

NORTHERN, CENTRAL AND SOUTHERN FOREST REGION MANAGEMENT PLANS

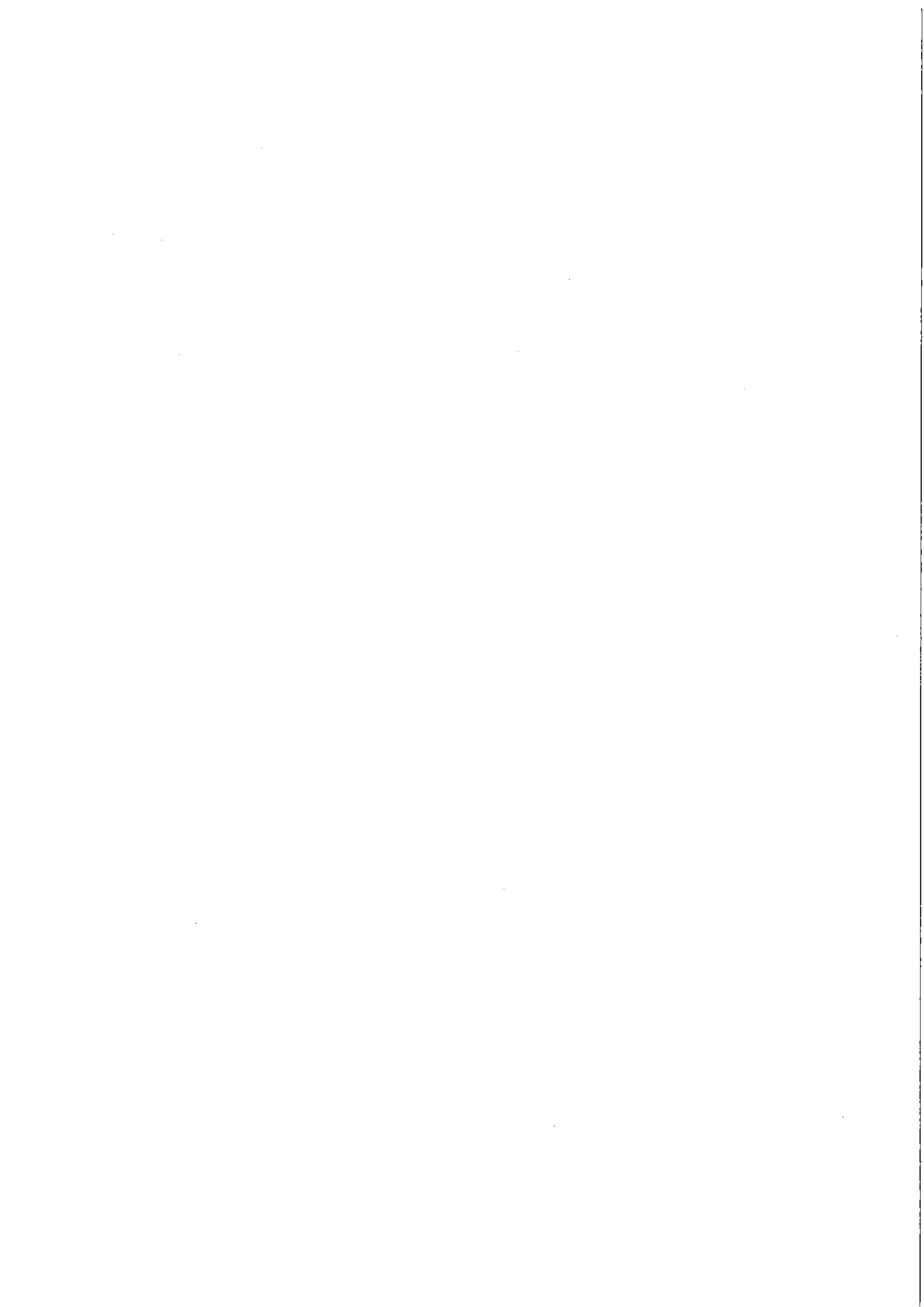
DEPARTMENT OF CONSERVATION & LAND MANAGEMENT
(for NATIONAL PARKS & NATURE CONSERVATION AUTHORITY AND
LANDS & FOREST COMMISSION)

Report and Recommendations
of the
Environmental Protection Authority

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SUMMARY AND RECOMMENDATIONS

In accordance with the Conservation and Land Management Act, the Department of Conservation and Land Management (CALM) has prepared Management Plans for the Northern, Central and Southern Forest Regions. The Management Plans cover land in these regions vested in the National Parks and Nature Conservation Authority, the Lands and Forests Commission and the Executive Director of the Department of Conservation and Land Management.

The Environmental Protection Authority (EPA) decided to assess the plans under the environmental impact assessment provisions of the Environmental Protection Act 1986.

In view of the extensive public review process undertaken by CALM for the management plans, the Environmental Protection Authority did not seek separate submissions for its assessment.

Subsequent to the release of the Draft Management Plans, the EPA has interacted with CALM with a view to ensuring that the Final Management Plans were environmentally acceptable.

The EPA has concluded that the three Forest Region Management Plans now represent a major step forward. They provide the basis for securing conservation areas initially identified in proposals for State Forest by the then Forests Department and subsequently recommended by the EPA after review through the conservation through reserves process. The EPA's recommendations made in 1976, 1982 and 1983 were subsequently endorsed by Government. The proposals contained within the plans are supported by the Authority and should be implemented.

Some matters requiring further consideration were raised with CALM during the Authority's assessment. On these matters the EPA reached the following conclusions:

- . Beavis-Giblett forestry block. The Authority has noted that this forestry block is to be retained within State Forest on the understanding that the option for reservation remains until further reviewed, and that it is managed accordingly;
- . for a Nature Reserve and a number of Conservation Parks in the central jarrah forest, it is proposed that management of surrounding State Forest be sympathetic with the conservation areas. The EPA has agreed with the proposal;
- . the Authority has noted that the former Blackwood River Recreation Management Priority Area which is available for selective logging is to be reduced in size to the viewshed from the river but be secured as a Conservation Park and will be free from logging;
- . road, stream and river zones will be reviewed by the Authority in the future. In the meantime, the area and purpose of the zones should remain unchanged, and
- . the Authority now considers that regenerative logging of the central Shannon River Basin is no longer necessary, consistent with its status as a National Park.

With respect to monitoring of environmental impacts of management of State Forest, the EPA considers that as part of CALM's commitment to providing

public information, it should make specific information available on these aspects on a regular basis.

The Environmental Protection Authority considers that implementation of the Northern, Central and Southern Forest Region Plans provides a mechanism to balance conservation and production areas within the three Forest Regions, and accordingly, the Authority makes the following recommendations:

RECOMMENDATION 1

The Final Management Plans for the Northern, Central and Southern Forest Regions include proposals for setting aside and managing locations of high conservation value. They are a major step forward toward the implementation of the EPA's conservation reserve recommendations for the State's Forest Regions. The EPA agrees with and supports those proposals in the Final Management Plans. The EPA recommends that the Management Plans be implemented.

RECOMMENDATION 2

The EPA, noting that:

- (1) Beavis-Giblett Block is proposed to remain as State Forest;
- (2) the Block will be managed as a strategic fire buffer;
- (3) the purpose and tenure of the Block will be reviewed at the expiry of the term of the Southern Forest Region Management Plan, within 10 years;
- (4) the Executive Director has undertaken that the Block will not be logged for 15 years, thereby preserving the option for its reservation as intact forest at some time in the future,

recommends that Beavis-Giblett Block be managed accordingly, subject to the undertakings referred to above.

RECOMMENDATION 3

The EPA recommends that the area management plans that will be prepared for those proposed Nature Reserve and Conservation Parks related to the existing Dalgarp, Lennard, Mullalyup, Preston, Noggerup, Mowen and Dardanup MPAs should include detailed management proposals for those portions of the MPAs which have the capacity for direct interaction with the reserved area and will remain within State Forest, to ensure protection of the ecological values within the Nature Reserve and Conservation Parks.

RECOMMENDATION 4

The EPA, noting the reservation of the viewshed from the Blackwood River within the Blackwood River MPA as a Conservation Park, recommends that the remainder of the existing MPA should be managed to ensure protection of the conservation, landscape and recreation values within the Conservation Park. The area management plan for the Conservation Park should include detailed management proposals for that portion of the MPA that will remain within State forest.

RECOMMENDATION 5

The EPA, noting that:

- (1) historically road, river and stream zones have been free from commercial logging,
- (2) CALM is now preparing a review of these zones, including an analysis of results of research on logging in trial areas,

recommends that the existing area and purpose of the system of road, river and stream zones in the Southern Forest Region should not be altered until the proposed review by CALM has been completed and the EPA has reported on them. This review should include consideration of silvicultural practices within the zones.

RECOMMENDATION 6

The EPA, noting that:

- (1) all State Forest includes significant conservation values,
- (2) the need for on-going management of these values in production State Forest has been recognised by CALM,
- (3) monitoring and research of environmental impacts is part of CALM's activities,
- (4) CALM has a commitment to providing public information,

recommends that CALM make public, on a regular basis, the monitoring and reporting of environmental impacts of management of State Forest.

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1. INTRODUCTION

In April 1987, the Department of Conservation and Land Management (CALM) released proposals for the management of the State forest and conservation areas within the Northern, Central and Southern Forest Regions (CALM, 1987 a,b,c,d,e). These administrative regions include almost all of the State forest within the South West Region and contain a large number of other areas under the management responsibility of CALM, such as nature reserves and national parks.

The preparation of these plans is required under the Conservation and Land Management Act.

The management proposals for the three regions were contained in a set of five documents:

- . Northern Forest Region Draft Management Plan;
- . Central Forest Region Draft Management Plan;
- . Southern Forest Region Draft Management Plan;
- . Northern, Central, Southern Forest Regions Draft Management Plans Supporting Papers, and
- . Timber Production in Western Australia (Draft) - A Strategy to take W.A.'s Forests into the 21st Century.

As required under the Conservation and Land Management Act, the Draft Management Plans and other documents were released for public review and comment by CALM for a period of two months, closing on 17 June 1987. This was later extended for a further month.

During this review period, the Environmental Protection Authority (EPA) decided to assess the management plans formally under the provisions of Part IV of the Environmental Protection Act. As the Draft Management Plans were already subject to public review, the EPA did not require additional public release nor did it seek public submissions. However, the EPA received a total of 31 public submissions in relation to the Draft Management Plan proposals.

The EPA adopted the approach in this assessment that it would consult with CALM during the revision of the plans and provide a report and recommendations on the Final Management Plans to the Minister for Environment, prior to their consideration by Government.

The EPA's evaluation of the management plans has concentrated on ensuring that conservation values of areas considered in the Management Plans were protected. In doing this, the EPA has been guided by previous recommendations which have been endorsed by Government.

The EPA has focussed on the issues of security of tenure and purpose of areas proposed as conservation reserves in the Management Plans. The EPA recognises that these reserves will be subject to specific management plans in the future. With regard to State forest management, aspects associated with woodchipping operations will be reviewed by the EPA in its assessment of the WA Chip & Pulp Co Pty Ltd licence renewal.

