Summary and Extracts from

Working Plan No. 87 1982 Part I

General Working Plan for State Forests in Western Australia

FORESTS DEPARTMENT WESTERN AUSTRALIA
PRODUCTION
PROTECTION
RECREATION
CONSERVATION

FORESTS DEPARTMENT OF WESTERN AUSTRALIA

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in Western Australia

B.J. BEGGS
Conservator of Forests
Perth, 1982

Introduction

Under the terms of the Forests Act (1918-1976) the Western Australian Forests Department is responsible for the control and management of all State forests and timber reserves. The Department is required, under the Act, to prepare working plans for the management of the resources under its jurisdiction.

The latest plan, General Working Plan No. 87 1982, was approved by the Governor in Executive Council on 9 March 1982. It outlines the history and development of forest land management in Western Australia and specifies how the Government's forest policy is to be achieved in the light of current issues and values facing forest managers.

This selection of extracts is intended as an introduction to General Working Plan No. 87. It will enable an appreciation to be gained of the Government's forest policies and of the Forests Department's approach to management of the forest area over the next five years. The Table of Contents is included to indicate the scope of the complete Plan, the Summary describes major features, and for easy reference, a collection of the objectives, policies and strategies is provided for each forest value.

Those who require detailed information will wish to consult the complete Plan. Copies are available at a cost of $12.00 each from the Forests Department, 50 Hayman Road, Como, and from the Government Information and Inquiry Centre, 32 St. George's Terrace, Perth.

This compilation consists of the following extracts from the complete Plan:

GENERAL WORKING PLAN
No. 87

General Working Plan No. 87 represents a further step forward in planning the use of the forest on a multiple use basis for the benefit of all Western Australians.

Objectives, policies and strategies for forest resource management which were first stated in G.W.P. No. 86, have been thoroughly tested and reviewed by major forest users. In the current Plan they are amended or up-dated as necessary to meet the State's requirements.

This Plan incorporates further developments in land use management planning which were largely in embryo five years ago.

Proposals now put forward are provisional in many respects and subject to change after further refinement and incorporation of additional data as they become available. It is hoped that these proposals will be seen by all forest users and persons interested in the forest as a major advance in overall land use management.

The lack of constructive public response to the previous plan has been disappointing in view of the criticism expressed from time to time on specific issues. The limited response received from the public and main forest users has, however, been complimentary and favours continuation of the Plan in its present form.

It is proposed this Plan remain in operation for a maximum period of five years from the date of approval by the Governor in Executive Council. Annual reviews of progress will be undertaken at all management levels and formal recommendations for amendments will be submitted in the interim as found necessary in the light of new and improved information.

B.J. BEGGS
Conservator of Forests

Contents

Summary

Management of the West Australian forest estate and its many values has been the objective of the Forests Department for more than six decades. There are now some two million hectares of forest that the Department is responsible for managing.

Public awareness of, and demand for, forest benefits have now reached the stage where scarcity imparts special importance to each of the many recognized forest values. Appreciating this, in October 1974 the Government requested an appraisal of the forestry situation and subsequently endorsed the concept of multiple use management that had been proposed by the Department. The concept was then expanded and embodied in a Statement on Forest Policy by Government in April 1976. Amendments to the Forests Act, necessary to permit implementation of this policy, were enacted in 1976.

This Working Plan, required under Section 31 of the Forests Act, outlines a land management system that has been developed to cater for the diverse range of forest values and land uses applicable to the forests, and for the protection of these values from damaging agencies.

Overall Management Objective

The management objective for land under control of the Forests Department is conservation through the planned use of forests and associated resources, for the greatest long-term social and economic benefits.

Conservation, as interpreted in this objective, has been defined by the International Union for Conservation of Nature and Natural Resources as *"the management of human use of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations.*

Thus conservation is positive, embracing preservation, maintenance, sustainable utilization, restoration and enhancement of the natural environment."

Multiple Use Management

Having regard to the limited forest area, and an increasing demand for each forest value and service function, management must prescribe as many uses as are possible. This is achieved through multiple use management which, in its simplest form, means the use of land for several different purposes.

Priorities for use are determined for each area, according to the inherent characteristics of the land and the current social values. Some uses cannot be practised concurrently while others may be partly or fully compatible with each other. The ranking of priority uses recognizes that compatible secondary uses and tertiary uses are vital to the total use allocation system.

