landscape Management Zone A :***
  VLM Priority – ***High***
  VLM Objective – ***Maximum Retention of Visual Quality:***
  - *Avoid operations which lead to a major change in scenic quality in the short term.*
  - *Focus on the maximum protection of all existing visual landscape features.*
  - *The recommended landscape alteration would be moderately accommodating to visual change.*

- ***Visual Landscape Management Zone B:***
  VLM Priority – ***Moderate***
  VLM Objective – ***Moderate Retention of Visual Quality:***
  - *Landscape alterations may be visually apparent*
  - *Focus on the protection of the dominant existing visual landscape features.*
  - *The recommended alteration level would be moderately accommodating to visual change*

- ***Visual Landscape Management Zone C:***
  VLM Priority – ***Moderate***
  VLM Objective – ***Partial Retention/Enhancement:***
  - *Landscape alterations may be visually dominant but should reflect the existing lines, forms, colours and textures of the surrounding landscape.*
  - *Where possible, seek to optimise and enhance visual quality over the medium to longer term.*
  - *The recommended alteration level would be highly accommodating to visual change.*

- ***Special Visual Landscape Management Area – Preservation:***

  VLM Priority – ***High***
  VLM Objective – ***Preservation:***
  - *These preservation areas include those landscapes where visual values are of very high aesthetic importance and have equal priority with other critical natural resources values.*
  - *The recommended alteration level for these areas allows for little more than natural change or very low impact changes which are carefully planned to accommodate and/or enhance the special visual qualities of the preservation area.*

- ***Special Visual Resource Management Area- Rehabilitation:***

  VLM Priority – ***High/Moderate.***
  VLM Objective – ***Rehabilitation:***

- *Landscape alterations which have resulted from past management practices or natural events and do not satisfy the desired visual quality objective will require rehabilitation.* […]" (p. 5)

NOTE: REFER TO ACTUAL DOCUMENT FOR FLOW CHART – VISUAL LANDSCAPE MANAGEMENT SYSTEM : PROJECT APPLICATION LEVEL

"*At this time, the Visual Landscape Management System has been completed at the Broad Scale Planning Level for the southwest land division of Western Australia. Each District office has comprehensive assessment maps of Scenic Quality Classes, Seen Area Sensitivity Levels and Visual Landscape Management Zones. The system is being effectively implemented on various alteration projects throughout WA. It is planned that the basic assessments made by the system will be updated every five years, responding to changes in land use patterns over time.*" (p. 6)

Project Application Level
"*The second stage of the Visual Landscape Management System is developed for the Project Application Level. This stage allows for the integration of Visual Landscape Management Objectives (recommended in the Broad Scale Planning Level) with other environmental resources in the process of land use allocation and management planning. Once the attainable Visual Management Objectives are determined and other resource development plans are made, the Visual Absorption Capability assessment can be used to estimate Management Constraint Levels and recommend Project Guidelines for the development plans. The system applied at the Project Application Level is illustrated as Figure 2.*

In conclusion, the Visual Landscape Management System offers a comprehensive inventory and assessment of visual resources in Western Australia's landscapes. The system is designed for Broad Scale Planning Levels as well as Project Application Levels. It considers the scenic quality of the physical landscape and public sensitivity to visible landscapes. It recommends a range of objectives for different Visual Landscape Management Zones and recognises the importance of other resources in land management. Finally the system considers different landscape alteration types in terms of the landscape's Visual Absorption Capability, offering guidelines for project planning and implementation." (p. 6)

STRATEGIC PLAN – 1989-1993

Strategic Plan For the Period 1989-1993. 1988

General Principles/Philosophy
"*The Department is committed to the principle that it is managing public land and natural resources, and conserving indigenous wildlife on behalf of the public of Western Australia. Consequently, particular importance is placed on informing the public of the Department's activities and wherever possible involving the public.*

The regional system of management as adopted by the Department ensures that its officers develop a detailed knowledge of the area of their operations, are available to interact with local communities and resolve problems associated with local conservation and land management operations. […]" (p. 10)

5. Mission
"*Western Australia has a beautiful and diverse natural environment which provides material, aesthetic and spiritual benefits. The natural environment is an essential component of the quality of life for West Australians. The statement of mission for the Department of Conservation and Land Management is therefore:-*

> *TO CONSERVE WESTERN AUSTRALIA'S WILDLIFE AND MANAGE LANDS AND WATERS ENTRUSTED TO THE DEPARTMENT FOR THE BENEFIT OF PRESENT AND FUTURE GENERATIONS.*" (p. 11)

6. Primary Objectives
"*Five primary objectives have been established:-*

- *MANAGEMENT*
  To protect, restore and enhance the value of resources entrusted to the Department so as to meet, as far as possible, the diverse expectations of the community.

- *CONSERVATION*
  To conserve the indigenous plant and animal species and environmental processes in natural habitats throughout the State.

- *PRODUCTION*
  To provide and regulate the supply of those renewable resources that Government decides should be used, on a sustained yield basis for the satisfaction of long term social and economic needs, and in a manner that minimises impact on other values.

- *RECREATION*
  To facilitate the public enjoyment of the natural attributes of public lands and reserved waters in a manner that does not compromise conservation and other management objectives.

- *KNOWLEDGE*
  To seek a better understanding of the natural environment and to promote awareness and appreciation of its values." (p. 12)

8. Major Outcomes Or Key Result Objectives Planned For the Period 1989-93
"*Twenty one major outcomes are identified for this strategic plan. All are concerned with getting the Department in a position to most effectively carry out its charter. The aim is to expand, renew or create as the case may be, systems and procedures so that CALM can be efficiently managed with the resources available.*

The desired major outcomes are:" (p. 19)

> "***8.18 A landscape management strategy will be written and implementation commenced.***
>
> *An important facet of protection, restoration or enhancement of natural landscape values is to ensure that ALL departmental operations are planned and implemented so as to minimise deleterious impact from such activities.*" (p. 26)

10. The Organisation
10.3 Planning
"*Detailed planning of conservation and land management activities is a key function in the Department.*

> *Under the Conservation and Land Management Act, there is a responsibility to prepare management plans for all land and water vested in either the Lands and Forest Commission or the National Parks and Nature Conservation Authority. Such plans must be available to the public for comment for a period of at least two months. They apply for a maximum period of ten years.*

Two levels of this planning are undertaken. These are regional and area management plans.

Regional management plans are to be prepared for each CALM administrative region. They will cover all categories of land and water entrusted to the Department. Each plan will described the management objectives to be achieved over the life of the plan and the strategies for implementation which are to be adopted.

Area management plans will apply to specific areas such as a national park, marine park, nature reserve, marine nature reserve. State forest, or other reserve. These are more detailed than regional management plans.

Area management plans will be prepared only where there are requirements that cannot be adequately considered by a regional management plan. Each area management plan will also describe management objectives and strategies for implementation." (p. 31)

"*Other major plans prepared by the Department are issue plans that are either a follow up to an approved management plan, or consist of interim guidelines for necessary operations where there is not yet an approved management plan. Issue plans cover all relevant topics, such as site plans, fire plans, dieback plans, recreation plans, resource allocation plans and wildlife management programs. Issue plans are generally prepared by district or regional staff in conjunction with research and other specialist branches within the Department.* […]" (p. 32)

In addition, the Department prepares operational guidelines, manuals and prescriptions. These draw on the results of research and experience and are used to implement the works and activity programmes derived from the planning process." (p. 32)

10.4 Regionalisation
"*The Department is extensively regionalised in a way which provides the benefits of small autonomous organisations in close proximity to their area of operations while providing access to services that are best provided by a larger integrated organisation. Regions are responsible for the management of all departmental lands and waters and for conservation of flora and fauna within their boundaries. According to the intensity of activity regions are subdivided into districts.*" (p. 32)

"*The general responsibilities allocated to regions are to:*

- "[…];
- *supervise and regulate industry (e.g. wildflower pickers, apiarists, timber and mining operations) on departmental and some other land;*
- *preserve or restore the natural environment on departmental land and water;*
- *provide information and advice on land management and conservation to people in the region; promote conservation and good land and marine area management;*" (p. 33)

STRATEGIC PLAN (SOUTHERN REGION) – 1989

Strategic Plan : Southern Forest Region. 1989

3. Regional Strategic Goals
"*The goals listed below are broad statements largely drawn from goals set by the amalgamating agencies before CALM. These goals are not specific, quantifiable or measurable but provide the basis for formulating KEY RESULT OBJECTIVES which is the next stage of the Strategic Planning process.*

[…]

Landscape

To ensure that activities on CALM land are planned and carried out in ways that complement rather than detract from the inherent visual qualities of the natural environment. Landscapes will be protected from impairment of visual amenity.

[…]" (p. 7)

Key Result Objectives: Basic Raw Materials
"*Objective*
1. To implement the CALM policy in regard to the mining of Basic Raw Materials.

2. To maintain an ongoing and effective liaison with our clients, particularly Local Government. To ensure B.R.M. pits are established with minimal visual impact on landscape. To rehabilitate finished pits promptly." (p. 49)

Environmental Controls : Codes of Logging Practice
"*Objective*
1. Ensure all logging contracts contain a comprehensive 'Code of Logging Practice." (p. 58)

Environmental Controls : Soil Resources
"[…]
Measure of Performance
'Priority'
[…]
2. *No ugly winter landings on level 1 forest roads. VRM standards to be applied.*" (p. 59)

Landscape
"*Objective*
1. With landscape architects develop prescriptions for Visual Resource management.
Measure of Performance
1. Evaluate all coupes before demarcation of boundaries and install boundaries which will minimise visual impacts. Monitor results annually.

Objective
2. Maintain integrity of road reserve buffers
Measure of Performance
1. *No intrusions of clear felling in Road Reserves. Where Road Reserves are thinned ensure visual impact is minimized by prescribing conditions on timing, extraction routes and amelioration of disturbance.*" (p. 60)

Environmental Awareness and Visual Resource Management
"*Objective*
1. Provide guidelines for road planning design, construction and maintenance.
- *HIGH PRIORITY-*

2. Provide guidelines for planning designing, implementing and evaluating rehabilitation of disturbed lands.
- MEDIUM PRIORITY – " (p. 72)

"*4. Ensure logging coupes are demarcated to minimise environmental degradation and visual impact.*
- HIGH PRIORITY-
Measure of Performance
1. Implement Visual Management System throughout SFR Operations.
[…]" (p. 73)

"*Objective*
4. Ensure planning and construction of fire breaks minimises their visual impact and environmental degradation.
- MODERATE PRIORITY- " (p. 74)

MANUAL OF HARDWOOD … 2ND ED. – 1989

Manual of Hardwood Logging Specifications … 2nd. Ed, 1989

Specification 1.1 Logging Plans

1. Responsibilities

NOTE: REFER TO ENTRY FOR THE ABOVE IN 1987 EDITION (SIMILAR WORDING)
***EXCEPT* FOR-**

"*The preparation and distribution of logging plans is the responsibility of the Regional Inventory Branch Offices. These plans are prepared for each Supply Area and include:*

i) a one or two year logging plan (short-term)

ii) a four or five year logging plan (medium term)

and

iii) a long term (eg. 15 years) logging plan (long term).