2. HISTORICAL BACKGROUND TO CONSERVATION IN THE STATE'S FORESTS

The importance of these Management Plans can be seen in the context of the history of conservation recommendations in the three Forest Regions.

An examination of the need for and recommendations on the establishment of a comprehensive series of reserves to be representative of all major communities of natural wildlife and scenery types in Western Australia was undertaken by the Australian Academy of Science in the early 1960s. The initiative presented by the Academy was taken up by the EPA.

One of the early decisions of the EPA following its establishment in 1971 was to form the Conservation Through Reserves Committee (CTRC), to provide advice and recommendations on the adequacy of existing conservation reserves and national parks in Western Australia and proposals for additional reserves. This review process was commenced at the beginning of 1972 and completed in 1983, with the System 6 Report of the EPA.

To assist the process of review the CTRC divided the State into 12 regions, termed systems. The conservation opportunities and requirements within each of these systems were reviewed and recommendations to the EPA, and subsequently the Government, were made. The Northern, Central and Southern Forest regions are included within the following systems:

- . System 1 - South West;
- . System 2 - South Coast;
- . System 4 - Wheatbelt, and
- . System 6 - Darling.

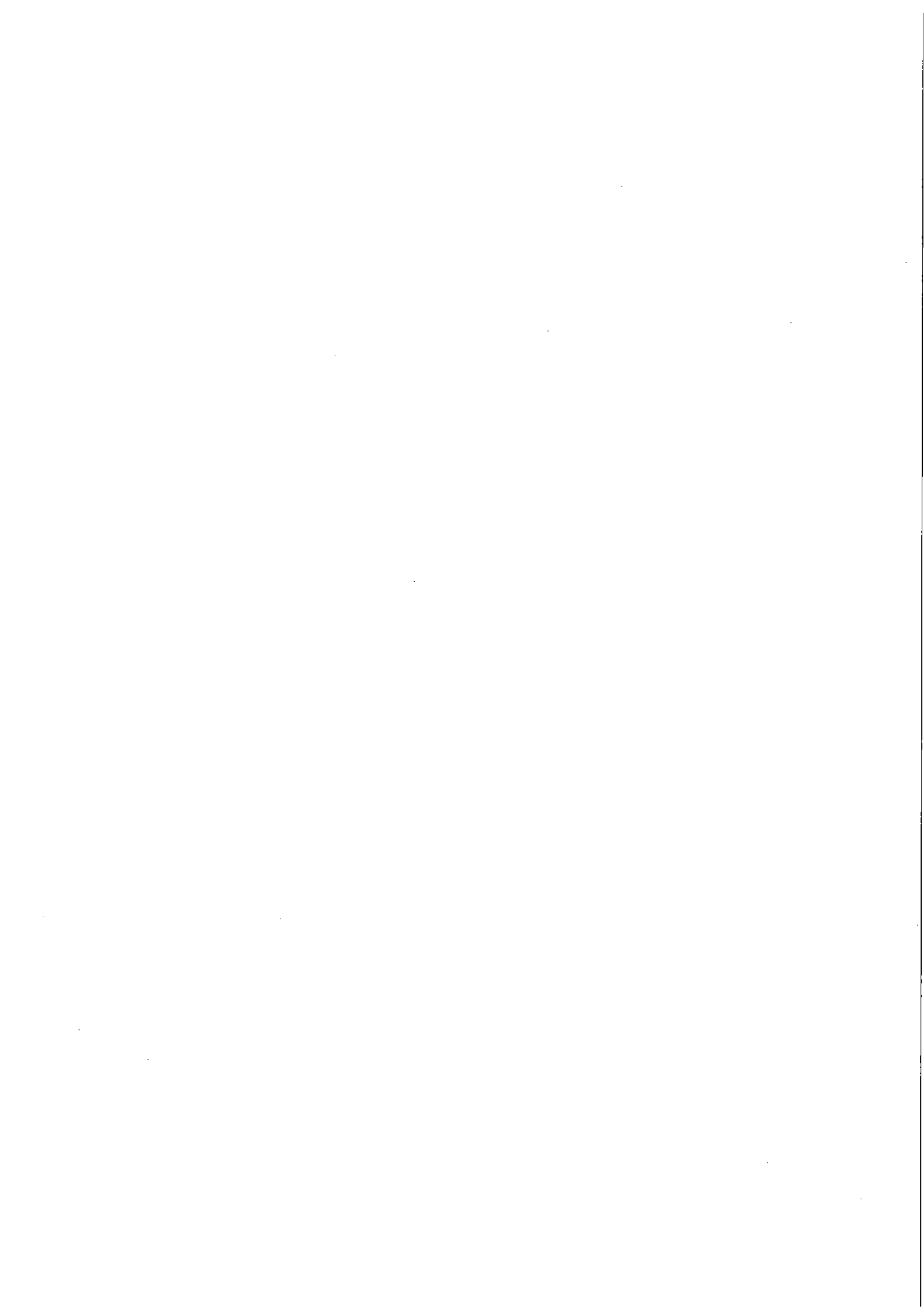
The location of these systems is indicated in Figure 1.

In addition, the specific conservation requirements within the Karri forest, largely contained within System 2, received further consideration by the EPA in 1982.

The EPA also assessed specific production forestry issues associated with woodchip operations within the Southern Forest Region in 1975.

Other organisations and groups were also formulating proposals for the setting aside of areas of high conservation value. For instance, the Institute of Foresters made proposals in relation to areas in the Karri Forest and along the South Coast. The Forests Department also responded to the growing awareness of the need to protect areas with conservation value. In its 1972 Working Plan, the Forests Department pointed to the need for selected forest reserves and to focus attention on flora and fauna conservation, catchment management and recreation. This approach was implemented in Forests Department Working Plan No.86 (1977), which divided the State Forest into areas in which the dominant and secondary uses would be specified and their priority ranking nominated. These became Management Priority Areas (MPAs). As well, in more detailed Land Use Management Plans prepared by the Forests Department, the conservation and recreation management priority area concept was further detailed, within the context of a classification system for land uses throughout State forest.

Conservation groups closely examined specific development proposals for areas of State Forest and contributed to the debate on the adequacy of representation of conservation reserves. Proposals were presented in "Karri at the Crossroads" for increased areas of the Karri Forest to be set aside in conservation reserves (Conservation Council of WA et al, 1982). Areas in



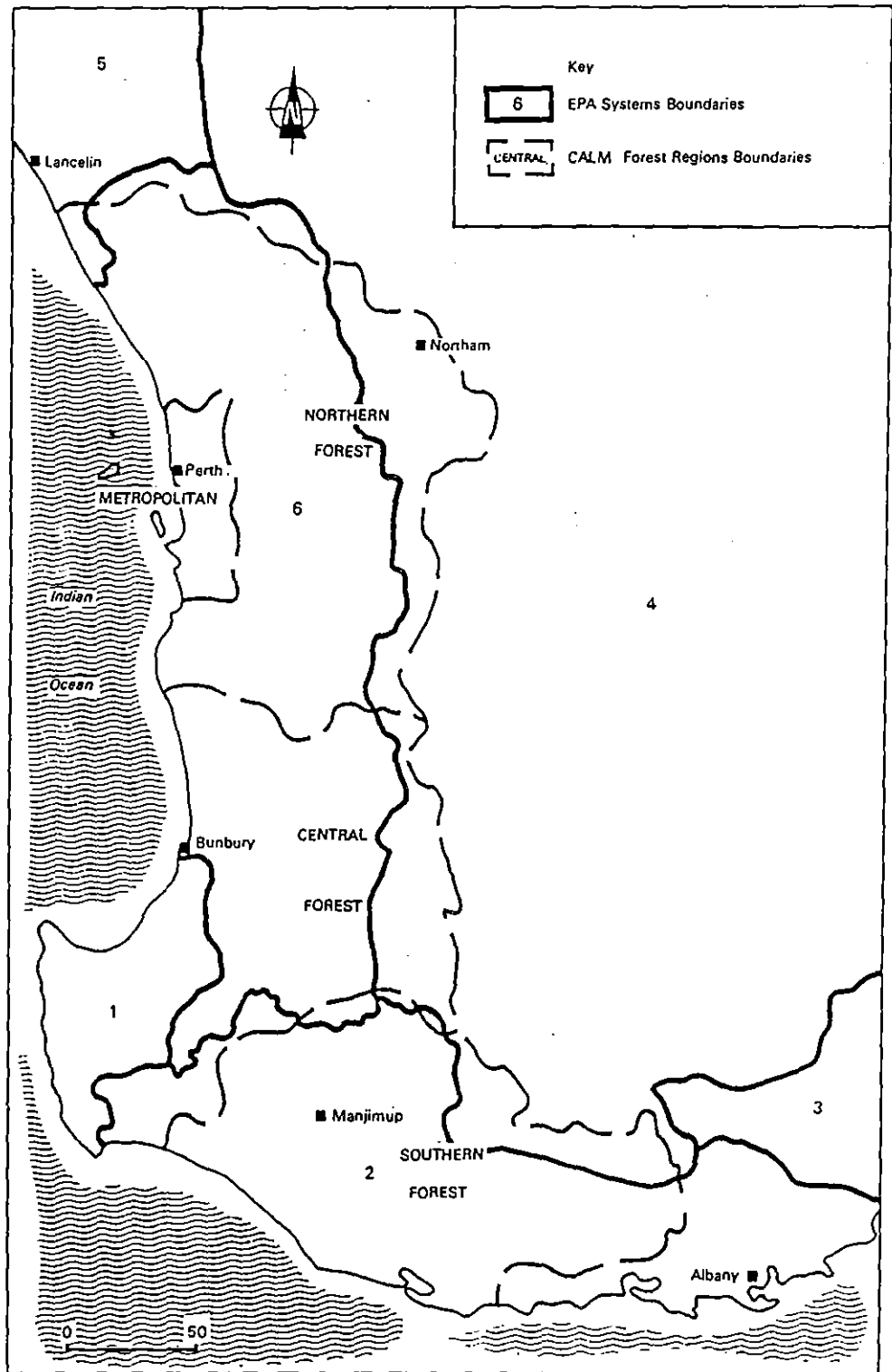


Figure 1. Boundaries of EPA Systems 1, 2, 4, and 6 and CALM Forest Regions.



the Northern and Central Forest Regions were also subject to major submissions proposing the creation of conservation reserves in the Jarrah forest and areas of Wandoo forest.

The series of reports and recommendations made by the EPA in relation to conservation reserves in the three Forest Regions forms the core of this assessment. Therefore, they are discussed briefly in the remainder of this section.

2.1 1974 CONSERVATION THROUGH RESERVES COMMITTEE REPORT

Following its convening in 1972, the CTRC commenced its review by preparing a report and recommendations on 10 of the systems, excluding System 6 (Darling) and System 7 (Kimberley). The report on these 10 systems was presented to the EPA in August 1974 (CTRC, 1974). Not only did the CTRC make recommendations on specific portions of land, but it also considered a number of special aspects of conservation, including legislative amendment of the Forests Act to set aside specific areas within the State forest for conservation purposes. Most of the expert advice on forest conservation matters was given by the then Forests Department.