Major priority uses recognized in the current land use management plan for State forests are:

Flora, Fauna and Landscape

Wood Production
(a) Hardwood Production
(b) Softwood Production

Water Production

Protection
(a) Catchment Protection
(b) Protection of Forest Values

Scientific Study and Education

Recreation

Public Utility

Mining

Since demand and constraints are subject to change, periodic re-appraisal of priorities is essential. Within this plan, the concept of multiple use management by priority use areas covers the entire forest area.

As the authority responsible for managing State forests, the Forests Department fully recognizes the State's obligations under the special Agreements relating to bauxite mining, coal mining and supply of timber.

However, in meeting these obligations the Department also has a responsibility to ensure that the other forest resources are utilized in a manner that the whole community might receive the best composite benefit from both existing forest values and developing industries based on forest land.

Forest Values

Major forest values recognized in the Working Plan are water, wood, flora, fauna, landscape, recreation, scientific study, education and minor products such as honey, sandalwood and wildflowers. Management for these values is proposed under a system of priority use areas.

Forest management must also take into account those non specific values or service functions such as public utilities (dams, roads, powerlines, pipelines, townsites, rubbish dumps) and mining activities required on forest areas. These resources are not part of the sustainable biological system, but every effort should be made to ensure that they are used conservatively.

In this Plan, particular attention is directed to water resources, management of public utilities and open cut mining within the forest area. Special provision is also made for protection of wildlife, for scientific study and for recreation with the objective of integrating these values into a total State system of which the forest area can represent a vital part.

The need for some flexibility in time and space within management must be appreciated as changes due to disease, natural catastrophe, overuse or changing social attitudes may impair or alter these values to the extent that they are no longer capable of providing the benefit originally intended.

Resource Management Objectives

Catchment Management: To manage State forest catchments needed for water supplies in order to maintain or enhance water quantity and quality in accordance with the requirements of the water supply authorities.

Sawlog Production: To ensure that the estimated local demand for sawn timber and other wood products is met as far as possible from local supplies and to gradually adjust the volume removed from the indigenous forest to a level consistent with the long-term productive capacities of each species, having due regard for employment in the timber industry and the associated regional stability.

Wood Residues: To harvest forest residue material where this is in harmony with other land use priorities, so as to avoid waste, and where possible, to benefit regeneration and productivity.

Roundwood Products: In the long-term, to ensure that the local demand for poles, fencing material and other roundwood is met largely from local supplies while supplying poles, fencing material and other roundwood from areas where removal will benefit the forest or a valuable resource would otherwise be wasted.

Sandalwood Production: To make supplies of sandalwood available when this does not damage young sandalwood plants, alter the distribution of species or conflict with major land use objectives.

Honey Production: To sustain the present level of beekeeping with due regard to location of apiary sites to avoid transference of disease and conflict with major land use objectives.

Wildflower Production: To maintain a supply of seed of native species consistent with demand from Departmental nurseries and for local and export sales and co-operate with the Department of Fisheries and Wildlife in the control of commercial wildflower picking.

Flora and Fauna: To ensure the preservation, maintenance, sustainable utilization, restoration and enhancement of the forest species and communities.

Landscape: To ensure that, as far as possible, all land uses and activities are planned and carried out in ways that complement rather than detract from the inherent visual qualities of the forest environment.

Nurseries: To supply tree seedlings to the public for planting in rural areas and to meet Departmental requirements.

Recreation: To provide for the planned development of recreation on State forests having regard to anticipated social needs and compatibility with environmental protection.

Rehabilitation: To regenerate a stable forest ecosystem capable of maintaining or enhancing, where possible, recognized forest values including water, timber, recreation, flora and fauna.

Scientific Study: To provide further understanding of forest ecosystems and forest management by scientific investigation.

Education: To promote a public understanding of forests, forest benefits and forestry practices.

Public Utilities: To limit development of public utilities that result in loss of forest values to those considered essential by Government, and for which there are no reasonable alternative locations.

Mining (Mining Act Minerals): To guide mining operations to areas where there will be least conflict with other land uses, having regard to overall balanced development including economic considerations, and to ensure that mining operations proceed under appropriate safeguards which minimize adverse effects on other competing land uses, to minimize environmental damage and to rehabilitate areas affected by mining to best suit future land use. Continuing exploration will be facilitated in accordance with the provisions of the Mining Act, 1978-81.

Mining (Gravel, Stone and Sand): To minimize the effect on forest of the extraction of gravel, stone and sand by supplying these resources exclusively to Government and semi-government authorites; and then only where there is no reasonable alternative supply; and where the supply will not damage conservation values.