These plans are produced after consultation with District staff, Regional staff and specialist branch staff, and timber industry representatives where necessary. The plans must be integrated with all other operational plans including plans for roading, silviculture, mining, fire control and visual resource management." (p. 1)

6. Monitoring and Records

"*Logging must not commence until plans are issued. If during a year additional areas of forest are to be cut, additional or amended plans must be issued by the relevant Inventory Office. Districts supervising logging must keep accurate records of areas cutover and quantities of log products removed and forward such information to the relevant Inventory office as required.* […]" (p. 2)

Specification 2.4 Gravel Pit Selection Working and Rehabilitation
NOTE: REFER TO ENTRY FOR THE ABOVE IN 1987 EDITION (SIMILAR WORDING)

Section 4 : Coupe Control

Specification 4.1 : Coupe Demarcation
NOTE: REFER TO ENTRY FOR THE ABOVE IN 1987 EDITION (SIMILAR WORDING)

Specification 4.2 : Falling (Including Tree Marking Techniques)
NOTE: REFER TO ENTRY FOR THE ABOVE IN 1987 EDITION (SIMILAR WORDING)

Specification 4.3 : Extraction
NOTE: REFER TO ENTRY FOR THE ABOVE IN 1987 EDITION (SIMILAR WORDING)

Section 5 : Environmental Protection

Specification 5.5 : Protection of the Visual Resource (Landscape)

"*1.The visual quality of land is an important resource in its own right which can be identified, assessed and managed in much the same way as other resource values .*

2.Every harvesting proposal must include a site inventory and analysis of landscape factors. An assessment of projected impact of the operation on scenic values is required.

3.Visual resource assessment must be guided by the Department's Visual Management, System (VMS) where it is complete and operative.

4. Where the VMS is in place, if harvesting proposals attain the established visual quality objectives, no conflict with scenic resources is expected. Where predicted impact is greater than the desired visual objective either the proposal is modified or the scenic resource degradation is recognised and documented.

5. Where the VMS is in place, prescriptions and guidelines are written for each type of land alteration, eg., clearfelling, selection cutting, scrub rolling, road and landing location and prescribed burning. […]" (p. 72)

SILVICULTURE SPECIFICATION - 1989

Silviculture Specification 7/89 : Treemarking and Silvicultural Treatment in Multiple Use Jarrah Forest

NOTE: THIS SPECIFICATION SUPERSEDES SILVICULTURE SPECIFICATION 1/87

Preamble
"*The CALM leaflet 'Treemarking and Silviculture in the Forest' (1987) provides the foundation for this specification and should be read concurrently.*

The aim of jarrah silvicultural practice is to maintain and develop forest structures which satisfy goals relating to water, timber production, landscape, wildlife conservation and other values. This specification primarily deals with practices relating to timber production and is modified by reference to detailed specifications concerning other values. (eg 5/89 Maintenance of Habitat for Hole Nesters in Timber Production Operations in the Jarrah Forest).

This specification is to be applied in areas of jarrah forest which are dieback free and where timber production is a major objective." (p. 1)

2. Objectives
2.1Stand Objective
"*To provide for sustaining production of high quality timbers and other forest values by developing and enhancing a grouped forest structure with silvicultural objectives appropriate to the stage of development of each group.*" (p. 1)

2.2Silvicultural Objectives
"[…]*c. In any group only one silvicultural objective will be pursued at any one time.*
d. Fragile, unproductive and environmentally-sensitive areas. No trees will be harvested from these areas." (p. 1)

3.Assessment Prior To Cutting
"*A broad appraisal of each coupe is required to forearm the forester with the objectives to be applied. This can be achieved by aerial photographic interpretation, site-type maps and field reconnaissance.* […]" (p. 2)

3.5 Coupe Plan
"*Prepare a broad coupe plan showing:*

- *limitations on extent of cutting*
- *areas excluded from cutting*
- *preferred areas for uncut strips*
- *likely shelterwood areas*" (p. 2)

CORPORATE MISSION AND OBJECTIVES - 1988

CALM Annual Report 1st July 1987 to 30th June 1988. 1988

NOTE: REFER TO ENTRY UNDER ANNUAL REPORT FOR 1986/87 AND 1985/86, ENTRY IS SIMILAR EXCEPTING THAT THE MISSION STATEMENT HAS CHANGED (THE SCOPE HAS BECOME THE STATEMENT OF MISSION)

"*TO CONSERVE WESTERN AUSTRALIA'S WILDLIFE AND MANAGE LANDS AND WATERS ENTRUSTED TO THE DEPARTMENT FOR THE BENEFIT OF PRESENT AND FUTURE GENERATIONS*." (p. 6)

RECREATION & LANDSCAPE STRATEGIC PLAN – 1988

Recreation and Landscape Branch Strategic plan 1988-1992. 1988

1.2 Strategic Objectives and Outcomes
"*CALM's Strategic Plan identifies several broad strategies which are of primary importance to the functioning of the Recreation and Landscape Branch. These are:*

- *Establish and maintain a system of secure reserves which protect viable representative samples of all the State's natural ecosystems and species, both terrestrial and aquatic, as well as areas suitable for recreation and the production of renewable natural resources.*
- *Ensure that conservation and land management is carried out according to sound, well-researched scientific principles.*

[…]" (p. 2)

3.0 Proposed Five Year Operations Plan
3.5 Landscape Planning and Management
"*Operational Objectives: Assist operations staff in ensuring that management activities are planned and carried out so as to maintain the character and/or enhance the scenic appeal of the landscape in which they occur. This can be best achieved through the development and implementation of a Visual Resource Management System (VRM) which will ultimately provide a systematic basis for:*

- *inventorying, assessing and classifying scenic resources on CALM lands*
- *predicting and evaluating the visual impact of proposed land use activities such as road construction, timber harvesting, mining, development of utility corridors, etc.*
- *recommending how impacts associated with such activities can be mitigated through the application of landscape planning and design principles and area and operation specific guidelines.*" (p. 13)

Current Involvement
"*The Branch currently services a variety of landscape planning and design needs ranging from the preparation of landscape plans and specifications for building projects to the assessment of major operations such as open-cut mining. Over the past year, the two Branch officers trained in landscape planning have been increasingly called upon by operations staff to assist with the visual impact assessment and the development of landscape management guidelines for specific programmes such as five year logging plans.*

Such project level work is a key function of the Branch and it is anticipated that the demand for this type of assistance will expand rapidly as staff awareness of the need for sensitive landscape management increases. […] *The effectiveness and efficiency of providing project level assistance is limited however where there is not broadscale landscape classification and management system to support and guide such assessments. For this reason, the Department embarked upon the formulation of the Visual Resource Management System in September, 1987. Work on the VRM, which is based on existing U.S. Forest Service and Victorian models, has been concentrated in the Southern Forest Region. A landscape planner has been employed on a one year*

contract and his programme is being directed by assistance from regional and district staff. At the completion of this contract position in August of 1988, it is expected that the landscape inventory and classification work in the region will have been completed. In addition, work will be well advanced on the preparation of activity and area specific management guidelines." (p. 13)

Proposed Programme
"*The Department's strategic plan has indicated, as a matter of priority, that a landscape management strategy be prepared and implemented. This objective will be largely achieved through the following Branch initiatives:*

"*1.* *The VRM System will be extended to the Northern and Central Forest Regions and, resources permitting, to other regions of the State. While varying VRM scenarios are dependent upon staffing levels and the support and commitment forthcoming from Operations staff, the following programme and timetable is proposed:*" (p. 13-14)

"*<u>Southern Forest Region</u>*
1987-88 … establish and evaluate visual resource management trials under the direction of full-time landscape architect (existing contract position)

1988 and beyond … application assistance and monitoring by appointment of a second permanent landscape architect, Recreation and Landscape Branch

<u>Central Forest Region</u>
1988-89 … establish VRM system and commence field application trials by contract landscape architect (2 year term)

1989 and beyond … application assistance and monitoring by permanent landscape architects, Recreation and Landscape Branch

<u>Northern Forest Region</u>
1989-90 … establish VRM system and commence field application trails by contract landscape architect (as for Central Forest Region)

1990 and beyond … application assistance and monitoring by permanent landscape architects, Recreation and Landscape Branch.

2. *A comprehensive in-service training course on visual resource management for all Department staff involved in planning and field operations will be commenced. The training programme will be regionally based and will be conducted by Branch staff in association with the contract landscape architect/planner (projected completion date – December 1989 with periodic refresher courses thereafter).*" (p. 14)

STRATEGIC PLAN – 1988?

<u>Central Forest Region Strategic Plan. 1988?</u>

Basic Raw Materials (Function)
Objective
"*To minimise the impact of basic raw material (gravel, sand, stone) on designated land use values on CALM land.*" (p. 50)

Strategy
"*v. Locate borrow pits wherever possible outside Nature Reserves, National Parks, stream and road reserves and away from public view.*" (p. 50)

Environmental Protection
Landscape
"*6.To ensure all land uses and activities on CALM land are planned and carried out in ways to complement the natural environment.*" (p. 105)

Strategy
"*i) Harvest state forest areas designated for timber production in ways that are sympathetic to existing landscape patterns and within the limits imposed by sound silvicultural and management techniques.*

[…]" (p. 105)

"*v) Ensure that major disturbances imposed on CALM lands (dams, mines) are planned and implemented to minimise the impact on existing landscape values.*

[…]
viii) Evaluate land use proposals on adjacent lands in terms of their potential impact on landscape and recommend how these can be mitigated.

ix) Identify and map high quality landscape in the region." (p. 106)

POLICY STATEMENT – 1987

Policy Statement No. 19 : Fire Management Policy. 1987

Strategies
"*4.2Use of Fire*

Prescribed fires will be used to achieve a range of management objectives, including … the management of scenic values.

According to management objectives, appropriate prescriptions will be developed, and staff will be trained in their application.