The CTRC believed that a substantial area of forest containing pure Karri and Karri-Marri associations, the Shannon River Drainage Basin, should be set aside in perpetuity as a major conservation reserve.

2.2 1976 EPA RECOMMENDATIONS

At the same time as the Conservation Through Reserves Committee was examining the conservation needs within the State, the Environmental Protection Authority was evaluating the environmental implications of the proposed Manjimup woodchip project (Forests Department, 1973).

In its First Interim Report on the Marri Woodchip (Manjimup) Project, the EPA (1973) briefly discussed aspects of silvicultural management, salinity control and conservation of fauna within the forest.

In the light of further information, the EPA prepared a Second Interim Report on the Project (EPA, 1974). This report included discussion on the recommendations of the Conservation Through Reserves Committee on the Shannon River Drainage Basin. The Authority noted that some parts of the Shannon River Basin had been damaged by fires, and could be cut over and then rehabilitated.

Prior to its consideration of the CTRC recommendations, the EPA initiated a review of the System 1 and 2 CTRC recommendations. The Special Review Committee appointed by the EPA reported in March 1976 (DCE, 1976). This Committee agreed with the principles expressed by the CTRC and outlined some additional considerations. It also endorsed the majority of the CTRC recommendations, but proposed an alternative means of representing the range of Karri ecotypes found in State forest within System 2.

The EPA made an inspection of parts of the Shannon River Basin, and was given advice on fire damage to forest in the central Shannon. The clear impression was that most of the central Shannon was extensively damaged and that regenerative logging was justified.

The EPA reported to Government on Systems 1, 2, 3 and 5 on 9 July 1976 (EPA, 1976). These recommendations by the EPA were endorsed by the Government on 20 October 1976.

2.3 1982 KARRI FOREST CONSERVATION RECOMMENDATIONS

During the EPA's examination of the Marri Woodchip Project, the EPA reached agreement with the Conservator of Forests on the area of forest within the Shannon River Basin that would be logged during the first five years of the woodchip licence. In 1982 the EPA re-examined Karri forest conservation as a result of the expiry of this agreement. Proposals by the Forests Department (1981) and public comments on those proposals were considered by the EPA, which also sought independent expert advice from Dr. Peter Attiwill.

In its report to Government, the EPA (1982) reiterated its 1976 recommendations, elaborated on management of the karri forest to maintain conservation values and made specific comment and recommendation on the Shannon River Basin. The EPA reaffirmed the need to set aside and protect the purpose of areas within the State forest that have high conservation or recreational values in its 1982 report.

2.4 1983 SYSTEM 6 RECOMMENDATIONS

For the Darling System (System 6), the EPA adopted a different approach. A series of proposing and review committees which prepared conservation proposals for submission to the EPA was established. Recommendations by the System 6 Committee were presented to the EPA in April 1981 (DCE, 1981). These were then subject to public scrutiny.

The EPA's report and recommendations on System 6 was presented to Government on 21 October 1983 (EPA, 1983). The report contained a set of general principles and recommendations (Part I) as well as specific recommendations discussing 209 localities (Part II). Within Part I, a set of recommendations were made relating to areas of high conservation value in State forest generally. These recommendations referred to the need for areas committed to conservation priority in State Forest to have security of tenure and purpose, such that both Houses of Parliament would need to approve any change.

On 19 March 1984 State Cabinet accepted in principle and approved of their progressive implementation, as far as possible.

2.5 PROGRESS TO IMPLEMENTATION

There have been some significant moves toward reservation of areas of high conservative value in recent times. These reflect the initiatives given by organisations such as Conservation groups, the Forests Department, Department of Conservation and Land Management and the EPA. Proposals that have evolved over time and have been implemented include, for example, the Northern Jarrah Reserve proposal which was implemented through the creation of the Lane-Poole, Monadnocks and Serpentine Reserves with security of purpose and tenure. Likewise, the Shannon River Basin has been reserved as a National Park. The creation of these and other reserves needs to be recognised as very important gains that have already been made for the protection of areas of acknowledged conservation value.

3. CALM FOREST REGION MANAGEMENT PLANS

The three CALM administrative regions, Northern, Central and Southern, contain a range of land reserves vested in the National Parks and Nature Conservation Authority (NPNCA) and the Lands and Forest Commission, (LFC) as well as land held in freehold under the name of the Executive Director of

the Department of Conservation and Land Management. The boundaries of these regions is indicated in Figure 1.

As required by the Conservation and Land Management Act, Draft Management Plans were prepared by CALM, the agency responsible for managing the lands vested in the NPNCA and the LFC.

These Draft Management Plans address all of the land under the management control of CALM, which is mainly land reserved for the purposes of National Park, Conservation of Flora and/or Fauna, State Forest, and Timber Reserve.

Following the public review of the Draft Management Plans, Final Management Plans have been prepared, taking into account comments made and issues raised in submissions.

3.1 DRAFT MANAGEMENT PLANS

The Draft Management Plans comprise three principal documents, the Northern, Central and Southern Forest Region plans, as well as Supporting Papers and the related Timber Production strategy (CALM, 1987 a,b,c,d,e).

In relation to conservation, the Draft Management Plans contained the following major proposals:

- (a) a change to the categories of land vested in the controlling bodies and managed by CALM. The main changes to the existing categories were the introduction of the terms State Park, which would have similar status to National Park but reflect the reduced area or value of the land, and Forest Park/Reserve, which was intended to reflect a managed resource area, whereby management would be for conservation and/or recreation with controlled exploitation resources being permitted in prescribed zones which would have A class security of tenure and purpose;
- (b) improved security of purpose of proposed categories. The Draft Management Plan proposal was for the security of purposes of all categories of land within the Forest Regions to be assured. This has provided the requirement to obtain the consent of both Houses of Parliament for any change of area, purpose or vesting;
- (c) amendments to the existing purpose of some land currently vested in the controlling bodies and the increase in the area of land vested in the controlling bodies. A significant number of changes to the purpose of land vested in the controlling bodies was proposed. In general, these were a consequence of the revised land categories proposed in the Draft Management Plans and included proposals for large areas of State Forest to be excised and reserved for conservation purposes. In addition, proposals were put forward for an increase in the area of land vested in the controlling bodies; and
- (d) a proposal for a review of the road, river and stream zone system in the Southern Forest Region. The Draft Management Plan includes a proposal that road, river and stream zones in the Southern Forest Region be reviewed, with a view to obtaining the agreement of the EPA to the redistribution of these areas. No changes to the existing system or management of these reserves would be made without the approval of the EPA.

3.2 FINAL MANAGEMENT PLANS

Following the public review period, CALM has revised the proposals contained in the Draft Management Plans and prepared Final Management Plans (CALM, 1987 f, g, h, i, j, k). These plans have been considered and approved by the National Parks and Nature Conservation Authority and the Lands and Forest Commission.

The EPA has received a copy of the Final Management Plans and has also separately received on-going advice from the Executive Director, CALM (Appendix A & B).

A range of amendments to the Draft Management Plans and related documents has been made. These are listed in Table 1 of the Summary of Public Submissions (CALM, 1987k)

Significant amendments include:

- . the replacement of the classifications of State Park and Forest Park/Reserve with Conservation Park;
- . inclusion of a description of the criteria used for allocation of land to particular categories;
- . expansion of the definition of conservation;
- . elaboration of CALM's environmental protection policies, and
- . publication of a conservation and recreation strategy.

The new categories of land now proposed to be vested under the Conservation and Land Management Act are:

- . Nature Reserve;
- . National Park;
- . Conservation Park;
- . Marine Park;
- . State Forest;
- . Timber Reserve, and
- . miscellaneous reserves.

The previous classifications of State Park and Forest Park/Reserve have been replaced by Conservation Park. This category reflects the conservation and/or recreation priority use of the land and would exclude any production purposes (see Appendix A).

With this change, most areas that were to have the category of State Park or Forest Park/Reserve would now have Conservation Park as their classification. Some areas within the Central and Southern Forest Regions which were proposed to be Forest Park/Reserve remain within State forest in the Final Management Plans. A number of these areas are discussed later in this report (Section 4.2.4).

Other significant amendments in the Final Management Plans include the creation of Perup MPA as a Nature Reserve, addition of Giants Block to Walpole-Nornalup National Park, the proposed investigation of the Mt Lindsay area for national park, expansion of Yanchep National Park and addition to the proposed Caraban Nature Reserve.

The proposed use of zones within these classifications has been retained in the Final Management Plans and this term is now also applied to road, river and stream buffers.

During its assessment of the Draft Management Plans, the EPA sought advice and clarification from the Executive Director CALM on a number of issues. This correspondence, and replies on the issues, is included in this report as Appendix A and B. There has been positive and expert interaction with staff of CALM. This interaction also included several briefings of the EPA by the Executive Director. This interaction has been of considerable assistance to the EPA and is appreciated.

4. CONSERVATION RESERVE PROPOSALS IN THE FOREST REGION MANAGEMENT PLANS

4.1 MAJOR ADVANCES

The EPA has examined all of the land classification proposals in the Draft and Final Management Plans. It has been particularly concerned to ensure that the proposals in the Management Plans are consistent with the recommendations of the EPA made in its reports in 1976, 1982 and 1983.

A table which identified all of the EPA recommendations was prepared and compared with the proposals in the General Working Plan No 87 and Management Plans and is presented in this report as Table 1. The drafts of this table have been made available to CALM, and a similar comparison is presented as Appendix 3 in each of the Final Southern, Central and Northern Forest Region Management Plans.

As can be seen from this table, there is considerable agreement between the intent of the EPA recommendations and the proposals in the Final Management Plans. It should be noted that of the Scientific Study MPA's, the EPA had previously made recommendations on Lindsay and Iffley MPA's and these are discussed in Section 4.2.2.

In the Final Management Plans, the term Conservation Park has been applied to almost all of those areas within State forest recommended by the EPA to be 'forest parks'. This change is supported by the EPA. Conservation Parks are to be managed as national parks and have the security of tenure and purpose of A class reserves. Commercial timber production activities within those located in forest areas would be excluded.
(Appendix A)

The Final Management Plans provide for:

- (a) the setting aside of areas recognised as having high conservation value within a land tenure system that will provide security of purpose;
- (b) the establishment of a soundly based system of land tenure categories;
- (c) implementation of most of the EPA's recommendations made in its 1976, 1982 and 1983 reports;

Table 1. Recommendations made by EPA and proposals in the Forest Region Management Plans.