Dedication of Land for Forestry Purposes: To increase the area of State forest where possible to meet foreseeable public demand for each forest use, taking into account land vested in other authorities, that complements forestry.

Fire Protection: To provide a fire control system capable of protecting forest values from serious damage. The system is to be compatible with the dominant land use in any area, with the cost of protection not to exceed the value of the loss prevented.

Jarrah Dieback Disease: To limit the spread of infections of jarrah dieback disease and to improve the resistance of the forest to the disease.

Support Services: To assist in achieving the goals of resource management in an effective manner.

Timber Production

Timber production is essential to supply the community's needs for a basic raw material and makes an important contribution to the social stability of the south-west.

The timespans involved in timber production make it necessary to plan for continuity of future supplies at least two decades before the demand arises.

It is predicted that sawlogs will be the major wood product needed and a continuing reduction in the yield of hardwood sawlogs will be required to obtain a better long-term balance between sawlog increment and removals.

It is likely that lower quality hardwood logs will be used as local demand for the limited resource increases. There will be growing economic pressure to increase the use of forest and sawmill residues from all sources. There is increasing demand for significant forest resources such as firewood, industrial charcoal and woodchips. The present demand of 35 000 poles for State Energy Commission transmission and distribution lines is expected to continue.

There can be no simple equation between gross forest increment and annual cut as envisaged in the classical concept of sustained yield, until the forest contains a complete range of age classes in units of equal area or productivity. It is also desirable that markets should match the full range of products available each year. These conditions do not apply in Western Australia because of the intensity and distribution of previous cutting as well as other factors affecting the growth rates in the hardwood forest and because the softwood plantation estate is still being developed.

Allowable Cut

The allowable cut is determined by management rather than by silvicultural criteria. The main factors that must be taken into account are existing levels of demand, types of produce required and the period required to accumulate future forest capital in the most desirable range of size classes. This latter process will take at least a century in the hardwood forest and not less than six decades in the conifer plantations.

During the period of this Plan increasing quantities of pine sawlogs will become available to help offset the effects of reducing the hardwood sawlog cut. It will be necessary to rely on imported timbers to make good any shortfall in local sawlog availability during periods of peak demand. The allowable hardwood sawlog cut will be reduced from 823 000 m^3 to 762 000 m^3 per annum. Over this same five-year period, pine sawlog production will increase from 64 000 m^3 to about 108 000 m^3 per year. Details of these proposals are considered in Part II of this Working Plan which will remain confidential to protect the rights and interests of forest-based industries.

It is planned that some 30 000 m^3 to 50 000 m^3 of sawlogs per annum from small hardwood logs may be made available in the latter part of the planning period. This log resource would be in addition to the allowable cut and would be from areas that require thinning or from areas to be felled.

To achieve a reasonable level of local self-sufficiency, it is estimated that the State plantation programme should be maintained at 3 500 hectares a year to meet predicted local sawlog demand by the turn of the century. Of this area, it is intended that 3 000 hectares will be government planting, and 500 hectares private planting.

The wood residue-using industries are of particular significance to forest operations in fostering regeneration, which is the key to future hardwood productivity. They also allow flexibility of management options by providing effective outlets for intermediate thinnings.

Regulation of the Cut

The present system of regulating the cut from State forest under sawmilling permits or sawmilling licences, each with a predetermined allowable log intake, will continue. Log intakes will be nominated for each of the major species so that specific reductions in the jarrah and karri cut are effectively controlled.

Private Forestry

The level of sawlog supplies from privately owned hardwood forests will continue to provide a useful contribution during the planning period. Improvement in the market for woodchips and a growing interest in wood as a fuel are increasing the value of the private hardwood forests to the State. Where water quality is declining on important catchment areas the need for tree planting and retention of existing forest cover indicates further potential for private forests.

The 11 700 hectares of private pine plantation established in the State represent an important asset and some small mill logs, fence posts and residue material from these areas will come onto the market during the current planning period. It is desirable that extension of the private resource should continue at a rate of at least 500 hectares a year to assist the State aim of future timber self-sufficiency.

Mining and Public Utilities

These land uses frequently result in changes to the original forest, and depending on their nature, may preclude the eventual re-establishment of a similar forest type. Nonetheless they are essential to the general economic well-being of the community. Where practicable they will be accommodated in localities where there is least conflict with other land uses. Appropriate provision will be made for effective rehabilitation, especially to meet the needs of water supply.

Rehabilitation

Dieback disease, mining, gravel pits and other clearings result in the denudation of some areas of State forests and timber reserves. These areas require rehabilitation to re-establish a forest environment appropriate to the priority use for the area.