Monitoring of the effects of fires will be undertaken wherever effective systems have been developed and resources are available." (p. 4)

CONSERVATION POLICY - 1987

Strategies for Conservation and Recreation on CALM Lands in Western Australia. 1987

The Objectives and Principles in the State Conservation Strategy (SCS)
"*The SCS for W.A. sets out five key objectives for conservation. These are:*

> *to maintain essential ecological processes and life-support systems;*
> [...]
> *to maintain and enhance environmental qualities;*
> […]" (p. 4)

"*CALM is committed to the objectives and principles listed in the SCS and uses them as the basis for all conservation planning and operations.*" (p. 4)

The Legislative Base
"*CALM operates under two legislative acts : the CALM Act and the Wildlife Conservation Act.*

These Acts place a number of statutory requirements on the way in which CALM manages land and wildlife. The major requirements are:

(1) Management must be in accord with a published management plan and all management plans must be made available for public review and comment in the draft phase.

(2) All lands are vested in two controlling bodies (not the Department). The controlling bodies (National Parks and Nature Conservation Authority and Lands and Forest Commission) are comprised mainly of members of the public representative of conservation and land management interests.

(3) The Department must perform the following functions:

> *manage land vested in the NPNCA and LFC;*
> *provide the NPNCA and LFC with assistance;*
> [...]" (p. 4)

The Corporate Plan : The CALM Mission and Key Objectives
General Principles and Philosophy
"*CALM is committed to the principle that it manages public land and natural resources and conserves native wildlife on behalf of the public of W.A. Emphasis is placed, then, on informing the public of the Department's activities and, wherever possible, involving the public in planning and management.*" (p. 5)

Statement of Mission
"*In recognising that Western Australia has a beautiful and diverse natural environment which provides material, aesthetic and spiritual benefits and that the natural environment is an essential component of the quality of life for Western Australians, a statement of mission adopted for the Department of CALM is:*

> *TO PROVIDE FOR THE USE OF THE NATURAL ENVIRONMENT WITHOUT DETRACTING FROM POSSIBLE FUTURE USE.*" (p. 5)

Charter
"*The scope of the Department's responsibilities is represented by its charter which is:*

> *TO CONSERVE WESTERN AUSTRALIA'S WILDLIFE AND MANAGE PUBLIC LANDS AND WATERS ENTRUSTED TO THE DEPARTMENT FOR THE BENEFIT OF PRESENT AND FUTURE GENERATIONS.*

Primary Objectives
Five primary objectives have been established:

> *Management*
>
> *To protect, restore and enhance the value of resources entrusted to the Department so as to meet, as far as possible, the diverse expectations of the community.*
>
> *Conservation*
>
> *To conserve the indigenous plant and animal species and environmental processes in natural habitats throughout the State.*

Production

To provide and regulate the supply of renewable resources on a sustained yield basis for the satisfaction of long-term social and economic needs, and in a manner that minimises impact on other values.

Recreation

To facilitate the public enjoyment of the natural attributes of public lands and reserved waters in a manner that does not compromise conservation and other management objectives.

[…]" (p. 5)

"*Subsequent sections of the Department's corporate plan elaborate on these objectives, particularly those relating to conservation. The strategies used to meet these objectives are:*

ESTABLISH AND MAINTAIN A SYSTEM OF SECURE RESERVES WHICH PROTECT VIABLE REPRESENTATIVE SAMPLES OF ALL THE STATE'S NATURAL ECOSYSTEMS AND SPECIES, BOTH TERRESTRIAL AND AQUATIC, AS WELL AS AREAS SUITABLE FOR RECREATION AND THE PRODUCTION OF RENEWABLE NATURAL RESOURCES.

This will involve:

[...]

Protecting ecosystems, landscape and the cultural heritage on the lands and waters entrusted to the Department from damage by fire, disease, grazing, feral animals and people.

Developing prescriptions for control of disturbance and for rehabilitation of damaged forests, parks and reserves.

Opposing the incompatible use of lands and waters entrusted to the Department and opposing the release of such lands and waters for other purposes." (p. 6)

"*ENSURE THAT CONSERVATION AND LAND MANAGEMENT IS CARRIED OUT ACCORDING TO SOUND, WELL-RESEARCHED SCIENTIFIC PRINCIPLES.*" (p. 6)

"*PREPARE AND IMPLEMENT MANAGEMENT PLANS FOR LANDS AND WATERS ENTRUSTED TO THE DEPARTMENT*

This will involve:

The establishment of priorities for management plan preparation according to set criteria.

Restricting procedures to necessary operations to maintain public safety and the status quo of area management where no management plan exists." (p. 7)

"*MANAGE EXPLOITATION OF RENEWABLE NATURAL RESOURCES ACCORDING TO THE FOLLOWING PRINCIPLES:*

resources are managed to ensure their long-term conservation ;

[…]" (p. 7)

CORPORATE MISSION AND OBJECTIVES - 1987

CALM Annual Report 1st July 1986 to 30th June 1987. 1987

NOTE: REFER TO ENTRY UNDER ANNUAL REPORT FOR 1985/1986, ENTRY IS SIMILAR

MANAGEMENT PLANS - 1987

Northern Forest Region Regional Management Plan 1987-1997. 1987

3. Land Use Classification and Management
Conservation of Flora, Fauna and Landscape
Regional strategies
"*In addition to implementing Departmental policies and guidelines … during the period of this plan CALM staff in the region will:*

(i) *classify landscape features on CALM lands in the region according to the Departmental system;*

(ii) *research public perceptions of visual resources;*

(iii) *develop and implement strategies for the management of visual resources for all landscape features in the region;*

(iv) *Liaise with private landholders and other land management agencies concerning management practices on their lands. Assist them in planning for minimisation of deleterious visual impact of their operations.*" (p. 29)

Rehabilitation
"[…] *Integration with the aesthetics and the operation of surrounding lands is also necessary.*" (p. 37)

Central Forest Region Regional Management Plan 1987-1997. 1987

3. Land Use Classification and Management
Landscape : Regional Strategies
"*In addition to implementing Departmental policies and guidelines ... during the period of this plan CALM staff in the region will:*

(i) *identify and map high quality landscapes in the region;*

(ii) *apply formal landscape impact assessment to operational planning in designated high quality landscapes;*

(iii) *include landscape planning in area management plans;*

(iv) *locate site developments in sympathy with the landscape. Existing intrusive site developments will be redesigned or relocated as resources allow;*

(v) *provide a landscape operations manual and complementary training to officers involved with recreation, parks and reserves, and planning;*
[…]" (p. 29)

Southern Forest Region Regional Management Plan 1987-1997. 1987

The Special Situation of Road, River and Stream Zones
"*A system of zones along major roads, rivers and streams was developed in the mid 1970s for State forests in the Southern Forest Region. The system was incorporated into the Environmental Impact Statement (EIS) for the Marri Woodchip Project which was prepared by the Forests Department and subsequently approved by the Environmental Protection Authority. The system was designed to provide these primary values:*

> *Vistas of forest for people driving through the region along major public roads;*
> [...]" (p. 10-11)

"*During the period of this plan it is proposed that an intensive review of road, river and stream zones in the region will be undertaken with the objective of improving their efficiency in providing amenity, wildlife habitat and stream protection. Commitments with respect to the review are:*

> *No changes will be made to the existing system without evaluation and approval by the Environmental Protection Authority. The new system will include a provision that road, river and stream zones will not be subjected to clearfelling.* [...] *However, selective cutting in the zones, which has been practised throughout the period since the EIS was approved, will continue.*
>
> *There will be no decrease in the area of the existing road, river and stream zones.*" (p. 11)

3. Land Use Classification and Management
Landscape
Regional Strategies
"*In addition to implementing Departmental policies and guidelines ... during the period of this plan CALM staff in the region will:*
(i) classify landscape features on CALM lands according to the Departmental system;
(ii) identify and protect landscapes in the region;
[...]" (p. 29)

Day Use
Regional Strategies
"*In addition to implementing Departmental policies and guidelines ... during the period of this plan CALM staff in the region will ….:*
[…]
(vii) minimize impacts of recreation activities on ecological and aesthetic values." (p. 38)

Shannon Park and D'Entrecasteaux National Park Management Plan 1987-1999. 1987

10.0 Conservation Opportunities
"*Protection of the natural values of the Parks is a fundamental concern of this plan. Thus, management and sustained use must not cause irreversible environmental damage or impairment of scenic beauty.*" (p. 43)

1.0 Management Objectives For National Parks
"*The following management objectives for national parks are derived from the Conservation and Land Management Act (1984) and departmental polices for management. The objectives are to:*
[…]
2.Protect and conserve physical, cultural and scenic resources.
[…]
4.Regulate use to be consistent with the maintenance and protection of natural resource values and to minimise conflict between uses.
[…]" (p. 47)

"*The specific management objectives for the Parks are to:*

1. Protect the biological and physical environment and the cultural and scientific features of the Parks.

[…]" (p. 48)

D. Management Prescriptions
2.4 Shire Reserves
"5. Work on the Windy Harbour road will take into account the risk of introducing or spreading dieback and the landscape amenity of the road." (p. 61)

3.4 Rehabilitation
"*Gravel, limestone and other road-building materials have been removed from pits in many places in the Parks. The location of some pits decreases the scenic quality of the Parks.*" (p. 69)

Prescriptions
"*1. All roads and tracks that are poorly located, resulting in soil erosion, degradation of wetlands or impairment of scenic values will be rehabilitated, relocated or closed.*

2. Designated public access routes that have been constructed at an inappropriate scale or following alignments with low scenic amenity will be systematically realigned to more appropriate routes, subject to the development of approved design plans (eg. Deeside Coast Road, Chesapeake Road)." (p. 70)

"*5.* [*Forest assessment plots*] *will be rehabilitated when resources are available, with priority being given to areas which are adversely affecting the scenic values of the Parks.*" (p. 71)

6.0 Protection
6.1 Fire
Objectives
"*The Parks are to be managed primarily to conserve their natural ecosystems and landscapes, whilst ensuring the Park visitors have the opportunity to enjoy the Parks without detrimentally affecting them. In setting the specific fire management objectives to achieve the management objectives for the Parks, the protection of life and property within and near the Parks must be of high importance.*

Consistent with this principle, the following objectives will apply in order of priority:
[…]
4.To maintain the scenic beauty and visual amenity of outstanding landscapes.
[…]" (p. 75)

7.0 Access
7.1 General Access
Objective
"*1. To provide a range of access opportunities, while ensuring that the values of the natural environment and other Park users are not adversely affected.*" (p. 87)

"*CALM has developed the following principles for road location:*

i. Before constructing or upgrading a road, it must be determined that: access to the areas is necessary; the road is the best alternative for necessary access; the resulting effects on the park environment will be minimal; the road is intimately and harmoniously related to the landscape through which it passes; and it takes maximum advantage, consistent with the foregoing criteria, of interpretive and scenic values." (p. 88)