EPA RECOMMENDATIONS		FORESTS DEPT GWP No 87	CALM FOREST REGIONS MGT PLANS	
<u>SYSTEM 1</u>				
1.1.2	Ludlow Tuart Forest	SF	FFL	NP/SF
1.3	Whicher Range			
	- Whicher	FP	FFL	NR
	- Bovell	FP	FFL	NR
1.4	Leeuwin-Naturaliste Ridge			
	- Leeuwin-Naturaliste	NP		NP
	- Boranup (SF 45)	FP	FFL	NP
1.5	Donnybrook Sunklands			
	- Milyeannup	FP	FFL	NR
	- Rapids	FP	RPA	CP
	- Chester	FP	FFL	NR
-	Mowen MPA		FFL	CP(C)
-	Blackwood River MPA		RPA	CP(C)
<u>SYSTEM 2</u>				
2.1	Scott National Park	NP		NP
2.2	Pemberton National Park	NP		NP
2.3	South Coast National Park	NP		NP
2.4	Reservation of Karri Forest			
	- Dickson	FP	FFL	NR
	- Iffley	FP	SS	SF
	- One Tree Bridge	FP	RPA	CP
	- Brockman	FP	RPA	NP
	- Dombakup	FP	FFL	CP
	- Lindsay	FP	SS	SF
	- Johnston & O'Donnell	FP	FFL	NP
	- Soho	FP	FFL	NP
	- Beavis	FP+	SF	SF
	- Giblett	FP+	SF	SF
	- Strickland	FP+	FFL	NR
	- Hawke	FP	FFL	NP
	- Treen	FP	FFL	NP
	- Boorara	FP	FFL	CP
	- Curtin	FP	FFL	NP
	- Wattle	FP	FFL	NP
	- Lower Shannon	FP	FFL	NP
	- Mitchell & Crossing	FP	FFL	NP
	- Muirillup Rock	FP	RPA	CP
2.5	Tone-Perup River Area	FP	FFL	NR
2.6	Lake Muir	CFF		NR
2.12	Wetlands			
	- Gingilup Swamp	CFF		NR
2.13	Islands	CFF		NR
2.15	Kent & Denmark River Catchments	SF	VCL/SF	SF/NP

Table 1. Recommendations made by EPA and proposals in the Forest Region Management Plans (contd).

EPA RECOMMENDATIONS		FORESTS DEPT GWP No 87	CALM FOREST REGIONS MGT PLANS
-	Mt Frankland MPA	RPA	NP
-	Warrup MPA	SS	SF
-	Lewin MPA	SS	SF
-	Paget MPA	FFL	NR
-	Keystone-Swarbrick MPA	SS	SF
-	Sutton MPA	SS	SF
<u>SYSTEM 6</u>			
C2	Moore River National Park	NP/ CFF	NR
C6	Reserve 9676, Yurine Swamp	CFF	NR
C9	Gingin & Boonanarring Brooks	CFF	NR
C10	Lake Wannamal	CFF	NR
C12	Caraban MPA	FFL	FFL
C13	Wabbling MPA	FFL	FFL
C14	Reserves 20366 & 25431, Lake Muckenburra	CFF	NR
C15	Reserves 24257 & 26756, Gingin	CFF	NR
C17	Lake Chandala	CFF	NR
C18	Reserve 42, Burroloo Well	CFF	NR
C19	Needonga & Chittering Lakes	CFF	NR
C20	Reserve 32807, Mt Byroomanning	/RP CFF	NR
C21	Julimar MPA	RP	FFL
C23	Reserve 22096, Culham	CFF	NR
C26	Reserve 4070, Bullsbrook	CFF	NR
C27	Beelaring & Goonaring Springs	CFF	NR
C28	Reserves, Wundowie	CFF	NR
C29	Reserves, Clackline	CFF	NR
C30	Reserve 30363, Inkpen Rd	CFF	NR
C32	Dale MPA	FFL	FFL
C33	Russell MPA	RP	FFL
C34	Gunapin MPA	FFL	FFL
C35	Sullivan MPA	FFL	FFL
C36	Eagle Hill MPA	FFL	FFL
C37	Brookton & Albany Highway	RP	SF
C38	Cooke MPA	RP	FFL
C39	Windsor MPA	RP	FFL
C40	Boyagarring MPA	FFL	FFL
C41	Lupton MPA	FLL	FFL
C42	Duncan MPA	FFL	FFL
C43	Gyngoorda MPA	FFL	FFL
C44	Wandering MPA	FFL	FFL
C47	Reserve 14629, North Dandalup	CFF /R	NR

Table 1. Recommendations made by EPA and proposals in the Forest Region Management Plans (contd).

EPA RECOMMENDATIONS		FORESTS DEPT GWP No 87	CALM FOREST REGIONS MGT PLANS
C48	Reserve 19413, North Dandalup	CFF /R	NR
C49	Reserve 21038, North Dandalup	CFF /W	NR
C50	Peel Inlet	CFF /AR	NR
C51	Harvey Estuary	CFF /AR	NR
C52	Lakes McLarty & Mealup	CFF	NR
C53	Coolup Reserves	CFF	--
C54	Yalgorup National Park	RP	NP
C55	Clifton MPA	RP	FFL
C56	McLarty MPA	RP	FFL
C57	Myalup MPA	FFL	FFL
C59	Reserve 22199, Wagerup	CFF	NR
C60	Reserves 12049 & 12632, Harvey	CFF /W	NR
C61	Reserve 24472, Lake Preston	CFF	NR
C62	Reserve 2547, Harvey	CFF	NR
C63	Myalup Swamp & Mialla Lagoon	protect	CP
C64	Reserve 2517, Harvey	CFF	--
C65	Benger Swamp	CFF	NR
C72	Teesdale MPA	FFL	CP
C73	Murray Valley MPA	RPA	5g
C74	Plavins MPA	RP	FFL
C75	Samson MPA	RP	FFL
C76	Federal MPA	RP	FFL
C77	Bell MPA	RP	FFL
C80	Reserves, Harvey	CFF	NR
C82	Surface MPA	RP	FFL
C83	Nalyerin MPA	RP	FFL
C84	Trees MPA	RP	FFL
C85	Stene MPA	RP	FFL
C86	Dardanup MPA	RP	FFL
C87	Lennard MPA	RP	FFL
C88	Westralia MPA	RP	FFL
C89	Donnybrook Reserves	CFF	--
C90	Preston MPA	FFL	FFL
C91	Noggerup MPA	FFL	FFL
C92	Goonac MPA	FFL	FFL
C93	Muja MPA	FFL	FFL
C94	Bennelaking MPA	FFL	FFL
C95	Mullalyup MPA	RP	FFL
C96	Reserve 29121, Wilga	CFF	NR
C97	St John Brook MPA	RP	FFL
C98	Reserves 25446 & 34 Blackwood River	RP	NR
C99	Greenbushes MPA	RP	FFL
C100	Dalgarup MPA	RP	FFL
C101	Nollajup MPA	FFL	FFL

Table 1. Recommendations made by EPA and proposals in the Forest Region Management Plans (contd).

EPA RECOMMENDATIONS		FORESTS DEPT GWP No 87	CALM FOREST REGIONS MGT PLANS
M3	Yanchep National Park	RP	NP
M4	Ridges MPA	RP	NP
M5	Yeal Nature Reserve	CFF	NR
M6	Neerabup National Park	RP	CP
M8	Wanneroo Wetlands	RP	NR
M9	Melaleuca MPA	FFL	NR
M14	Reserve 1654, Bullsbrook	CFF	NR
M16	Avon Valley National Park	NP/ CFF	NP
M18	Walyunga National Park	RP	NP
M21	John Forrest National Park	RP	NP
M25	Lake Leschenaultia	RP	CP
M27	Reserves, Lake Manaring	CFF	NR
M28	Reserve 14278, Wooroloo	CFF	NR
M29	Greenmount National Park	RP	CP
M34	Helena Valley		
	- Goosebery Hill National Park	RP	CP
	- Kalamunda National Park	RP	CP
	- State Forest 50 & 54	FFL /W	CP
	- Burkinshaw Rd (NP)	RP	CP
M80	Darling Escarpment		
	- Lesmurdie Falls National Park	RP	CP
M81	Reserves 19662 & 32728, Karragullen	CFF	--
M84	Gooralong MPA	RP	CP
M85	Serpentine National Park	RP	CP
M86	Karnet MPA	RP	CP
M87	Serpentine MPA	RP	CP
M108	Goegrup Lakes	CFF	NR
-	Yarrigil MPA		SS
-	Marrinup MPA		SS
-	Randells MPA		FFL
-	Saddleback MPA		SS
-	Flynn MPA		SS
-	Lang MPA		SS
-	Mundlimup MPA		SS
-	Chandler MPA		SS
-	Amphion MPA		SS
-	Leach MPA		SS
-	Davis MPA		SS
-	Brunswick MPA		SS

Table 1. Recommendations made by EPA and proposals in the Forest Region Management Plans (contd).

LEGEND

AR	Aquatic Reserve
CCF	Conservation for Flora & Fauna
CP	Conservation Park
FFL	Flora, Fauna and Landscape Priority Areas
FP	Forest Park/Reserve
MPA	Management Priority Area
NP	National Park
NR	Nature Reserve
R	Recreation
RP	Regional Park
RPA	Recreation Priority Areas
SF	State Forest
SS	Scientific Study & Education Priority Areas
TR	Timber Reserve
VCL	Vacant Crown Land
W	Water
+	In its 1982 Report on Karri Forest Conservation, the EPA amended its earlier recommendation in regard to these areas, to FFL MPA with management consistent with Beedelup National Park
--	not considered
(C)	Core Area of MPA only

- (d) provision for areas not subject to EPA recommendations but which have a high conservation value to be afforded adequate protection through assignment to a conservation related tenure category;
- (e) creation of a system of conservation reserves that is representative of the range of ecosystems found in the three forest regions and provides for protection of sites of special local, regional, national and international significance.;
- (f) the statement of management goals and strategies to be adopted during the term of the Management Plans, and
- (g) the clear statement that multiple use management of the State forest will aim to maximise wildlife values, consistent with the primary land purpose.

A major initiative in the management plans is the creation of a comprehensive system of conservation reserves. New nomenclature and explicit management strategies for each of these classifications are proposed. These initiatives implement the earlier EPA recommendations and are endorsed by the EPA.

Almost all of the recommendations made to Government by the EPA in Systems 1, 2, 6 and those of System 4 within the three forest regions are subject to tenure and management proposals in the management plans that are consistent with those of the EPA. Where there are differences, the EPA has made specific recommendations in this report to address them.

RECOMMENDATION 1

The Final Management Plans for the Northern, Central and Southern Forest Regions include proposals for setting aside and managing locations of high conservation value. They are a major step forward toward the implementation of the EPA's conservation reserve recommendations for the State's Forest Regions. The EPA agrees with and supports those proposals in the Final Management Plans. The EPA recommends that the Management Plans be implemented.

4.2 MATTERS OUTSTANDING

There is substantial agreement between the earlier recommendations of the EPA and proposals in the Final Management Plans. During our assessment of the Management Plans, some issues requiring further consideration were discussed with CALM. Proposals for resolution have been put forward and the EPA has commented on these below.

4.2.1 BEAVIS AND GIBLETT BLOCKS

In its 1976 recommendations to Government, the EPA indicated that Beavis (1755 ha) and Giblett (2849 ha) forest blocks should become 'forest parks' following cutting and regeneration. The value of these two blocks was identified by the Special Review Committee (DCE, 1976) as being:

- . Beavis - virgin Karri representing the western plant associations of the Karri forest; and
- . Giblett - ranges from virgin Karri, through Marri mixtures to Jarrah. The Jarrah forests were selectively cut a few decades ago. This proposal forms a northern extension of Beedelup National Park.