Apart from general requirements prescribed in the Forests Act, the Department has responsibilities regarding rehabilitation in connection with the main mining Agreements that affect State forest.

The Department also assists other government agencies in the reforestation of repurchased farmland to reduce salinity levels in water supplies.

Protecting the Forest

Experience during Cyclone Alby clearly demonstrated the value of an effective forest protection and communication system. This emphasis is particularly relevant in planning for an expanding protection commitment due to increasing areas of high quality hardwood regrowth and plantation forest and special needs for habitat management. Restrictions to staff and finance place the management emphasis onto improved personnel training, effective use of surveillance aircraft for early detection, strategic use of prescribed burning and grazing for fuel reduction and research to prescribe special protection requirements for sensitive habitats.

Proclamation of disease risk areas and dieback mapping procedures now provide the means to locate accurately the presence of jarrah dieback disease and effectively plan future operations for the area. Given accurate knowledge of disease location and continued development of hygiene techniques, a great reduction of new infections is expected.

Support Services

The Department's multiple use management porposals require a vigorous and continuing programme of research and development. Departmental research activities are primarily directed towards developing or adapting management techniques to meet the special nature of the Western Australian climate, species and soils.

Active participation in the several joint interdepartmental research projects dealing with broader aspects of land use will be continued. This effort is integrated by the newly established Research Co-ordinating Committee and its supporting Steering Committee. Investigations carried out jointly by the several participating organizations will cover not only the physical and biological aspects of the programme, but will also give proper consideration to the social and economic aspects.

Operational and rehabilitation techniques in relation to dieback disease control including manipulation of the fire regime and hygienic logging and mining procedures are projects of continuing priority.

Particular attention will be concentrated on the development of suitable agro-forestry systems and tree establishment and maintenance on farms during the planning period.

Further evaluation of recreational potential and use is also important. There is a real need for expanded examination of some of the broader economic and social aspects of forestry, particularly the appraisal of the values placed on the forest resource by the public.

Other important topics requiring investigation include improvement of hardwood growth data, the continued development of a computerized forest management information system, development of inventory procedures for forest values other than wood at operational level, and applications of operations research procedures to field systems.

The increasing public awareness of forestry has highlighted the need for a higher standard of general public information in forestry matters as a means of stimulating more informed and more constructive feedback from responsible individuals and organizations.

Existing extension activities will be expanded by providing a better information service for rural and urban forestry concerning tree species selection, establishment and maintenance.

Continued emphasis will be placed on the Departmental safety programme which has proven exceptionally rewarding since its inception. Where possible the current programme will be extended further to personnel fitness and welfare.

The increasing needs of staff have led to the formation of a separate personnel section within the Department. The aim is to ensure a system of management that will give full scope to individual capacity and ability and encourage team work.

There is serious overcrowding in several divisional centres and it is hoped within the current planning period to be able to relieve this problem by the provision of new office and housing accommodation.

Working Plan Control and Review

This Plan will remain in operation for a period of five years from the date of approval by the Governor in Executive Council. Reviews of progress will be undertaken at all management levels and formal recommendations for amendments will be submitted in the interim as found necessary in the light of new and improved information.

Appendix 8

SUMMARY OF RESOURCE MANAGEMENT OBJECTIVES POLICIES, STRATEGIES

RESOURCE MANAGEMENT

PREAMBLE

Planning is concerned with setting and achieving goals. Forest management involves a large range of goals and there are many possible ways of achieving them. It is therefore desirable to clarify how the broad goals will be achieved, and in this working plan the following "three-stage" planning terminology is used to do this, involving objectives, policies and strategies.

Management Objectives are the goals of forestry in Western Australia. They are broad statements of what the Department expects to achieve within known legal, economic and social constraints now operating or expected to operate in the future. Multiple objectives are necessary to provide for all land uses and their protection. Logical decision making is possible only when priorities are assigned to objectives. This is catered for in the approach to multiple use adopted by the Department, whereby the forest is managed as a series of areas that have primary and secondary priority uses allocated to them.

Policy is the course of action to be taken to achieve the objectives and specifies broadly what will be done by the Forests Department. Policies direct decision-making and form the basis for the objectives of each subsequent level of management.

Strategy explains how the course of action, specified as policy, is intended to be achieved.

Under the multiple use approach considered in the section Forest Land Management in Western Australia, State forest is being classified into primary use areas for the major forest values currently recognized in forest management. The preliminary classification is shown in Map 2, the Land Use Management Plan.