7.3 Access for Management
Objectives
"*4.To ensure that the conservation and landscape values of the Parks are recognised in all access requirements.*" (p. 93)

Prescriptions
"*5. Existing tracks not required for specific purposes will be either left to regenerate naturally or rehabilitated (where they adversely affect landscape values or appear to be susceptible to erosion).*

6. New tracks will only be established where no feasible alternative for management exists and only following referral to the Environmental Protection, and Recreation and Landscape Branches of CALM for approval. […]

[…]" (p. 94)

11.0 Resource Management
11.1 Mining
Objectives
"*2. To ensure that in the event of exploration or mining activity being approved that they are carried out in such a way that it will minimise or restore any damage to the biological, physical and landscape values of the Parks.*" (p. 119)

Prescriptions
"*1. In its management of the Parks the Authority will pursue a policy of not favouring proposed mining activity. By giving advice and by other appropriate means the Authority will seek to ensure that if mining does occur it is strictly conditioned so as to minimise and require restoration or damage to the physical environment of the Parks.*

[…]" (p. 120)

11.7 Public Utilities
Objectives
"*1. To seek alternatives outside the Parks for any utility corridors proposed within the Parks.*

2. To ensure that any approved utility corridors are constructed and maintained so as to minimise values on the physical, biological, landscape and recreational values of the Parks." (p. 125)

Prescriptions
"*1. In general, no utility corridors will be provided through the Parks. Any proposed utility corridors will be subject to environmental review, including biological surveys and analysis, both of alternative sites outside the Parks and alternative methods of service provision (eg. wind or solar-generated power rather than grid-supplied).*

2. Where it is provided to be essential for utilities to pass through the Parks they must avoid any impact on significant or fragile natural features (Map 13)." (p. 126)

GUIDELINES - 1987

Northern Forest Region Regional Management Plan 1987-1997. 1987
Central Forest Region Regional Management Plan 1987-1997. 1987
Southern Forest Region Regional Management Plan 1987-1997. 1987
Strategies for Conservation and Recreation on CALM Lands in Western Australia. 1987

Appendix 2, Departmental Management Guidelines
Landscape Management
Objective
"*To ensure that all land uses and activities on CALM land are planned and carried out in ways that complement the inherent visual qualities of the natural environment.*

Specifically, the aim is to :

> *employ staff trained in landscape architecture and related design disciplines to promote sound landscape management practices within CALM planning and operations;*
>
> *develop a landscape classification system which will assist in the identification, evaluation and amelioration of visual impacts, and which is applicable to and compatible with both broad scale and detailed project planning;*
>
> *prepare a comprehensive manual and set of landscape management guidelines covering all operations that have an effect on the landscape;*
>
> *conduct training courses covering visual resource and landscape management and planning concepts for Departmental staff and other interested groups who work on CALM lands.*" (p. 79 of *Northern Forest Region Regional Management Plan 1987-1997*)

Strategies
"*(i) Harvest State forest areas designated for timber production in ways that are sympathetic to existing landscape patterns and within the limits imposed by sound silvicultural and management techniques.*
[...]
(iv) Locate and design roads and utility corridors to minimise both environmental and social impacts on the areas they traverse.

(v) Ensure that major disturbances imposed on CALM lands (dams, mines) are planned and implemented to minimise the impact on existing landscape values.

[…]" (p. 80 of *Northern Forest Region Regional Management Plan 1987-1997*)

Departmental Management Guidelines
Basic Raw Materials
Strategies
"*(i) Locate borrow pits, wherever possible, outside stream and road reserves, and where they are not in view from the public roads.*
[…]" (p. 90 of *Northern Forest Region Regional Management Plan 1987-1997*)

MANUAL OF HARDWOOD … - 1987

Manual of Hardwood Logging Specifications … 1987

Specification 1.1 Logging Plans
"*3. Plans covering the first year, or first two years, of the five (or four) year plan (Annual, or Two year, Logging Plan) shall, when applicable, include the following individual plans:-*
i) Logging plan - highlighting the following information -
[…]
(e) stream, amenity and road reserves
[…]" (p. 1-2)

Specification 2.4 Gravel Pit Selection Working and Rehabilitation
"*The pit selection must be carried out in conjunction with the planning of log haul routes. This implies a two year lead time. Selection of pits must take into account the following:*
[…]
* *No pit shall be located within road, amenity or stream reserves*
* *Pits must be located out of sight of features such as public roads, scenic lookouts and recreation areas.*
[…]" (p. 23)

Section 4 : Coupe Control
Specification 4.1 : Coupe Demarcation
"*4. Stream reserve, road reserve and amenity reserve boundaries must be identified prior to cutting in the same way as coupe boundaries, that is with white painted crosses facing the cutting area.* […]" (p. 40)

Specification 4.2 : Falling (Including Tree Marking Techniques)
"*5. Trees leaning into road, stream or amenity reserves must not be felled unless specifically indicated for removal by a Forest Officer.*" (p. 46)

Specification 4.3 : Extraction
"*9. No extraction machine may enter a road, stream or amenity reserve without the specific approval of a Forest Officer.*" (p. 49)

OPERATIONS MANUAL - 1987

Southern Forest Region Operations Manual. 1987

Removal of Dangerous Trees Adjacent to Major Roads in the Southern Forest Region
Objective
"*2.4 To ensure that the area treated is left in a visually pleasing state.*" (p. 32)

ADMIN. INSTRUCTION - 1986

Administrative Instruction No. 23 : Interim Guidelines For Operations. 1986

Introduction
"*For substantial areas of land under the control of the Department of Conservation and Land Management it will be many years before approved Management Plans will be developed. In the meantime the CALM Act provides in Section 33 (3) (b) that certain operations can be carried out when there is no management plan.*" (p. 1)

"*For indigenous State forest the operations are defined as those actions that ensure the multiple use and sustained yield of that resource for the satisfaction of long term social and economic needs.*

In accordance with the Departmental Planning Policy (Policy 1, January 1986) the necessary operations must be carried out in a planned manner through the development and implementation of INTERIM GUIDELINES FOR OPERATIONS.

The Interim Guidelines will consist of:

(1) a brief description and brief guidelines for major potential activities;

(2) a map showing the locality and area of proposed management activities;

(3) an indication of who must give approval before particular operations can be carried out.

This paper shows how the Interim Guidelines are intended to work." (p. 1)

Aim

"*The aims of the Interim Guidelines are:*

(i) to provide an adequate safeguard against natural and operational calamities on lands administered by CALM in the absence of an approved Management Plan;

(ii) to ensure that critical 'necessary operations' are identified and properly prescribed;

(iii) to ensure that the impacts of necessary operations are fully considered and effectively incorporated within existing management and control systems;

(iv) to provide a simple, efficient and attainable means of gaining approval for necessary operations." (p. 2)

Identification

"*The first step is to identify all the necessary operations within each of the areas concerned. Use can be made of a checklist showing all the possible necessary activities – see Appendix 1. Only those operations that are essential for safeguarding the area in question should be considered. These must be consistent with the objectives for the area concerned as described in the CALM Act.*" (p. 2)

"*The development of suitable strategies and prescriptions* ***will*** *necessitate consultation and collaboration between CALM Operations, Planning and Specialist groups.* […]" (p. 3)

Duration of Interim Guidelines

"*Most Interim Guidelines should have an approval duration of at least 3 years with a maximum of 5 years.* […] *However, the works programme that emanates from these Interim Guidelines must be reviewed and updated annually.*" (p. 4)

Approval

"*A system of approval for the Interim Guidelines and the methods of implementing these is to be adopted which recognises and utilises the established hierarchy of authority and control, i.e. District Manager to Regional Manager to Divisional Manager (or Branch Manager) to Directorate (Director National Parks or Director Nature Reserves or both, or entire Policy Directorate depending on the range of necessary activities). It is expected that once the pattern of the development of these Interim Guidelines have been universally accepted, that the final approval will be delegated to Divisional or Regional Managers.*" (p. 4)

CORPORATE MISSSION AND OBJECTIVES - 1986

CALM Annual Report 1st July 1985 to 30th June 1986. 1986

Corporate Objectives

"*Under a corporate plan formulated in 1985/86 the statement of mission for the Department of Conservation and Land Management is:*

> *TO PROVIDE FOR THE USE OF THE NATURAL ENVIRONMENT WITHOUT DETRACTING FROM POSSIBLE FUTURE USE.*

The scope of the Department's responsibilities is represented by its charter which is:

> *TO CONSERVE WESTERN AUSTRALIA'S WILDLIFE AND MANAGE PUBLIC LANDS AND WATERS ENTRUSTED TO THE DEPARTMENT FOR THE BENEFIT OF PRESENT AND FUTURE GENERATIONS.*

Primary objectives are:

Management

> *To protect, restore and enhance the value of resources entrusted to the Department so as to meet, as far as possible, the diverse expectations of the community.*

Conservation

> *To conserve the indigenous plant and animal species and environmental processes in natural habitats throughout the State.*" (p. 8)

"*Production*

> *To provide and regulate the supply of renewable resources on a sustained yield basis in a manner that minimises impact on other values.*

[…]

To achieve the primary objectives the Department will:

Provide an effective administrative framework for the conservation of wildlife throughout the State and the management of lands, waters and natural resources entrusted to the Department.

This will involve:

- *The maintenance of a Policy Directorate to establish, review and refine Departmental aims, policies and priorities; to monitor the implementation of management plans; and to see that goals are achieved.*
- *The maintenance of an operations wing to implement policies and management plans and to set up efficient financial, administrative and management systems.*" (p. 9)

"*Establish and maintain a system of secure reserves which protect viable representative samples of all the State's natural ecosystems and species, both terrestrial and aquatic, as well as areas suitable for recreation and the production of renewable natural resources.*

This will involve:

- *The development and maintenance, in conjunction with other government instrumentalities and the public, of a comprehensive data base on the occurrence and conservation status of the State's ecosystems and species. "* (p. 10)

[…]

- "*Protecting ecosystems, landscape and the cultural heritage on lands and waters entrusted to the Department from damage by fire, disease, grazing, feral animals and people.*

- *Developing prescriptions for control of disturbance and for rehabilitation of damaged forests, parks and reserves.*

- *Opposing the incompatible use of lands and waters entrusted to the Department and opposing the release of such lands and waters for other purposes.*" (p. 11)

STRATEGIC PLAN - 1986

Strategic Plan : Southern Forest Region. [1986]

3. Regional Strategic Objectives
3.1 Biophysical Resources
Landscape
"*To ensure that activities on CALM land are planned and carried out in ways that complement rather than detract from the inherent visual qualities of the natural environment. Outstanding scenic landscapes will be protected from impairment of visual amenity.*" (p. 3?)