Following the review of conservation and management of the Karri forest by Dr P Attiwill in 1982, the EPA made specific recommendations on Beavis, Giblett and Strickland Management Priority Areas in its Report on Conservation in the Karri Forest (EPA, 1982). These recommendations were:

- "5.1 that Beavis and Giblett Management Priority Areas be reclassified immediately as MPAs for Conservation of Flora, Fauna, and Landscape;
- 5.2 that Beavis, Giblett and Strickland MPAs be managed by the Forests Department to complement the Beedelup National Park, and
- 5.3 that at some future time, Beavis, Giblett and Strickland MPAs be reviewed in the light of the use of the Beedelup National Park.

In making these recommendations the EPA is aware that they differ from its 1976 recommendations in that previously, the Authority agreed that Beavis and Giblett MPAs should be cut over and regenerated before being added to the Forest Park System. However it has now accepted Dr Attiwill's conclusions and, particularly in the knowledge that this change will not markedly affect the karri cut, believes Beavis and Giblett should be added immediately to the reserved areas." (EPA, p 2)

The Management Plan for the Southern Forest Region proposes that Beavis and Giblett Blocks should remain within State Forest. It is intended that Beavis and Giblett Blocks be potentially available for commercial exploitation. As indicated in Appendix A, the Executive Director of CALM has undertaken that Beavis and Giblett Blocks will not be logged for 15 years, thereby preserving the option for consideration of their reservation as intact forest at a later stage. Their management will be as part of a regional fire buffer during that period.

In order to appreciate the implications of this proposal in the Management Plans, the EPA sought information from CALM on the representation elsewhere within the proposed conservation system of the ecological values within Beavis-Giblett Block. This information, which is included in Appendix B indicates that the forest types and fauna found within Beavis-Giblett Block is represented elsewhere within the proposed conservation reserve system in the Southern Forest region, especially in Strickland Block (proposed nature reserve) and Beedelup National Park. In addition, Strickland Block contains a more diverse range of vegetation communities and associations than Beavis-Giblett Block and has virgin Karri forest.

The EPA considers that, with appropriate management, it is possible for the ecological values of Beavis and Giblett Blocks to be protected without being immediately reserved for conservation purposes. It is understood from CALM that their management as fire buffers may require two controlled burns during the currency of the Management Plan.

The areas will not be logged for at least 15 years, and the Forest Region Management Plans will be reviewed in a maximum of 10 years. The status of Beavis-Giblett Block should be reviewed then.

RECOMMENDATION 2

The EPA, noting that:

- (1) Beavis-Giblett Block is proposed to remain as State Forest;

- (2) the Block will be managed as a strategic fire buffer;
- (3) the purpose and tenure of the Block will be reviewed at the expiry of the term of the Southern Forest Region Management Plan, within 10 years;
- (4) the Executive Director CALM has undertaken that the Block will not be logged for 15 years, thereby preserving the option for its reservation as intact forest at some time in the future,

recommends that Beavis-Giblett Block be managed accordingly, subject to the undertakings referred to above.

4.2.2 OTHER MANAGEMENT PRIORITY AREAS

Lindsay and Iffley MPAs

CALM has indicated to the EPA that, while all of the EPA's recommendations for the reservation of conservation MPAs would be implemented in the Management Plans, Scientific Study Management Priority Areas would remain within State forest (Appendix A).

Two Management Priority Areas within the Southern Forest Region that were recommended by the EPA in 1976 to be "Forest Park" but are proposed to remain within State forest:

- . Lindsay (Scientific Study MPA - study area for Phytophthora cinnamomi)
- . Iffley (Scientific Study MPA - catchment protection)

They were identified in the Forests Department General Working Plan No. 86 (1977) as MPAs in which some proportion was likely to be managed as a 'forest park'. The EPA considered that 'forest park' could include areas used for silvicultural study and research. This is the category within which Lindsay and Iffley MPAs were included.

It appears to the EPA that it would be appropriate for Lindsay and Iffley MPAs to be included within State forest. Clearly, the catchment protection function of Lindsay needs to be reflected in its zoning.

Lennard, Mullalyup, Preston, Noggerup, Dalgapur, Mowen and Dardanup MPA's

In relation to other MPAs, the Final Management Plans propose that 7 of the 64 former Flora, Fauna, and Landscape Management Priority Areas and one Recreation Management Priority Area would have their previous buffer areas remain within State forest while their core areas would be reserved. The seven Flora, Fauna, and Landscape MPAs (Lennard, Mullalyup, Preston, Noggerup, Dalgapur, Mowen and Dardanup) are all located within the Central Forest Region. The Recreation MPA is Blackwood. The EPA has been advised that management of the buffer areas as State forest would be sympathetic to the core area reservation (Appendix A).

While the core of Dalgapur MPA is proposed to be classified as nature reserve in the Final Management Plan, the others would become Conservation Parks.

Six of the seven Flora, Fauna, and Landscape MPAs were subject to recommendations by the EPA in its System 6 Report. Mowen and Blackwood MPAs are within System 1 but were not considered in 1976. In its report to the

EPA the Special Review Committee (DCE, 1976) described these two MPA's in the following terms:

- . Mowen MPA - large basin with several types of swamp vegetation ranging from sedgelands through shrublands to low closed forest of Melaleuca raphiophylla (3000 ha), and
- . Blackwood MPA - strip of forest 1.5-3 km wide bordering the Blackwood River between Nannup and Warner Glen (16200 ha).

Five of the seven Flora, Fauna, and Landscape MPAs, Lennard, Mullalyup, Preston, Noggerup and Dalgarup, are currently being reviewed by the Reserves Review Committee, which will then present its report to the EPA.

The EPA is of the view that reservation of the core of each of the Flora, Fauna, and Landscape MPAs is essential to protect their recognised conservation values. Retention of their buffers within State forest need not compromise the core area values provided management of the adjoining areas is consistent and sympathetic with those values. The concept of multiple use adopted by CALM in its State forest management could permit this.

RECOMMENDATION 3

The EPA recommends that the area management plans that will be prepared for those proposed Nature Reserve and Conservation Parks related to the existing Dalgarup, Lennard, Mullalyup, Preston, Noggerup, Mowen and Dardanup MPAs should include detailed management proposals for those portions of the MPAs which have the capacity for direct interaction with the reserved area and will remain within State forest, to ensure protection of the ecological values within the Nature Reserve and Conservation Parks.

Blackwood MPA

In relation to the Blackwood River MPA, the EPA considers that continued recognition of the conservation and recreation values of the Blackwood River valley is required. The river and its margin are of regional significance, with high recreational appeal and opportunities, extensive riparian vegetation and it provides an important corridor and habitat for aquatic fauna.

The Central Forest Region Management Plan proposes that the former Recreation MPA, which was 16 200 ha and subject to logging, be replaced with a Conservation Park of 3 200 ha. This Conservation Park would be protected from logging and would be based on the viewshed from the Blackwood River.

RECOMMENDATION 4

The EPA, noting the reservation of the viewshed from Blackwood River within the Blackwood River MPA as a Conservation Park, recommends that the remainder of the existing MPA should be managed to ensure protection of the conservation, landscape and recreation values within the Conservation Park. The area management plan for the Conservation Park should include detailed management proposals for that portion of the MPA that will remain within State forest.

Perup and Dombakup MPA's and Giants Forest Block

The EPA sought clarification of the proposed future of these three State forest areas.

CALM advised (Appendix A) that in the Final Management Plans, Perup MPA would be proposed as a nature reserve, Dombakup MPA would become a Conservation Park and Giants Block would be incorporated within the Walpole-Nornalup National Park.

The EPA supports these proposals.

4.2.3 LUDLOW STATE FOREST

The EPA recommended in its 1976 report that:

- (1) the Ludlow State Forest be managed for multiple use with priority being given to recreation and conservation of the Tuart forest, and
- (2) the Conservator of Forests doing whatever is necessary to ensure that the existing pine plantations within the defined Tuart forest are progressively phased out and replaced by Tuart.

The Central Forest Region Management Plan proposes that portion of the Ludlow Forest be reserved as National Park.

Recently, the portion of Ludlow State Forest containing the Tuart forest was declared a National Park.

Mineral claims for heavy mineral sands cover portion of the Ludlow Forest. The claims holder has sought to transition them to mining leases under the Mining Act 1978. In view of the potential implications of mining in the forest on the Tuarts, the EPA has advised the claims holder that any development proposals would be subject to an Environmental Review and Management Programme.

4.2.4 ADDITIONAL PROPOSALS IN THE FINAL MANAGEMENT PLANS

In addition to proposals mentioned earlier in this Section, the Final Management Plans contain new proposals for conservation reserves which have been included since publication of the Draft Management Plans. These include:

- . portion of State Forest 65 being added to Yanchep National Park;
- . addition of part of State Forest 65 to the Proposed Caraban Nature Reserve;
- . expansion of the proposed Wandoo Conservation Park;
- . creation of Ellis Creek Conservation Park;
- . creation of Golden Valley reserve;
- . extension of the proposed Dickson Nature Reserve;
- . creation of Donnelly Valley Nature Reserve for blackbutt protection;
- . expansion of the D'Entrecasteaux National Park;
- . future declaration of Mitchell River National Park;
- . creation of part of the Kemerton location as Conservation Park, and
- . Boranup Forest Block to become national park.

Some areas have also seen their proposed purpose changed from conservation related classifications. These are at Wournbelup, which was to have been Nature Reserve in the Draft Central Forest Region Management Plan and is

now proposed to be State forest, while Swarbrick and Keystone Forest Blocks were proposed to be Forest Park/Reserve but would now remain within State Forest in the Southern Forest Region Management Plan. The EPA notes that these areas have not been subject to previous EPA recommendations.

5. ROAD, RIVER AND STREAM ZONES

As part of the commitments to environmental protection and management in relation to the development of a export woodchip operation in the Southern Forest Region, the Forests Department proposed that a series of road, river and stream buffer reserves would be established in State forest within the woodchip licence area (Forests Department, 1973).

The Marri Wood Chip Project Environmental Impact Statement (Forests Department, 1973) indicated that the retention of cover strips of undisturbed vegetation along streams would be used to reduce the effect of forest operations on erosion. In addition, strips of uncut forest along rivers, streams and gullies would be "reserved from cutting" (Forests Department, p 23), to protect water quality and terrestrial and aquatic fauna habitat. These reserves and others established around rocky outcrops, swamps and lakes would be linked, if possible, "to form a continuous network of uncut forest throughout the entire area." (Forests Department, p23)

The 1973 EIS suggested that at least 2 km of stream reserve, 100 m either side of the river, stream or gully, should be left for every 500 ha of cut forest. Further, the EIS indicated that there should be no more than three to five kilometres of cut over forest in between the reserve corridors. Major highways and tourist routes would also have uncut reserves of a minimum of 200 m on each side along them. (Forests Department, p24-25)

Road, river, stream and other reserved portions of State forest would be protected from post cutting regeneration burns in adjoining areas.