In this section each major forest resource is dealt with as if it were being managed for maximum productivity. However, there will be circumstances when this will result in conflict with other land uses. This will frequently apply even where the forest resource is managed as the primary use. The conflict will sometimes be reduced if the forest resource is managed at less than maximum productivity. Examples of the types and range of conflict that might be expected are outlined for each resource under the heading "Interaction with other land uses". Appendix 6 also gives examples of compatible and incompatible primary, secondary and tertiary uses. In formulating regional management plans in practice, policies and strategies are interpreted in relation to conflicting land uses.

WATER

Management Objective

To manage State forest catchments needed for water supplies so as to maintain or enhance water quantity and quality in accordance with the requirements of water supply authorities.

Policy

(1) Protect existing healthy forested catchment areas from agents that might lead to deterioration of water quality.
(2) Rehabilitate degraded areas where necessary to ensure that water quality is maintained or restored.
(3) Regulate all other uses of forested catchments when they compete with water production objectives.
(4) Monitor the water quality of streams where changes in land use are involved.
(5) Investigate techniques of land management with the aim of maximizing water supply without detrimentally affecting quality.
(6) Liaise with water supply authorities concerning all Departmental matters affecting water supply and any new management practices proposed.

Strategy

(1) Direct forest management on salt-sensitive areas towards maintenance of a deep-rooted perennial crop and to restore vegetation cover as quickly as possible where it is removed by dieback disease or other causes.
(2) Design harvesting and silvicultural practices to increase water quantity whilst protecting water quality.
(3) Keep road construction and maintenance to the standard necessary for catchment protection.
(4) Minimize the spread of dieback disease, particularly where any activities occur on salt-sensitive areas.
(5) Continue prescribed burning on catchments in such a way as to minimize turbidity, ash pollution and salinity and to regulate run-off.
(6) Manage existing land uses on catchments to minimize the risks of siltation, turbidity, salinity and biological pollution.
(7) Avoid land use changes where they prejudice water values or potential storage sites.

WOOD

SAWLOG PRODUCTION

Management Objectives

(1) To ensure that the estimated local demand for sawn timber and other wood products is met as far as possible from local supplies.

(2) To gradually adjust the cut from the forest to a level consistent with the long-term productive capacities of each species, having due regard for employment in the timber industry and the associated regional economic stability.

Policy

(1) Continue to gradually reduce the annual hardwood sawlog cut to about 150 000 m^3 over the next 50 years.

(2) Increase annual pine sawlog production from Forests Department plantations to approximately 960 000 m^3 by the year 2020.

(3) Control log preparation and allocation to user industries to achieve the most effective resource utilization.

(4) Continue investigations into harvesting techniques designed to avoid environmental damage.

(5) Liaise with the timber industry concerning environmental protection, future availability of the resource and utilization standards.

(6) Liaise with private plantation owners to encourage plantation extention, co-ordination of wood resources with the State, and to advise on plantation management.

Strategy

(1) Reduce the annual hardwood allowable cut excluding salvage logs during this plan period to 762 000 m^3. This will be made up of 184 000 m^3 of karri, 553 000 m^3 of jarrah and other species and 25 000 m^3 of marri. The karri cut will be further reduced by 27 000 m^3 in 1988, but it is anticipated that the cut in large sizes for this species will not be further reduced for a considerable time. The cut for jarrah will continue to be reduced.
During the next five years the reduction in the allowable cut will result in six small mills ceasing operations based on general purpose sawlogs from State forest and Crown land. The mills may continue operating on this material only if private mill log resources can be found.
In the preparation of marri and karri chiplogs at the Diamond Wood Chip Mill, a very small percentage of logs is of sufficient quality to be used as sawlogs.

(2) Continue to restructure the industry to provide for:
(a) amalgamation of sawmills into a reduced number of units of economic size;
(b) variations of permits and licences to provide the management flexibility necessary for multiple use forestry;
(c) transferring part of the work-force to remanufacturing activities and into the developing pine processing industry which will be established in the south-west, but not necessarily at those centres currently occupied by the hardwood industry.

(3) Give priority to supply of high quality logs to veneer manufacturing industries.

(4) Control mill intakes under the existing system of permits or licences with greater emphasis on licences. The allowable cut will be specified by species.

(5) Encourage high utilization standards and facilitate the full utilization of the resource by continuing salvage logging following normal logging operations. Such salvage logging involves sawlog material which would otherwise be wasted and its volume is in addition to the allowable cut.