Hardwood Timber Production
Key Areas : Landscape
Objective
"*1. With landscape architects develop routine landscape impact criteria for logging coupes.*" (p. 25?)
Measure of Performance
"*1. Evaluate all coupes before demarcation of boundaries and install boundaries which will minimise visual impacts.*" (p. 25?)

Objective
"*2. Maintain integrity of road reserve buffers.*" (p. 25?)
Measure of Performance
"*1. No intrusions of clear felling in Road Reserves. Where Road Reserves are thinned ensure minimal visual impact by prescribing conditions on timing, extraction routes and amelioration of disturbance.*" (p. 25?)

Key Area : Environmental Awareness and Visual Resource Management
Objective
"*3. Ensure logging coupes are demarcated to minimise environmental degradation and visual impact.*" (p. 31?)
Measure of Performance
"*5. Recreation and Landscape Branch and Parks & Reserves Officer to undertake assessment of visual impact of logging operations annually. Report to provide action steps.*" (p. 31?)

Objective
"*6. Ensure planning and construction of fire breaks minimises visual their impact and environmental degradation.*" (p. 33?)
Measure of Performance
"*1. Develop guidelines in association with Specialist Branches, to minimise visual impact and environmental degradation resulting from firebreak construction. Report by September, 1987.*" (p. 33?)

Key Result Objectives - Walpole District
Key Area : Basic Raw Materials
Objective
"*1.* [...] *To ensure B.R.M. pits are established with minimal visual impact on landscape.*" (p. 90?)

MANUAL OF LOGGING … - 1986

Manual of Specifications for Control of Hardwood Logging Operations in the Northern … 1986

3.Plans covering the first two years of the five year plan (Two Year Logging Plan) shall wherever possible include the following individual plans:-" (p. 3)

"i*) Logging plan – highlighting the following information –*

[…]
(e) stream, amenity and road reserves
[…]" (p. 4)

Specification 2.4 Gravel Pit Selection Working and Rehabilitation
"*1. The use of existing or new gravel pits for logging road construction and/or maintenance must be approved by the Forest Officer in Charge, and must confirm with Policy Statement Number 2 (January, 1986) a summary of which is attached (Attachment 2.4.1).*

2.The Pit selection must be carried out in conjunction with the planning of log haul routes. This implies a two year lead time. Selection of pits must take into account the following:

[…]
* *No pit shall be located within road, amenity or stream reserves.*
* *Pits must be located out of sight of features such as public roads, scenic lookouts and recreation areas.*

[…]
* *Access tracks into pits must be located to avoid direct line of sight into the pits.*

[…]." (p. 29)

Section 4 : Coupe Control
Specification 4.1 Coupe Demarcation
4.2 Road Reserves
"*- 100 to 200m in width, on both sides of major roads or tourist roads*
- Between 0 and 100m on both sides of other roads.

[…]" (p. 37)

Specification 4.3 Extraction
"*9. No extraction machine may enter a road, stream or amenity reserve without the specific approval of a Forest Officer*." (p. 43)

MANAGEMENT PLAN – 1985

Northern Forest Region : Working Arrangements and Management Program. 1985

5. Land Management
State Forest and Timber Reserves
Landscape
"*The Northern Jarrah forest is used extensively by the public for weekend drives, picnics etc. during mild weather in spring and autumn. It is important that landscape is preserved wherever possible and impacts of mining and other deleterious operations are planned for lowest adverse visual impact.*" (p. 30)

Objectives
- "*Department G.W.P. 87. Adopt sound landscape management, prepare a manual of standards and conduct training courses in landscape management.*

- *Region. Minimize adverse effects from mining and other operations including landscape requirements in planning wherever possible.*" (p. 30)

Strategies
- "*Obtain advice from landscape experts when planning operations in sensitive areas.*

- *Implement landscape improvement plans such as Albany Highway Corridor Plan.*

- *Reduce adverse visual impacts by not burning both sides of a tourist road in the same season or hot burns around picnic sites.*" (p. 30)

LEGISLATION - 1984

Conservation and Land Management. No. 126 of 1984

"*AN ACT to make better provision for the use, protection and management of certain public lands and waters and the flora and fauna thereof, to establish authorities to be responsible therefor, and for incidental or connected purposes*

[Assented to 8 January 1985]" (p. 1881)

Part IV. - Department of Conservation and Land Management
Division 1. - Establishment of Department
"*33.(1) The functions of the Department are, subject to the direction and control of the Minister-*

(a) to manage land-

(i) to which this Act applies; or

(ii) which becomes subject to the management of the Department under subsection (2), and the associated forest produce, fauna and flora;

(b) to provide the Commission, the Authority and the Council with such assistance as they may reasonably require to perform their functions;" (p. 1905)

"*(d) to be responsible for the conservation and protection of flora and fauna throughout the State, and in particular to be the instrument by which the administration of the Wildlife Conservation Act 1950 is carried out by the Executive Director pursuant to section 7 of that Act;*

(e) to carry out or cause to be carried out such study or research of or into-

(i) the management of land to which this Act applies; and

(ii) the conservation and protection of flora and fauna, as the Minister may approve;

(f) to provide advice to, or undertake work for or jointly with, and to supply services or facilities to, any department, public or private body or other person if that Minister is of the opinion that the provision of that advice or the undertaking of that work is in the public interest;
(g) upon request by the Minister to whom the administration of the Land Act 1933 is committed, to advise him on the reservation, alienation, and disposal of Crown land in rural areas under that Act." (p. 1906)

"*33(3) The management of land referred to in subsection (1) (a) (i) and the associated forest produce, flora and fauna shall be carried out-*

(a) where there is a management plan for the land, in accordance with that plan; or" (p. 1906)
"*(b) where there is for the time being no such plan-*
(i) in the case of national parks and nature reserves, in such a manner that only necessary operations are undertaken; or
(ii) in any other case, in accordance with the provisions of section 56 applicable to the land.
(4) In subsection (3) (b), 'necessary operations' means those that are necessary for the preservation or protection of persons, property, land, flora or fauna, or for the preparation of a management plan.

(5) Nothing in subsection (1) shall be read as limiting the functions of the Commission and the Authority under sections 19 and 22 respectively.

34. Subject to this Act and the Public Service Act 1978, the Executive Director has power to do all things that are necessary or convenient to be done for, or in connection with, the performance of the functions of the Department." (p. 1907)

"*54. (1) A controlling body shall be responsible-*

(a) for the preparation of proposed management plans; and

(b) the review of expiring plans and preparation of further management plans,

for all land which is vested in it whether solely or jointly with an associated body.

(2) This Part applies to the preparation of a plan under subsection (1) (b) in the same way as it applies to the preparation of an initial management plan." (p. 1914)

"*(3) Proposed management plans for any land shall be prepared-*

(a) by the controlling body for that land through the agency of the Department; and

(b) within such period after the commencement of this Act as is reasonably practicable having regard to the resources of the Department available for the purposes." (p. 1915)

"*55. (1) A management plan for any land shall contain –*

(a) a statement of the policies or guidelines proposed to be followed; and

(b) a summary of the operations proposed to be undertaken,

in respect of that land during a specified period which shall not exceed 10 years.

(2) A management plan shall state the date on which it will expire, unless it is sooner revoked, but notwithstanding anything in this section or in the plan, a plan which would otherwise expire shall, unless it is revoked, remain in force until a new plan is approved." (p. 1915)

"*56. (1) A controlling body shall, in the preparation of proposed management plans for any land, have the objective of achieving or promoting the purpose for which the land is vested in it, and in particular management plans shall be designed –*

(a) in the case of indigenous State forest or timber reserves, to ensure the multiple use and sustained yield of that resource for the satisfaction of long-term social and economic needs;

[…]

(2) In subsection (1) (a) 'multiple use' means as many different uses as are possible and compatible among themselves." (p. 1916)

"*62(2) A classification, or amendment of classification, of any land or waters shall not be made under this section-*

(a) unless it is in conformity with the provision of section 56 which is relevant to, or any management plan for, that land or those waters; and

(b) in the case of land to which section 16 applies, unless the owner, and any person occupying the land with the consent of the owner, has given approval in writing to the classification or the amended classification.

(3) This section applies to any national park, nature reserve, marine nature reserve or marine park." (p. 1919)

RECREATION PLAN – [1984]

Forest Recreation Framework Plan. [1984]

Definitions
"*Management Priority Areas – the forest has been divided into areas in which the dominant and secondary uses are specified and their priority ranking nominated. Each unit is known as a management priority area (M.P.A.) and is described according to its dominant (or priority) use. Areas in which recreation is the management priority are known as Recreation M.P.A.s.*" (p. ii)

Summary
"*The aim of this plan is to provide a framework for planning, development and management of forest recreation in the Northern Region.*

The plan covers the nature of forest recreation, analyses the availability of recreational opportunities in the region and discusses a range of management options. The various environmental, management, legislative and economic constraints which apply are considered.

The policy adopted is to provide for recreational activities which:

(i) are forest-dependent;
(ii) are environmentally acceptable;
(iii) do not endanger other forest users, and
(iv) are not disruptive to the majority of other forest users.

The region is subdivided into a series of 'management units' for which appropriate recreation strategies are developed.

The plan then specifies a series of regional strategies which will apply to all management units. These cover site design and maintenance, provision for the disabled, visitor information, dieback hygiene, mining, urban development, use of firearms, camping, off-road vehicles and other matters.

The plan concludes with proposals for implementation and control and specifies the structure of the follow-up plans to be developed by local staff in divisions." (p. iii)

7. Forest Recreation Development and Management Constraints
"*The capacity of the Forests Department to implement a recreation policy is constrained by a number of factors. Such factors may be environmental, management, legislative or economic.*

In the Northern Region of State forest, where land use pressures are intense, a number of factors currently determine how the forest is used and managed for outdoor recreation. These existing constraints can be summarised as follows:" (p. 31)

7.1 Environmental and Management Constraints
"*Several major environmental considerations have a constraining influence on recreation and other forest land uses in the Northern Region. The most important are:*

[…]
- *The need to avoid degradation of prominent landscape features or recreational facilities through inappropriate or over-use.*

These factors were considered in assessing the capacity or capability of the forest to sustain different types of recreational use (refer to Table 6). That is, recreational activities which are likely to result in substantial environmental degradation have been directed away from the more sensitive portions of the landscape. […]" (p. 31)

"*With respect to management constraints, the ability to provide for recreation is influenced by land tenure and land use. The land considered in this plan is managed under the multiple use concept and includes all land under the control of the Conservator of Forests. In simple terms, this means that recreation provision must be integrated with the provision of other forest values (e.g. timber and water production) and their protection requirements (from disease and fire in particular).*

The whole of the Northern Jarrah Forest has been classified into Management Priority Areas (Map 3). In some areas, recreation is the designated management priority while in others, recreational activity has been given a lower priority." (p. 31)

9. Regional Planning and Management Strategies
9.1 The Concept of Use Zoning
"*The approach adopted in this plan is that of use zoning. This recreation management concept is widely employed elsewhere. Under this approach, recreation activities sharing similar environmental and cultural requirements are allocated to designated zones or management units. Allocation of activities to areas is based*

on user needs, assessed recreation land use capabilities and the existing environmental, legislative and management constraints. It is in essence a reflection of recreation land use suitability, i.e. capability as modified by existing constraints.