The EPA recommended in 1976 that the Forests Department's Road Reserves (59 747 ha) and Stream Reserves (42 465 ha) should be managed as for Forest Parks, with priority given to the preservation of aesthetic values and preservation of the water resource respectively (EPA, 1976).

The Forests Department approached the EPA in 1984 proposing a series of cutting trials designed to assess the impact of reductions in width of road, river and stream buffers (reserves). In its Notice of Intent, the Forests Department noted that road, river and stream buffers presently remain uncut during logging operations. The proposal was for selected buffers adjacent to existing coupes to be reduced by about half their width, depending on factors such as soils, slope, line of sight and aesthetics. These areas were identified in the Notice of Intent as:

. Dingup 4	Road reserve
. Dombakup 13	Road reserve
. Weld 6	Road reserve
. Brockman 9	Road reserve
. Boorara 10	Road reserve
. Lockhart 11	Road reserve
. Lockhart 11	River reserve
. Lockhart 2	River reserve
. Mattaband 12	River reserve
. Poole 10	Stream reserve
. Crowea 4	Stream reserve
. Sutton 4.8.10	Stream reserve

The EPA indicated agreement to these trials but also pointed to the need to critically examine the potential effects of implementing a programme of road, river and stream reserve reduction throughout the remainder of the Karri forest.

In the Management Plan for the Southern Forest Region, it is proposed that a review of the road, river and stream zones will be undertaken during the first period of the Management Plan, with a view to improving their efficiency and providing amenity, wildlife habitat and stream protection.

This review will incorporate the results of research on logging in trial areas of these zones and more recent biological research of the contribution of these zones to habitat maintenance of bird species.

The Management Plan undertakes to make no changes to the existing road, river and stream zone system until the new proposals are evaluated and approved by the EPA. Further, the proposed new system would not reduce the total area of State forest allocated to road, river and stream zones.

The Southern Forest Region Management Plan also points out that the proposed zones would not be subject to clearfelling but would continue to be subject to selective cutting, as has been practised since the mid-1970's.

The EPA has understood from advice from the Conservator of Forests, contained in the Notice of Intent on trial logging and the 1973 EIS, that no logging had been practised within the road, river and stream zones, apart from those which were subject to the 1984 trials.

Any silvicultural activities within road, river and stream zones should be subject to review by the EPA at the same time as the review of the existing zone system is assessed by the EPA.

The EPA considers that regardless of past practice, the road, river and stream zones should not be logged prior to the EPA reporting to Government following assessment of the review :

RECOMMENDATION 5

The EPA, noting that:

- (1) historically road, river and stream zones have been free from commercial logging,
- (2) CALM is now preparing a review of these zones, including an analysis of results of research on logging in trial areas,

recommends that the existing area and purpose of the system of road, river and stream zones in the Southern Forest Region should not be altered until the proposed review by CALM has been completed and the EPA has reported on them. This review should include consideration of silvicultural practices within the zones.

6. SHANNON RIVER BASIN CONSERVATION

The State Parliament has recently passed legislation to declare the Shannon River Basin a National Park.

The issue of how the recognised conservation value of the Shannon River Basin can be protected and managed has been the subject of lengthy debate and detailed consideration since the early 1970's. In that time, proposals have been prepared by various conservation organisations as well as the land manager, the former Forests Department and subsequently the Department of Conservation and Land Management.

The Environmental Protection Authority has been also involved, in reviewing proposals by its Conservation Through Reserves Committee and the Forests Department and reporting with recommendations to the State Government on conservation of the Shannon River Basin.

In view of the previous recommendations that the Environmental Protection Authority has made in relation to the Shannon River Basin (see Section 2), and proposals by the Government and the Department of Conservation and Land Management to declare the Shannon Basin as a National Park, the Authority considered it timely to reconsider its earlier recommendations.

As part of this task, the Authority reviewed the extent of damage to the forest within the central Shannon River Basin.

6.1 PROPOSALS FOR CONSERVATION OF THE SHANNON RIVER BASIN

The main parts of the lengthy discussion that has taken place on conservation in the Shannon River Basin have been whether the whole (rather than part) of the Basin should be reserved for conservation purposes without further review and what is the most appropriate form of management that should be applied to the forest in the Basin, especially the central portion.

As outlined earlier in this report, the EPA has considered those two issues at length during its assessment of the Manjimup woodchip proposal (1975), the System 2 recommendations (1976) and again in 1982.

In 1976 and 1982, the EPA made comments and recommendations concerning the conservation value and status of the Shannon, particularly its central part. The EPA was of the view that the environmental values within the Karri forest could best be represented in a reserve system that covered the range of Karri habitats.

In 1983, the State Government made a commitment to the declaration of the whole of the Shannon River Basin as National Park. Since then, two draft management plans prepared by the Department of Conservation and Land Management, as the agency responsible for management of State forest and national parks, have presented management proposals for the Basin.

The whole of the Shannon River Basin was included in the Shannon Park and D'Entrecasteaux National Park Draft Management Plan, which was released in April 1986 (CALM, 1986).

This Draft Management Plan indicated that the area of State forest known as Shannon Forest, would remain vested in the Lands and Forest Commission but would be managed for recreation and conservation as though it were a National Park. The Shannon Park comprises all of the State forest and some vacant Crown land that is within the catchment of the Shannon River, but outside the D'Entrecasteaux National Park.

The Draft Southern Forest Region Management Plan (CALM, 1987c) proposed that the whole of the Shannon River Basin would become reserved for National

Park, and vested in the National Parks and Nature Conservation Authority. In the related Supporting Papers, Table 2 shows that forest production activities are not compatible with the objectives for land reserved for national park. (CALM 1987d)

Earlier this year a Committee of Inquiry was appointed by the Minister for Conservation and Land Management to consider the scientific merit of the reservation of the Shannon River Basin as a National Park and to consider the impact of such a reservation on timber supplies and on other reserve proposals. This Committee reported in favour of a National Park and subsequently, this has been confirmed by Parliament.

6.2 RESERVATION OF THE SHANNON RIVER BASIN

A key determinant of the EPA's historical position has been the extent of damaged forest within the central Shannon. As part of this assessment of the Management Plans, the degree of damage of the central Shannon has been reviewed by the EPA. Also reflected in the EPA's previous considerations of the Shannon has been advice on the implications on the region of the consequent withdrawal of the commercial timber resource located in the catchment of the Shannon.

In 1976, the Special Review Committee indicated that approximately 14 per cent (6000 ha) of the Shannon had been subject to forest operations and that much of this had been previously affected by fire. Appendix III of the Committee's report stated that:

"Much of the Karri forest in the central half of the Shannon basin has been severely fire damaged." (DCE, 1976)

This view was reflected in the EPA's 1976 report. As indicated in Section 2.2, the impression of the EPA in 1976 was that of extensive and severe damage.

The present level of knowledge of the type and condition of the forest is more complete now and better documented than previously. The Committee of Inquiry on the Shannon River Basin concluded recently that timber cutting and commercial thinning are not essential to ensure survival and future development to maturity of fire damaged stands in an area set aside for conservation.

The Shannon Park and D'Entrecasteaux National Park Draft Management Plan provided information on the extent and frequency of fires that had occurred in the central Shannon. Map 11 shows that most of the Shannon basin has been subject to at least two fires since 1940 and virtually none has escaped being burnt. This information, however, provides no indication of the effect that these fires have had on the forest.

The EPA has obtained advice on the extent to which these fires have damaged the forest. The assessment of damage is somewhat dependent on the criteria chosen. Our advice now is that only about 5 per cent of the Karri stands in the central Shannon River Basin remain severely effected by fires. This represents about 3 per cent of the whole of the Shannon River Basin.

The report of the Committee of Inquiry has also provided the EPA with specific and more up-to-date information on the regional significance of the Shannon River catchment and the implications of its reservation. (Committee of Inquiry, 1987)

The Committee concluded that the proposal to reserve the central portion of the Shannon has scientific merit. Its reservation would complete the reservation of the total river basin and permit management to minimise disturbances to its ecosystem and, in particular, Broke Inlet which is one of the few South Coast inlets in a largely pristine condition. The Committee was of the view that reservation of the Shannon would not derogate from the proposed reserve system recommended by the EPA. Through improved milling technology and log use and the development of softwood timber resources in the region, the Committee further concluded that reservation of the Shannon would not have any long term impact on the long term viability of the timber industry. In terms of the fire damaged areas the Committee concluded that logging is not necessary for regeneration if the purpose of the areas is conservation.

Taking into account these factors and that the fires damaged portion of the central Shannon is relatively small, the EPA is of the opinion that its previous position on regenerative logging of the central Shannon River Basin is no longer necessary.

The EPA acknowledges that the reservation of the Shannon River Basin has considerable merit for conservation.

7. CONSERVATION IN STATE FOREST

Turning now to State Forest, which allows for timber production, the EPA reiterates that this forest area has conservation values which require protection and which contribute to the protection of the parks and reserves within it. This is an issue highlighted in the Management Plans and the EPA welcomes the commitment in Appendix A that conservation/recreation and other values will be catered for equally with water production or timber production.

The EPA considers that the State Forest serves significant roles in providing habitat for a wide and important variety of species of flora and fauna. With the loss of similar habitat through the progressive clearing of alienated land, this significance has grown and will continue to do so. Protection and appropriate management of the habitat permits the conservation of those species, including their genetic diversity, and facilitates a greater understanding of them.

State Forest also provides resources which are used to improve lifestyles, provides essential life support systems through water and air quality maintenance, and provides important aesthetic and recreational opportunities.

In assessing the environmental implications of major projects within the State forest, the EPA has seen the need for the State to undertake research which can verify and quantify the nature of perceived impacts. As a consequence of the EPA's evaluation of the woodchip industry and the bauxite mining industry, two research initiatives were established. The first related to water quality implications related to forestry operations within the Woodchip Licence Area. The research was conducted under the auspices of a Steering Committee (known as the Kelsall Committee), which had as its terms of reference to monitor the quality (i.e. salinity and turbidity) of the water resources, initiate research to identify salt sensitive areas, and provide the Conservator of Forests with technical data on which to base forest management (DCE, 1980).

Water quality protection was also a major concern in relation to the bauxite mining in the Darling Range. A Steering Committee (known as the Hunt Committee) was established to investigate this concern.

The functions of these two Committees have been amalgamated into the Steering Committee for Research on Land Use and Water Supply, which has produced regular reviews of the impact of bauxite mining and woodchipping on water quality and related land management.

This research and monitoring mechanism has served very well in identifying specific environmental concerns associated with relationships between water quality and specific land uses, confirming or otherwise earlier perceived problems associated with specific development proposals, and proposing future courses of action. A key element of this has been the ability to use the research resources of the State in a most efficient manner.

Recognising that the State Forest retains conservation values that need protection, that CALM has a commitment to protect these values, and that production forestry causes environmental impacts that might affect these values, CALM presently undertakes monitoring and research of these impacts. It is appropriate that the monitoring and reporting of these environmental studies and processes continue to be made available public information on a regular basis.

RECOMMENDATION 6

The EPA noting that:

- (1) all State Forest includes significant conservation values,
- (2) the need for on-going management of these values in production State Forest has been recognised by CALM,
- (3) monitoring and research of environmental impacts is part of CALM's activities,
- (4) CALM has a commitment to providing public information,

recommends that CALM make public, on a regular basis, the monitoring and reporting of environmental impacts of management of State Forest.

8. CONCLUSION

The EPA has assessed proposals contained in the Northern, Central and Southern Forest Region Management Plans and related statutory documents. It has also consulted with CALM on specific proposals, has received advice from CALM on revisions to the Plans, received submissions on the proposals and has sought advice on the conservation status of the central Shannon River Basin.

The EPA considers that the Management Plans provide a sound management framework and include specific conservation related reservation proposals that should be supported.

The Management Plans propose the implementation of almost all of the EPA's previous recommendations within the Northern, Central and Southern Forest Regions. Those few recommendations on which there were matters outstanding have been examined by the EPA in this report and specific comments and recommendations have been made.

For the effective management of a natural resource, there should be a balance between areas for conservation and areas for development. The EPA is of the opinion that an effective balance has been struck for the Forests of the South West of Western Australia.

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APPENDIX A



ENVIRONMENTAL PROTECTION AUTHORITY

1 MOUNT STREET, PERTH, WESTERN AUSTRALIA 6000

Telephone (09) 222 7000

Dr S Shea (Himself)
Executive Director
Department of Conservation and
Land Management

Your Ref:

Our Ref: 191/81

Enquiries:

CALM FOREST REGION MANAGEMENT PLANS

As you are aware, the Authority is currently considering the Draft Management Plans for the Northern, Central and Southern Forest Regions.

I believe that there would be mutual benefit if you were able to provide a briefing to the Authority in issues that relate to the Plans. The following issues have been raised during discussions on the plans, and the Authority would appreciate a briefing on them:

1. Attached is a table summarising EPA recommendations for the existing and proposed CALM estate and the classification proposed in the Draft Management Plans for that area. Could you explain why some areas were proposed to be a classification that was inconsistent with that recommended by the Authority.
2. An outline of the revised system of classification for the CALM estate, including proposals for Forest park/reserve.
3. An appreciation of the rationale used to assign locations to a particular classification, eg. National and State park, Nature Reserve, State Forest.
4. An indication of what has happened to the Scientific Study and Education Management Priority Areas.
5. How would the conservation values within State Forest be protected and managed, given the objective of multiple use management?
6. How will 'zones' within the classifications be determined, and how is it proposed to give security to these 'zones'?
7. Is it proposed or the intention of CALM to prepare Area Management Plans for land within the State forest classification?

2.

8. What is the distinction in management and operational terms between 'protection' and 'production' within State forest, particularly as they relate to water and timber?
9. What is the current programme and timetable for revision of the Draft Management Plans?

In view of your desire to complete the revision of the Draft Management Plans as early as possible, I believe that this briefing should take place at the Authority's next meeting, on Thursday 20 August.

The Authority looks forward to your discussions on these issues.



B. Carbon
CHAIRMAN

14 August 1987



ENVIRONMENTAL PROTECTION AUTHORITY

1 MOUNT STREET, PERTH, WESTERN AUSTRALIA 6000

Telephone (09) 222 7000

DEPARTMENT OF CONSERVATION AND
LAND MANAGEMENT

Your Ref:

Our Ref: 191/81

Enquiries:

FOREST REGION DRAFT MANAGEMENT PLANS

Further to my letter of 14 August and your briefing of the Authority, your advice on the following issues raised in the Northern, Central and Southern Forest Region Draft Management Plans would be appreciated.

1. Could you indicate the future classification/status of Perup MPA and Giants Forest Block. If logging is proposed, could the reasons for this be provided.
2. In the event that Beavis, Giblett, Dombakup, Iffley and Lindsay MPAs are not reserved for conservation purposes in the final Management Plans, could you advise which conservation areas in the Southern Forest Region will contain equivalent ecotypes and site characteristic representation. Specific details for the location, size and environmental representation of each of these areas should be provided.
3. At the briefing, you indicated that some areas currently proposed as Forest Parks would be subject to logging while others would not. Could you provide a list of those areas not included within State forest that would be available for logging.


B A Carbon
CHAIRMAN

11 September 1987

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

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Please address all correspondence to Executive Director, P.O. Box 104, COMO W.A. 6152

Your Ref:

Our Ref: SS:ps

Enquiries:

Phone:

Chairman
Environmental Protection Authority
BP House
1 Mount Street
PERTH WA 6000

ENVIRONMENTAL PROTECTION AUTHORITY
29 SEP 1987
File No. 191/81 Initials RS

CALM's FOREST REGIONAL MANAGEMENT PLANS

Prior to my briefing the EPA on the above, the Authority requested answers to a number of specific questions which resulted from their analysis of the forest management plans. Subsequent to my briefing of the EPA, they have submitted additional questions in a letter dated 11 September. The following answers the specific questions asked by the EPA in both letters. I have also attempted to canvass issues that were raised during the briefing.

1. Classification System

The draft forest management plans proposed a new system of classification for the CALM estate which included two new proposals -

- (i) the concept of forest park/reserve, and
- (ii) provision of "A" class security for zones in State forest, parks and reserves.

The forest park/reserve concept included the option for parts of areas within the forest to be zoned for a productive use in addition to conservation and recreation. Unfortunately, this proposal has been interpreted by some sections of the community as a backdoor method of permitting logging in the core areas of conservation management priority areas in the forest. Although the Department believes that the concept of having a zoning system which permits productive activities within some reserves is a valuable one, in view of the public response to the proposal, it is

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considered that the disbenefits of retaining this concept exceed the benefits. Consequently, a modification of the classification system that was outlined in the draft forest management plans is proposed. The system proposed is as follows:

- (i) National Parks - Areas of outstanding significance from either conservation, recreation or landscape potential will be reserved as national parks. The purpose of national parks will be such that they will permit people-use provided that it is compatible with the long term maintenance of the ecosystem.
- (ii) Nature Reserves - Areas reserved primarily for the purpose of retaining natural attributes of the ecosystem. People-use will be restricted eg scientific study.
- (iii) Conservation Park - Areas reserved for conservation and recreation but which do not have the outstanding attributes of national parks. Conservation parks will be managed in the same way as national parks.
- (iv) State Forest - Areas of forest managed for a multiplicity of uses including timber and water production.

Zoning

It is proposed to retain the concept that zoning for specific uses within any reserve may occur except that zoning for productive purposes will be excluded from national parks, nature reserves and conservation parks.

Rationale for the classification system

The above system is based on the concept that any system of land classification should be as simple as possible but should account for the different purposes for which land has been reserved. It was also considered that it was desirable to have a two-tiered park system so that as far as practical the term "national park" was reserved for areas of outstanding conservation and scenic significance. This approach has the advantage that areas of outstanding conservation significance are not devalued by being grouped with what are essentially urban fringe parks (eg Lesmurdie Falls). It would also be impossible to achieve a uniform system of classification of parks because of the objections of the mining and timber industry sector.

2. Differences between the EPA recommendations and current proposals for reservation in south west forests

I am confident that the current proposals for reservations encompass all of the recommendations of the EPA (see table 1) except for the specific areas which are explained below.

- (i) Beavis/Giblett Block - In the 1976 EPA Redbook, it was proposed that Beavis/Giblett be reserved following clearfelling and regeneration as a "forest park". Consequently, the Attiwill report recommended that Beavis/Giblett block be reserved as a "forest park". It is important to note that in the original definition of "forest park" logging activity was permitted. In the current forest plan proposals, Beavis/Giblett block will remain as part of State forest. However, the Department has undertaken that this block will not be logged for 15 years, thereby preserving the option for its reservation as intact forest at some time in the future.

While it is possible that the Government's commitment to the level of timber production will be able to be maintained on a sustainable basis without the inclusion of Beavis/Giblett block as a consequence of improvements in utilisation and silviculture, this has not been proven. Consequently, the quantity of timber which is contained in Beavis/Giblett blocks must be retained for potential use.

It is important to emphasise, however, that the Department's position is midway between the original EPA Redbook recommendation and Attiwill's recommendation. In other words, the option remains open to reserve Beavis/Giblett block in 15 years time if the Government of the day considers it necessary.

- (ii) Scientific and educational management priority areas - All scientific and educational MPAs in the current draft forest management plan proposals are maintained in State forest. This is compatible with the original purpose for which these areas were reserved. None of the uses of scientific MPAs precluded the utilisation of timber in the areas so designated. This applies specifically to Lindsay and Iffley blocks which were cited in the EPA's letter of 11 September.

Lindsay block is an area of forest whose prime purpose is catchment protection. The catchment from which this forest grows supplies water to the town of Manjimup. Its original reservation was for the purpose of hydrological reservation which is not prejudiced by its classification of State forest.

Iffley block similarly was an area which was identified for further scientific investigation of Phytophthora cinnamomi. Its classification of State forest does not prejudice this purpose.

It is important to emphasise that both blocks were not reserved for the purpose of ensuring reservation of an intact ecosystem representative of a specific forest type.

- (iii) As noted above, all of the EPA proposals for reservation of MPAs will be implemented if the proposals for the forest management plans are accepted by Government. One area of some confusion relates to the difference between buffer and core areas proposed under the Forests Department Working Plan. In the current proposals, 7 of the 64 former Flora, Fauna and Landscape MPAs have their buffer areas excluded from reservation. These are Lennard, Mullalyup, Preston, Noggerup, Dalgarp, Mowen, and Dardanup. Blackwood, a former Recreation MPA, will also have its buffer excluded from reservation.

In the draft management plans it was proposed to include the buffer areas of these MPAs as part of forest parks/reserves. These "buffer" areas would have been zoned to permit logging. This was not in conflict with the EPA's recommendations with respect to the buffer areas. In fact, as noted above the EPA's definition of a "forest park" was such that it did not preclude logging in the core areas of MPAs. However, for the reasons cited above, it is now proposed to remove the possibility of any logging activity in forest park/reserves (now conservation parks). Consequently, the buffer areas of these MPAs have been excluded from the reserve system. As noted below, however, management of these buffer areas will be such that they are sympathetic to the core areas that are set aside for reservation.

- (iv) In the letters to the Department, the EPA raised questions about three specific areas. They were the Perup, Giants and Dombakup blocks. In the new plans that are proposed, Perup block becomes a nature

reserve, Giants block will be included in the Walpole/Nornalup National Park and Dombakup will become a conservation park.

- (v) It is important to put the proposals that will be made in the final management plans in the context of the original EPA recommendations.

Of the 64 Flora, Fauna and Landscape MPAs (as listed in Appendix 3 of General Working Plan No 87) falling within the Northern, Central and Southern Forest Regions:

- . 13 will become national parks;
- . 14 will become nature reserves;
- . 37 will become conservation parks.

Of the seven Recreation MPA's (listed in Appendix 4 of the GWP No 87):

- . 2 will become national parks;
- . 5 will become conservation parks.