Successful implementation of the zoning strategy hinges on 3 factors. These are …

- *that the allocation of activities to areas is realistic in providing environments satisfactory to user groups;*
- *that users are made fully aware of why and where specified use areas have been allocated. This requires a comprehensive visitor information and education programme;*
- *that access and facilities are planned and located so as to encourage the type(s) of activities considered most suitable for a particular area or zone.*" (p. 37)

9.2.9 Roadway Management Unit

"*Management Strategy: This unit encompasses the viewshed on all major forest roads, as determined by the confining boundaries of the surrounding topography. This may vary from 30m to 2km depending upon the inherent features of the particular area. Within this zone attention will be given to the planning and implementation of all forest land use activities which impinge upon the roadscape.*

The Specific Management Strategies are:

- *to ensure that all activities involving the removal of forest produce including gravel, and the rehabilitation of degraded areas are carried out according to landscape design and management guidelines provided by Extension Branch*." (p. 47)

HANDBOOK – 1983

Bauxite Mining : Northern Jarrah Forest : Mining Operations Handbook 1. Ed. 2. 1983

'Rehab 83' : Prescription for Rehabilitation of Bauxite Mines in the Western Jarrah Forest

4.1 Broadscale Regional Planning

"*The mining company is required to produce each year an updated 5-year Mining and Management Plan for approval by Government. In the preparation of these plans, the following aspects of rehabilitation are to be considered:-*

[…]

- *Landscape considerations*

[…]

This prescription deals with Mining Operations only within Water Production M.P.A.s and Recreation M.P.A.s.
At this stage no mining is proposed for other M.P.A.s." (p. 4)

Responsibility of the Forest Officer

"*(iv) Examine proposed mining plans with respect to the location, extent and timing of operations in order to identify what impact these operations will have on landscape values and recreational features as determined in the inventory stage. Where practicable, operations will be planned so as to minimise visual impacts on the landscape resulting from mining.* […]" (p. 5)

4.3 Annual Operational Planning

"*Detailed proposals for each minepit are prepared roughly 12 months in advance of rehabilitation.* […]" (p. 6)

"*Each detailed proposal is prepared jointly by Forests Department and mine company staff, and is to deal with the following factors:-*

[…]

- *Any special features to be incorporated or retained (e.g. pit walls) as part of the rehabilitated landscape;*

[…]
A conceptual rehabilitation proposal will be prepared for each area, and must be initialled as 'Agreed To' by the local Forests Department officer in charge." (p. 6)

7.Water Management
7.3 Criteria for Success
[…]
- "*the system must be acceptable in terms of costs, aesthetics and the land use priority.*" (p. 10)

6. The Forest Improvement and Rehabilitation Scheme Prescription : F.I.R.S. 82
"*4.4 FIRS 4* - **Recreation MPA*
- **Advanced Dieback*

Apply as for FIRS 1 except for the influence zone which will be areas surrounding or adjacent to a depth of about 100 metres, any major or tourist facility. These areas will be worked according to a landscape and rehabilitation plan which prescribes:

* *planting pattern*
* *stocking*
* *species*
* *seed mix for understorey species.*" (p. 6.6)

"*Factors to be considered are: Plant trees in clumps, not lines; choose species which fit the natural landscape (e.g. E. patens okay in lowlands but not uplands; E. resinifera blends with jarrah); feather edges; do not create thickets of prickle bush.*

Each DFO will compile an appropriate prescription for these areas, seeking specialist advice from the Departmental Landscape architects." (p. 6.7)

"*4.5 <u>FIRS 5</u>* - **Recreation MPA*
- ** Stand is Not Advanced Dieback*

(i) *Apply as for FIRS 3 except for the thinning. No thinning to waste will take place in a Recreation MPA.*

(ii) *Areas surrounding or adjacent to a depth of about 100m, any major or tourist road or existing tourist facility will be worked according to a landscape and recreation plan which prescribes:*

* *stocking*
* *species*
* *seed mix of understorey species*

Each DFO will be responsible for definition of these special areas and for compiling an appropriate prescription. Specialist advice must be sought from the landscape architects during the preparation of plans, and final plans endorsed by R/L Operations." (p. 6.7)

Forest Management After Bauxite Mine Rehabilitation in the Western Jarrah : Prescription 82
6.5 Success Criteria
"*In the long term, the desired forest ecosystem will have the following characteristics:-*
[…]
<u>Capacity to produce</u> water, timber and landscape values in the long term without heavy demands for inorganic fertilizer, or the necessity for constant engineering maintenance." (p. 7.3-7.4)

"*Research has not yet proceeded to the point to enable values to be placed on all these criteria, or in some cases to define how they are to be measured.*

In the meantime the following will apply:
[…]
(vii) *Landscape*
Forest to be attractive (i.e., green and leafy, with a leguminous shrub understorey) and easily accessible for walking, and fire control.
[…]" (p. 7.3)

WORKING PLAN - 1982

Working plan no. 87 1982, Part I, General Working Plan for State Forests in Western Australia. 1982

Resource Management
Landscape
Management Objective
"*To ensure that, as far as possible, all land uses and activities are planned and carried out in ways that complement, rather than detract from, the inherent visual qualities of the forest environment.*" (p. 40)

Policy
"*(1) Promote the adoption of sound landscape management practices by employing staff trained in landscape architecture and related design disciplines.*

(2) Prepare a comprehensive manual and set of landscape management prescriptions covering all forest operations that have an effect on the landscape.

(3) Conduct training courses covering forest landscape management principles for Departmental staff and other interested groups who operate in State forest." (p. 40)

Strategy
"*(1) Harvest forest areas within the limits imposed by sound silvicultural and management techniques in ways that are sympathetic to existing landscape patterns.*

(2) Establish plantations in accordance with accepted landscape design principles so that possible intrusive effects on the landscape are minimized.

(3) Locate and design new roads to minimize both environmental and visual impacts on the forest areas they traverse.

(4) Plan and design facilities for recreation that are in harmony with the forest environment.

(5) Ensure that mining and dieback disease rehabilitation practices are carried out in a manner that is compatible with or enhances scenic values.
[…]" (p. 40)

WORKING PLAN – 1982

General Working Plan No. 87 of 1982 : Part II. 1982

"*The detailed prescriptions for the operations in each Division which appear in this document are designed to implement the policy contained in Part 1 of General Working Plan No. 87. These prescriptions are intended to*

remain in operation until 31st December, 1986, unless an earlier revision of the plan becomes necessary in the light of new factors which might arise in the meantime." (p. 1)

General Prescriptions For The Whole Northern Region
7. Regulation Of The Harvest
7.5.2 Gravel, Stone and Sand
"*Gravel, stone and sand will be provided for government and semi-government authorities where there is no reasonable alternative supply and where the supply will not result in the spread of dieback or prejudice amenity values.* […]" (p. 9)

"[…] *Pits will be located where they will not be in view from public roads and rehabilitated when worked out, relevant earthworks to be carried out by or at the expense of the licence or lease holder.*" (p. 9)

General Prescriptions For The Whole Central Region
7.5.2 Gravel, Stone and Sand
"*Gravel, stone and sand will be provided for government and semi-government authorities where there is no reasonable alternative supply and where the supply will not result in the spread of dieback or prejudice amenity values. Supplies will not generally be made available to private contractors who will be expected to use private sources.*

Removals will be controlled by the existing system of licences and leases.

Pits will be located where they will not be in view from public roads and rehabilitated when worked out, relevant earthworks to be carried out by or at the expense of the licence or lease holder." (p. 10-11)

General Prescriptions For The Whole Southern Region
"*7.5.1 The objective is to guide mining operations on to areas where there will be least conflict with other land uses, to minimise environmental damage and to rehabilitate areas affected by mining to best suit future land use.* […]" (p. 8)

7.5.2 Gravel, Stone and Sand
"*Gravel, stone and sand will be provided for government and semi-government authorities where there is no reasonable alternative supply and where the supply will not result in the spread of dieback or prejudice amenity values. Supplies will not generally be made available to private contractors who will be expected to use private sources.*

Removals will be controlled by the existing system of licences and leases.

Pits will be located where they will not be in view from public roads and rehabilitated when worked out, relevant earthworks to be carried out by or at the expense of the licence or lease holder." (p. 8)

MANAGEMENT PLAN – 1982

Hardwood Management Plan (Central Region). 1982

2.4.4 Influence Zones and Conservation Practices
"*These are areas designated by the planner which surround special natural or artificial features in the forest.*

For example: * *Streams and rivers*
* *Roads, railway lines, S.E.C. lines*
[…]
* *Tourist, recreation facilities, scenic drives, walk tracks etc.*

After designation, the O.I.C. will prepare an appropriate prescription for each area taking into account land use, dieback status, hygiene, aesthetics, conservation values and risks of visual or noise pollution or of undesirable effects on water supply." (p. 5)

3.1.2 Planning the Annual Cut
"*(5) Existing access roads, stream reserves, amenity strips etc. must be defined.*" (p. 7)

NORTHERN REGION OBJECTIVES AND GOALS- 1982

Northern Region : Objectives and Goals 1982/83. 1982

1.1 Departmental Objective : Conservation
"*Our overall aim is to achieve the Departmental objective, which is*
'the conservation, though planned use and management, of forest land and resources for the greatest long term social and economic benefit'." (p. 1)

1.2 Regional Objective
"*The role of the Regional Group is to determine management strategies for each activity in the region, so as to provide co-ordinated direction for the achievement of Departmental objectives by divisions.*

Where necessary, management strategies will be presented in the form of Regional Plans. These will take account of: -

- *Departmental objectives, policies and strategies*
- *Land use objectives*
- *Site capability and potential*
- *Protection requirements*

[…]" (p. 1)

1.3 Resources
"*The forest resources of the northern region are water, timber, flora and fauna, minerals, recreational and scientific/educational values and the physical environment of soil and air.*

Factors which threaten the long-term conservation of these resources are fire, disease, alienation of land, and uses which permanently destroy the productive capacity of the forest.