There will be some new proposals for reservation which were not included in the draft management plans:

- . Part of Caraban State Forest will be added to the Yanchep National Park (Ridges MPA was already proposed for addition to Yanchep in the draft management plans). Note: This is not Caraban MPA, which will become a nature reserve;
- . the proposed Wandoo Conservation Park in the Northern Forest Region, which incorporates several former Flora, Fauna and Landscape MPAs, will be extended by an additional 2,000 ha comprising vacant Crown land, and an adjoining nature reserve;
- . New areas in the Central Forest Region (proposed Ellis Creek Conservation Park and Golden Valley 5g reserve) will be included (approximately 200 ha);
- . the proposed Dickson Nature Reserve in the Southern Forest Region will be extended westwards to pick up the Scarp ecosystem and Barlee Brook (exact boundary not yet decided);
- . a new blackbutt nature reserve in the Donnelly Valley will be included (approximately 30 ha);

- . a further 2,600 ha will be proposed for addition to the D'Entrecasteaux National Park;
- . it is proposed to eventually link the Sheepwash and Mt Lindsay areas to create a major new national park in the Denmark region (total area approximately 27,000 ha).

3. Management of State Forest

There were a number of questions in the two letters from the EPA (and the matter was also raised during my briefing) concerning management practices in State forests.

One of the key recommendations of the EPA System 6 report was Recommendation 6 which said:

"It should be a clearly recognised and stated objective of management of the State forest as a whole to protect the conservation value of management priority areas defined for that purpose in approved working plans."

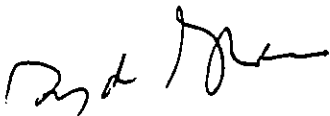
This concept is strongly endorsed by the Department. Unfortunately, as a consequence of our emphasis on the securing of tenure and purpose of MPAs as either national parks or reserves, we have not emphasised that State forest will be managed according to the principle of multiple use. In the final plans and supporting explanatory data, we intend to emphasise this point. Consequently, although we set a priority for water production or timber production over a considerable portion of State forest, in reality, conservation/recreation and other values are equally catered for.

In response to comments by Dr Peter Newman, which I thought were very constructive, the Department is preparing an Information Brochure which explains the concept of multiple use and also the silvicultural practices in the jarrah and karri forests which allow this objective to be achieved.

While the potential to zone State forest will be retained, it is not intended that the zoning be given a statutory base. If this were to be required, it would be impossible to manage the forest. In fact, zoning occurs

continually as we develop operation plans for the forests and this will continue. It may be possible over time to develop specific zones which could have a statutory base for certain areas of State forest. However, the priority is to develop detailed management plans for the conservation parks and national parks which are the key areas in the forest which have been excised because of their particular values.

I hope that this letter covers all the issues that have been raised by the EPA. I would be happy to elaborate on any particular point at the briefing on Thursday. While I do not want to rush the process, our timetable is such that we need to commence producing maps for the final plans as soon as possible. Consequently, I hope that this briefing will be the final briefing before we proceed in developing the final draft of the plans.



Syd Shea
EXECUTIVE DIRECTOR

22 September 1987

Copies to:

Dr Maurice Mulcahy
Dr Peter Newman
Dr John Bailey
Mr Peter Johnston

APPENDIX B

REPRESENTATION OF 'WESTERN KARRI' IN
THE PROPOSED RESERVE SYSTEM

In the new Regional Management Plans it is recommended that Beavis and Giblett Blocks be included in the area allocated to timber production, with the provision that no further cutting would take place for the next 15 years. The allocation of these two blocks to timber production raises the question of the adequacy of the representation of 'western karri' ecotypes in the proposed reserve system. The only substantial reserve in the Donnelly River Valley is Strickland Block, proposed Nature Reserve, adjacent to Beavis, and One Tree Bridge, proposed Conservation Park to the North. Beedelup National Park adjoins Giblett Block to the south.

No complete list of plant and vertebrate species exists specifically for Beavis and Giblett Blocks. However, there is adequate data to make a good assessment of the plant and animal communities in Beavis and Giblett Blocks and to make a judgement if they are in any way unique or whether they are well represented in the two reserved areas.

The best karri in the Donnelly occurs on red loam soils most often associated with fairly deeply dissected landscape. The dominant understorey species are *Bossiaea laidlawiana*, with *Allocasuarina decussata* and sometimes *Pimelia clavata* on the better sites. *Trymalium floribundum* common further south, occurs most often along

the drainage lines. Other common understorey species include *Orthozanthus multiflorus*, *Opercularia hispidula* and *Lasiopetalum floribundum*. On the poorer sites, usually grey gravelly podsolic sands, the karri is mixed with marri and understorey plants such as *Hovea eliptica* and *Agonis parviceps* become more dominant and *T. floribundum* and *A. decussata* disappear.

The major understorey species are common to similar sites throughout the middle Donnelly River area, as are many of the minor species. There is variation throughout the area as some difference in species composition and relative abundance occur from one place to the next.

Recently a site assessment survey of 229 plots has been completed in regrowth karri throughout the main karri range from Walpole in the south to the Donnelly River in the north (Inions pers. comm.*). Edaphic and climatic factors as well as vegetation and the growth of the regrowth karri was recorded.

Multivariate analysis of these data suggests that the karri may be classified into 13 site/vegetation types. Plots which were assessed in the general region of the middle reaches of the Donnelly Valley,

* Note: This work is currently being written up.

the area surrounding and including Beavis and Giblett Blocks all fall into 4 of the site/vegetation types. These include plots from the following forest blocks, Gray, Graphite, Lindsay, Solai, Channybearup, Court, and Carey and Beedelup National Park and One Tree Bridge. Unfortunately there were no plots in either Beavis, Strickland or Giblett Blocks. Inspection of Beavis, Giblett and Strickland Blocks and listing and comparison of the 50 most common understorey species suggests that the karri types within these blocks cover a similar range to those blocks which were covered in the survey.

Two points emerge from this work, which are of significance with regard to the present proposal;

- a. All the plots in this fairly extensive area of the Donnelly River basin and surrounds fall within 4 of the 13 site/vegetation categories.
- b. Plots from each of the blocks occur in several of the four site/vegetation categories.

The first point suggests that the vegetation communities in the Donnelly Valley are basically similar over a comparatively extensive area. The second point suggests that the variation within each of the forest blocks sampled is almost as great as the variation covered by all of the blocks which were sampled in the area.

How do we relate these data to the question of representation of karri types in reserves? Taking a purist view it is only possible to encompass the entire range of variations in karri forest plant communities by reserving the entire forest. A more realistic approach is to recognise that it is impossible to represent all the minor variations in species composition and relative abundance in reserves. The evidence would suggest that it is likely most of the species present in the middle Donnelly area are represented in each of the blocks mentioned above albeit not necessarily always in the exact same relative abundance and frequency. Thus if we accept this then Strickland Block, which is reserved, appears to contain the range of karri types present in Beavis and Giblett as well as many of the other blocks in the area. The karri in Strickland Block is very similar to that which occurs in the western portion of Beavis and along the Donnelly River further to the east. Some of the karri in Giblett Block contains elements of flora which become more common further to the south in the Beedelup National Park, for example, *Chorilaena quercifolia*.

The jarrah and jarrah/marri forest Beavis, Giblett and Strickland blocks is also very similar. Major understorey species which occur in all blocks include, *Acacia browniana*, *Hovea elliptica*, *Podocarpus drouynianus*, *Agonis parviceps*, *Crowea dentata*, *Boronia gracilipes*, *Bossiaea linophylla*, *Bossiaea ornata* and *Pimelea spectabilis*.

Like the karri there is variation in species composition from one place to the next. For example species such as *Acacia myrtifolia*, *Sphaerolobium medium* and *Boronia denticulata* tend to be more common in parts of Beavis Block whereas *Agonis flexuosa* and *Boronia molloyii* occur more frequently in Giblett Block.

Strickland Block is more variable, much of the jarrah is similar to the associations which occur in the other two blocks but in addition elements of the Donnybrook sunkland flora are evident in the western portion of the block which is on the edge of the southern extension of the Darling Scarp. *Dasypogon hookerii* and *Eriostemon spicatus* are obvious indicators of this change.

A characteristic feature of parts of the Donnelly Valley are upland quartz deposits which support a swamp type vegetation. Typical species include *Eucalyptus patens* (the swamp form), *Eucalyptus megacarpus*, *Kingia australis*, *Pultenea reticulata*, *Leucopogon concinnus*, *Agonis parviceps* and *Aotus ericoides*.

Patches of this association, varying from several hectares in extent up to 40 or 50 hectares or more, are a feature of this upland area of the middle Donnelly. This association does not appear to be common in Strickland Block. However, this is of no concern from the conservation viewpoint since these areas are included, wherever they occur, in the road, river and stream reserve system.

These sites are also not logged in Timber Production forest and are likely to be included in the revised system of buffers in those

zones. With regard to rare and endangered species, there are no known populations of rare plants in Beavis and Giblett Block.

Fauna

No fauna surveys have been done in Beavis, Giblett or Strickland Blocks. However, from our knowledge of the vertebrate fauna of the southern forest areas it is possible to draw up a fairly accurate list of species which would occur there. It is extremely unlikely that there are any species of rare and restricted fauna in Beavis or Giblett Blocks, and it is almost certain that no species occur in the area which are so restricted in distribution as to be affected by the proposed inclusion of Beavis and Giblett to the area available for wood production.

It is possible to make such definite statements on the fauna because vertebrate fauna of the southern forest areas is quite well known. Biological survey work over a period of 17 years has covered most of the major forest types south of the Blackwood River and we have a good understanding of fauna distribution and habitat preferences (Christensen et al. 1985). In addition we know of no species in the entire southern forest area localised enough to be restricted to one forest block or plant community. The most restricted species in the southern forests, the frog *Geocrinia lutea* which occurs to the

north of Walpole, is found over a geographic range almost as large as the entire middle section of the Donnelly Valley. Other restricted species such as the frog *Geocrinia rosea*, the small fish *Lepidogalaxias salamandroides* and the small snake *Elapognathus minor* occur in several site/vegetation types over an even more extensive area. It is therefore considered highly unlikely that any vertebrate specie would be restricted to either Beavis, or Giblett Block.

Conclusions

In conclusion it is considered that the vegetation and fauna communities in Beavis and Giblett Blocks are represented in Strickland Block which is proposed as a Nature Reserve and also in the One Tree Bridge Conservation Park as well as Road, River and Stream Reserves. In addition Beedelup National Park has many similarities with parts of Giblett Block in particular.

There are three further points which are considered relevant to this issue:

- a. Strickland Block contains a more diverse range of vegetation communities and association than is present in either Beavis and Giblett Blocks either singly or together.

- b. Evidence from many studies on the fauna and flora of the southern forests suggests that clearfelling and associated regeneration burns have only a temporary effect on the fauna and flora. There is no evidence of major permanent change or loss of species in the areas which have been cut and regenerated.
- c. Substantial areas of Beavis and Giblett have been cut and regenerated, both in karri and jarrah forest types. Although a large portion of the jarrah in Strickland has been cut over the karri is all virgin forest.