The specific land, resource and protection objectives are:" (p. 1)

"*1.6.3 Landscape*
Objective: to enhance and preserve the beauty of forest landscapes in particular those landscapes adjoining roads, streams, townsites, and recreation areas." (p. 6)

"*1982/83 Goals*
(i) *Complete the Albany Highway Corridor plan and commence to implement.*

(ii) *Prepare similar landscape plans for the Brookton Highway, Kalamunda – Mundaring Road and Gnangara Road corridors.*

Responsibility : *Divisional O.I.C.s*
Priority : *4.*" (p. 7)

FORESTERS' MANUALS – 1981

Fire Control : Foresters' Manual. 1981[included in *Foresters' Manual.* 1979]

Environmental Controls
"*9.048 The area O.I.C. is to ensure prescribed burning conforms with required environmental standards, i.e.: i.e. Strips fronting onto major tourist routes and surrounding tourist attractions are not burnt during the main floral display of the wildflower season.*" (p. 26)
Updated 10/81

Foresters' Manual : Part 13 : Recreation and Landscape Management. 1981 [in *Foresters' Manual.* 1979]

Recreation – Capital Development
"*13.019 Many facilities become necessary because of an existing natural feature, historic site or panoramic view that is being used by the recreating public. Care must be exercised in development that caters for this demand, particularly with respect to the following points:*

Separation of people and vehicles;
Siting buildings, barbecues, etc., to blend with the surroundings;
Allowance for growth in user levels;
Fire protection;
Servicing of bins and toilets;
Physical separation of feature and facility;
Simple, neat and attractive signposting.
[…]" (p. 8)

Landscape
Landscape in Planning
"*13.025 Without doubt, one of the most critical components of satisfactory forest recreation experience is an attractive forest landscape. Appreciation of landscape must eventually be an integral part of the planning and execution of all forest operations. Nowhere is this appreciation more important than in the development of recreation facilities.*

Definition of Landscape
"*Landscape may be defined as 'the total aesthetic effect of features of a particular environment'; as such it forms an integral part of the impression made by the forest on the visitor. It is therefore important that all the Department's activities involving planting, removing or altering vegetation receive landscape consideration.*" (p. 12)

Landscape Management
"*There are many ways to assess the landscape and it is important to appreciate that the public viewpoint will often be different from that of the forester. Guidelines for landscape management will be circulated to Divisions from time to time, but some preliminary guidelines are provided here.*" (p. 12)

Alternatives for Landscape Management
"*13.028 There are six basic landscape management alternatives* that encompass all possible management action and their effects:*
[** Source: "Forest Landscape Management" Volume 1, United States Department of Agriculture Forest Service (Northern Region), n.d.*]
landscape preservation
landscape enhancement
landscape retention

landscape deterioration
landscape destruction
landscape rehabilitation

Their application to logging, roading and building construction will further define them. Owing to the many variables that exist, sites can be placed in specific categories only after close analysis." (p. 13)

"***Landscape Preservation**: 'Conscious management of the visual resource to keep its constituent parts intact and untrammelled by man'. This type of management usually applied to areas that are of particular appeal to the public.*

"***Landscape Enhancement**: 'Management of the visual resource in which additional visual interest is provided through alterations by design and through adding harmonious structures'. This type of management aims to increase visual variety where little such variety now exists.*" (p. 13)

"***Landscape Retention**: 'Management of the visual resource by which man's activities and works are kept subordinate to the visual strength and character of the landscapes they occur in.' Landscape alterations to provide facilities are to be subtly integrated so that they attract little attention to themselves. Retention of existing landscape values is favoured over large-scale developments that would alter the visual composite to any great extent.*" (p. 14)

"***Landscape Deterioration**: 'Management of the visual resource in which man's activities and works demean the visual qualities of existing landscapes by virtue of their unharmonious and consequently detractive visual natures.' Landscape alterations that are inappropriate in terms of scale, colour or form create the unharmonious visual contrasts with the greater landscape continuum that typify this kind of management. Landscape deterioration is usually a long-term process affected by numerous major and minor physical effects, few of which relate positively to each other.*" (p. 14)

"***Landscape Destruction**: 'Management of the visual resource in which the activities and works of man abruptly alter existing landscapes in both reversible and irreversible fashions with little regard for landscape values or future land uses.' Landscape alterations that destroy the component parts of landforms (and consequently landforms themselves), without provision for remedial measures, typify this kind of management. Both landscape deterioration and landscape destruction lead toward negative physical effects. The distinction between the two rests largely on the degree and the rate of physical change. Alterations resulting in landscape deterioration proceed slowly and fragmentarily; alterations resulting in landscape destruction proceed rapidly and totally.*" (p. 14-15)

"***Landscape Rehabilitation**: 'Management of the visual resource aimed at reversing or minimizing the detrimental visual effects caused by landscape deterioration and landscape destruction.' Landscape alterations that minimise negative contrasts in the greater landscape continuum are typical of this kind of management. Landscape rehabilitation should not be confused with landscape restoration, for while a semblance of the order that preceded landscape deterioration or destruction can be recreated, the original state of the landscape can never be truly restored.*" (p. 12)

Degradation of landscape
"*13.029 The landscape resulting after a period of timber harvesting or other routine operational treatment may be equal to, better or worse than the original forest. In the short term, the visual impacts are usually adverse. Such things as excess soil disturbance, massive erosion, poor regeneration, careless burning of slash, bulldozed tracks and snig tracks all cause degradation of the landscape.*" (p. 16)

Construction Works
"*13.031 Many of the Department's activities, such as the construction of roads, bridges and dams and the preparation of areas for reforestation or afforestation involve the use of heavy machinery such as bulldozers, graders and so on. There are many examples of poor landscape treatment for example windrows or avenues of*

stumps left after road construction; isolated trees and stumps left in borrow pits; plantation clearing that pushes all unwanted debris into wetlands or streams; ugly scars from bad design of firebreaks in rolling landscape.

It is appreciated that it is not always possible to avoid these effects. However, operations can usually be planned with attention to landscape without much additional cost. Repairs to this kind of aesthetic damage are always costly and rarely satisfactory." (p. 16-17)

GUIDELINES - 1981

Jarrah 81 : Guidelines for Planning and Control of Logging and Silvicultural Operations in the Northern Jarrah Forest, West of Quarantine. 1981

4.5.8 Influence Zones
"*These are areas designated by the planner which surround special natural or artificial features in the forest.*" (p. 26)

"*After designation, the local D.F.O. will prepare an appropriate prescription for each area, taking into account land use, dieback status, hygiene, aesthetics, conservation values and risks of visual or noise pollution or of undesirable effects on water supply*." (p. 26)

HANDBOOK – 1981

Bauxite Mining Northern Jarrah Forest Mining Operations Handbook 1. Edition 1. 1981

'Rehab 80' : Prescription for Rehabilitation of Bauxite Mines in Western Jarrah Forest
3. Rehabilitation Objective
"*The overall objective for rehabilitation of bauxite mines in the western jarrah forest is :-*

'To regenerate a stable forest ecosystem, capable of maintaining or enhancing water, timber, recreation, conservation and/or other nominated forest values'.

Specific goals (not listed in order of importance since priorities may vary with designated land use) are :-
[…]
3.5 Landscape : To create a rehabilitated landscape visually compatible with the adjoining remnants of indigenous forest.
[…]" (p. 38)

5. Planning Approval
"*5.1 Overall rehabilitation planning must precede, not follow, the mining operation. Accordingly, the following aspects must be taken into account in the preparation and approval of the 5 year Mining and Management Plans for each mine site :-*

- *landscaping requirements and visual effects*

- *buffer zones for screening and fire protection*

[…]" (p. 39)

7. Planting
"[…]
(vii) Visual compatibility with indigenous forest

(vii) Useful nectar source.

There are currently no tree species with proven capacity to satisfy all these criteria. The following will therefore be used as an interim measure :-

7.2High in the original landscape (i.e. the original jarrah forest uplands) :

E. wandoo
E. laelii
E. accedens
E. resinifera
E. maculata
E. calophylla

7.3 Low in the original landscape :

E. patens
E. saligna
E. calophylla

7.4 Swamps and pit sumps :

E. patens
E. megacarpa
E. rudis

[…]

7.7 <u>Planting Layout & Design</u>
7.7.1 Species will be established as random mixtures, not pure stands. In every mixture a minimum of 50% of trees must be W.A. indigenous species. Species mixes will be determined in advance and specified in the rehabilitation plan.

7.7.2 Plant espacement approximately 4m x 4m (i.e. 625 trees/ha, not counting the sown jarrah)." (p. 41)

10. Scrub Seeding
"*10.1 The aim of scrub seeding is to assist with erosion control and general site rehabilitation. Species to be used will be reviewed for each site each year. Criteria for species selection will be dieback tolerance, habit and nutritional value.*

10.2 <u>Base species</u> to be used will be selected from : Acacia pulchella, A. strigosa, A. drommondii, A. saligna, Kennedya cocinea and K. prostrata.

[…]
10.4 <u>Species not to be used</u> are non-indigenous species Proteacaea or large woody and inflamable species such as Albizzia.

10.5 Scrub seed mixes will be determined in advance and specified in the rehabilitation plan for each pit and for specific sites within pits." (p. 42)

Interim Prescription : FIRS 80
7. Site Description
"*Within each management priority area and dieback status the following will be identified as possibly requiring different treatments.*" (p. 46)

"*7.3 Visibility from major roads or tracks used by the public. Areas will either be :*

- *visible, or*
- *not visible.*" (p. 47)

8. Graveyard Dieback – Water Production MPA
"*For all sites except stream zone.*" (p. 47)

"*8.9 <u>Low Potential for Timber Production – Visible</u>*
Select leguminous understorey species for specific aesthetic purposes. Do not plant trees." (p. 48)

FORESTERS' MANUAL – 1980

<u>Foresters' Manual : Fire Protection. Rev. 1980</u>

Hazard Reduction
"*70. The area O.I.C is to ensure prescribed burning conforms with required environmental standards, i.e.:*
70.1 Strips fronting major tourist routes and surrounding tourist attractions not to be burnt during the main floral display of the wildflower season." (p. 22)

MANAGEMENT PLAN – N.D. - 1980?

<u>Land Management Plan for State Forest in the Mount William Area. N.D. 1980?</u>

2.6 Recreation Development
"*Preparation of landscape plans will ensure rehabilitation conforms with any recreation proposals for the area.*" (p. 10)

3.2.3 Effect of influence zones on the general logging prescription
"*3.2.3.1 Developed and proposed recreation sites (e.g. Mt. Williams, picnic sites, lookout sites). These areas are to be surrounded by a buffer in which no cutting is to take place, with the exception of dying and dangerous trees. The width of the buffer is to be not less than 100 metres, but in any case will be sufficient to ensure that the vista from the recreation area is free from the immediate impact of logging.*

3.2.3.2 Recreation routes (e.g. Western Boundary Road, Wagerup-Willowdale Road, walk tracks). In the forest immediately adjoining these routes:

(a) All merchantable dying and dangerous trees overhanging the route to be removed for safety reasons.

(b) Retain a buffer strip, having a minimum width of 100 metres each side of the route and of sufficient width to ensure the vista from the road is part of the buffer. The logging and regeneration prescription applied to this buffer zone will depend upon the dieback risk category in which the buffer is located.

[…]

"*(c) Where extensive forest vistas form a backdrop to cleared private property, the prescription is to be modified so that there is minimal visual impact.*

(d) Minimise aesthetic impact by removal of debris around all trees and by laying tops on the ground." (p. 18)

3.3 Stand Improvement (Forest Improvement and Rehabilitation Scheme)
3.3.4.3 Recreation Routes and Sites
"*Dieback infected sites will be rehabilitated in a manner which best enhances the particular feature or facility. Options include full stocking of tall tree species, planting in clumps, use of low shrub species, a varied vegetation structure and floristic composition etc.*" (p. 23)

3.4 Recreation Development
3.4.3.1 Western Boundary Road
"*(c) Larger areas of degraded forest resulting from dieback infection will be rehabilitated to form a screen of resistant vegetation immediately adjacent to the road (except where mining is planned to take place within ten years). Smaller areas of advanced forest degrade (e.g. one hectare or less) will not be treated.*" (p. 27)

3.6 Environmental Control over Bauxite Mining and Rehabilitation of Mined Areas
"*(e) Modified clearing applications to be forwarded to Head Office by Alcoa.*

Landscape plans for sensitive areas to be referred back to the Erosion Control and Rehabilitation Working Group for endorsement.
[…]" (p. 37)

3.6.2.2 Timber Salvage and Clearing Phase
"*(b) The 'envelope' of mining operations will be defined annually by the Regional Superintendent upon recommendations from O.I.C. Harvey. Alcoa are to restrict access to the general area of mining activity by physical closure of roads or by locked gates in order to ensure public safety. O.I.C. Harvey will annually review with the company its responsibilities for forest fire attack in the lease area.*

[…]
(d) Remove topsoil (by Alcoa) to a stockpile, or where possible, replace directly as part of rehabilitate procedure on mined pit floor." (p. 38)

3.6.2.3 Extraction Phase (carried out all seasons)
"*(a) Continually monitor mining activities in relation to planned procedures for sensitive areas. Refer matters of concern to the Mine Superintendent, but where these cannot be resolved, to be referred to the Regional Operations Leader.*" (p. 38)

3.6.2.4 Rehabilitation Phase
"*(d) Alcoa are to carry out earthworks to prepare the landscape for tree planning according to the rehabilitation specification. This involves the following:*

- *pits are landscaped by blasting, battering the walls and grading the floor;*

[…]" (p. 40)

PLANNING POLICY - 1977

<u>A Perspective For Multiple Use Planning in the Northern Jarrah Forest. 1977</u>

Introduction
"*The Forests Department is required to provide a multiplicity of benefits from the northern jarrah forest according to the inherent capabilities of the environment, the existing statutory constraints and the recognised public demand. This objective is attainable because sufficient data are now available for a comprehensive and environmentally responsible regional plan.*" (p. 4)

"*This document sets the overall perspective for the development and subsequent implementation of detailed proposals. In doing this the region has been divided into six management zones based on geomorphology and*

climate. However, for detailed local planning it is envisaged that site vegetation zoning will be more appropriate and precise.

The management strategies proposed supplement the Forests Department policy on multiple land use." (p. 4)

3. Current Management and Resource Use
Fire Protection
"*A number of alterations to fire protection policy have resulted from decades of fire research and practice, which give greater emphasis to conservational, environmental and aesthetic values. These include:*
[…]
b) burning roadsides over long distances simultaneously is to be avoided for aesthetic reasons." (p. 22-23)

4. Proposed Management Strategies
4.1 Dissected River Valleys and Scarp, High Rainfall Zone (more than 1 150 mm/annum)
Current Land Uses
"*a) Water storage (large storage dams and small pipehead dams).*
b) Recreation, (passive and active), based on optimal opportunity for land and water based recreation and proximity to centres of population.
c) Silviculture of Pinus radiata, based on high soil fertility and high rainfall.
d) Conservation of flora and fauna.
e) Silviculture of indigenous hardwoods, in particular blackbutt and jarrah." (p. 23)
"*f) Grazing of cattle and sheep on improved (clover) and rough pastures.*
g) Horticulture, market gardening and intensive animal production." (p. 24)

Management Strategy
"*(e)* […] *The hardwood forest will be managed extensively, giving due regard to aesthetics and erosion control.*" (p. 25)

4.2 Lateritic Uplands, High Rainfall Zone (more than 1 150 mm/annum)
Management Strategy
"*b) Mining is acceptable here (particularly in the western parts of this zone, where a considerable area is already infected by dieback), because:*
[…]
(iv) the vegetation is already disturbed by dieback, can no longer be considered natural and will need to be rehabilitated. Within existing catchments a minimum cover to increase water yield, restore aesthetic appeal and provide for erosion control is proposed." (p. 27)

WORKING PLAN - 1977

General Working Plan No. 86 of 1977. Part I. 1977

4.2 The Concept of Multiple Use of Land Management
"*(c)The selection of a priority or dominant use for an area with the practice of secondary uses which in some circumstances may not significantly interfere with the primary aim, but in others may impose a restriction on output from each competing use. This necessitates a social ranking of use priorities which can usually be done satisfactorily with limited data and experienced value judgement. The Forests Department has adopted this approach for the future management of State Forests and timber reserves.*

Multiple use has temporal as well as spatial over-tones. In the long term the structure of use priorities may alter with socio-economic, technological and successional changes. Such changes could be brought about by a number of influences such as dieback spread, mining, increased water supply requirements or altered demand for wood." (p. 31)

5.7 Mining
5.7.2 Gravel, Stone and Sand
5.7.2.4 Objective of management
"*The objective is to provide gravel, stone and sand for Government and semi-government authorities where there is no reasonable alternative supply, and where the supply will not result in the spread of dieback or prejudice amenity values.*" (p. 109)

5.8 Public Utilities
5.8.4 Objective of Management
"*The objective is to limit further development of public utilities which result in loss of forest values to those considered essential by Government, and for which there is no reasonable alternative location. Where this is so, any such development will be planned to ensure that it results in least environmental damage and minimum land use conflict.*" (p. 113)

5.8.7 Management Strategy
"*4. Guide public utilities into areas where the salinity risk and aesthetic impact are minimised. Encourage the use of landscaping*." (p. 113)

FOREST POLICY – 1975?

Forest Policy : Western Australia. [1975?]

Introduction
"*It has therefore become necessary to restate forest policies to take into account the major changes that have taken place since rigid control of the timber industries was first introduced in 1918.*

The objectives of forest management at that time were to protect the forest estate through control of the industry and to protect the forest itself from fire and other destructive agencies.

In more recent times there has been a greater emphasis placed on multiple-use of the forest but with a strong tendency still to produce timber for industry. However, multiple-use demands have imposed limits on the timber resources of the native forests. Emphasis has therefore been given to pine planting to provide a source of timber to supplement and in some instances replace those native forests that will be required for purposes other than timber production.

This statement will outline the current situation regarding those permanently dedicated State Forests and Timber Reserves which come within the stewardship of the Forests Department and formally establish management objectives according to the requirements that now exist. It will take into account a multiple-use concept of those forests managed by the Forests Department." (p. 2)

2.9 Wood Chipping
"*The reasons for approval being given for the wood chip operations are many. They are both economic and social but from the forest management point of view, the opportunity is now given to bring about a renewed state of health and vigour to the forests. Past use of the forest has provided logs that have been used entirely by the sawmilling industry. It has hitherto not allowed complete utilisation of what are overmature forests, crowded by stagnant trees that preclude regeneration of a new forest crop which could, if allowed to grow, be managed and protected to produce most valuable and aesthetically – attractive forests. Such forests would be capable of not only generating their own economy but also providing the non-productive benefits that now exist.*

The management objective of the area now defined as the wood chip is to improve utilisation through use of residues not currently processed in an established sawmilling industry, to use the operation as a silvicultural tool and at the same time, continue to provide the current social values of the forest." (p. 11)

3.1.1 Multiple-Use Priorities
"*Multiple-use management implies the realisation of the best combination of forest benefits according to the particular attributes of each area considered. Compatible benefits may be derived simultaneously from the same area, but separate areas must be used where there is conflict in management for non-compatible benefits.*

In order to overcome the problems imposed by limited forest area, it is proposed to establish a system of management priorities so that the greatest possible number of compatible uses can be practised throughout most of the forest, whilst carefully selected representative areas of native forest will be managed specifically to retain them in an undisturbed condition for scientific reference purposes." (p. 12)

"*The major forest values currently recognised for multiple-use management are:*

Timber Production
Water Supplies
Amenity and Recreation
Flora and Fauna
Special Scientific Values" (p. 13)

3.1.2 Multiple-Use Requirements
"*Future requirements to meet the need for multiple-use forest management posed by increasing public demand are:*

Classification and designation of State Forest into areas to be managed according to a scale of multiple-use priorities, together with increased security for these management objectives.

[…]" (p. 13)

FORESTERS' MANUAL - 1972

Foresters' manual : reforestation and silvicultural operations : jarrah and karri. 1972

Roadside thinning
"*Where a thinning operation is to be done adjacent to a main road, unwanted stems will be felled for a distance of five chains on both sides of the road. The stumps of felled trees will be sprayed to saturation with a 4 per cent. solution of 2,4,5-T ester in distillate or kerosene to prevent coppicing.*[...]" (p. 24)

WORKING PLAN – 1971

General Hardwood Working Plan No. 85. 1971

7.2 Forest Conservation and Multiple Use Management
"*In all operations proper attention will be paid to:*

[…]

3. *Preservation and improvement of amenity values within the limitations of available special funds*." (p. 36)

FORESTERS' MANUAL – 1964

The Foresters' Manual : Reforestation and Silvicultural Operations : Jarrah and Karri. 1964

Appendix C : Prescription for Jarrah Pole Thinning
4. Thinning Procedure
"*(b) Roadside improvement work and private property boundaries. – When thinning in these locations, all surplus trees must be fallen and their stumps poisoned in a belt at least 10 chains wide along main roads or one compartment wide along private property boundaries.*" (p. 31)