(6) Introduce modern pine sawmilling techniques into the State.

(7) Make pine sawlogs available to the private sector under the terms of earlier tenders for development, and maintain supplies to existing industries.

(8) Continue to supply the market for small karri logs from karri thinnings at about 15 000 m^3 per year.

(9) Expand the hardwood sawlog resource base from the recognized sawlog size trees to include small hardwood logs from forests with a high proportion of small sized trees. Such trees will be available from forests that require thinning and from forests that are to be clear felled. This will be achieved by offering to industry the right to introduce sophisticated sawmilling equipment and ancillary units to convert initially some 30 000 m^3 to 50 000 m^3 of this type of resource. This log volume will be in addition to the allowable cut.

(10) Maintain a total annual pine planting rate for the State of 3500 hectares for this plan period, favouring radiata where possible.

(11) Prevent damage to soil values and further artifical spread of dieback disease by reducing winter logging operations and developing summer stockpiling techniques.

WOOD RESIDUES

Management Objectives

To harvest residue material where this is in harmony with other land use priorities, so as to avoid waste, and where possible to benefit regeneration and productivity.

Policy

(1) Direct residues from sawmilling and forest tending operations to appropriate industries.

(2) Harvest residues according to priorities set to achieve maximum State benefit.

Strategy

(1) Harvest residues concurrently with sawlog operations. Exceptions to this will only be approved where residue becomes available from forest tending and regeneration treatments or, where dry wood is available, and where the removal of these products is in harmony with other land use priorities. Particular attention will be paid to using residues resulting from clearing for plantations or for mining operations.

(2) Supply material from State forest to the established residue-using industries, as in Table 6.

TABLE 6

Agreement Acts Relating to Wood Residues

Company	Agreement	Maximum Amount of Wood Per Annum
W.A. Chip & Pulp Co. Pty. Ltd.	Woodchipping Industry Agreement Act 1969-1973	680 000 tonnes
Wesply-Wesbord Industries Pty. Ltd.	Wesply (Dardanup) Agreement Authorisation Act 1975	330 000 m^3
Agnew Clough Pty. Ltd.	Wundowie Charcoal Iron Industry Sale Agreement Act 1974	136 000 tonnes

ROUNDWOOD PRODUCTS

Management Objectives

(1) In the long term, to ensure that the local demand for poles, fencing material and other roundwood can be met largely from local supplies.

(2) To supply poles, fencing material and other roundwood from areas where their removal will benefit the forest or a valuable resource would otherwise be wasted.

Policy

(1) Supply poles from jarrah forest where this does not increase the risk of spreading dieback disease, or result in conflict with other land uses.

(2) Harvest roundwood required for deep mining from areas where this will be in harmony with other land use priorities.

(3) Recover roundwood from areas in process of clearing or clear felling or from which sawlogs have previously been removed.

Strategy

(1) Continue liaison with the State Energy Commission to arrive at greater usage of species other than jarrah and to specify minimum standards for each pole quality.

(2) Provide for arrangements that allow extraction of jarrah pole supplies mainly during summer.

(3) Provide for more complete integration of pole harvesting with other harvesting operations.

(4) Continue to plant and manage up to 100 hectares of hardwoods per annum, primarily for pole production.

(5) Provide for supply of fencing material from reserves set aside for settlers requirements to farmers located more than 50 kilometres away from operations in State forest.

OTHER FOREST PRODUCE

SANDALWOOD

Management Objective

To make available supplies of sandalwood where this does not damage young sandalwood plants, alter the distribution of species or conflict with major land use objectives.

Policy

(1) Continue to control the operation by the present system of licences.

(2) Ensure salvage of dead wood and trees affected by wildfire receives priority over living trees.

(3) Review management procedures as further research data becomes available.

Strategy

(1) Maintain present supplies of approximately 1650 tonnes per annum from the field (which equates to an export volume of 1500-1550 tonnes per annum). To continue to provide employment for those engaged in the trade.

(2) Ensure maximum use of dead material, restrict removal of green material to stems of more than 400 mm circumference, and ensure complete utilization.

(3) Ensure that areas allocated to pullers are within pastoral lease boundaries where this is applicable and practical.

(4) Specify licence conditions so as to ensure perpetuation of the species and create minimum conflict with major land use objectives.

(5) Continue the current sandalwood resource survey and investigations into establishment and regeneration techniques in liaison with the Sandalwood Research Institute.

HONEY

Management Objective

To sustain the present level of beekeeping with due regard to location of apiary sites to avoid transference of disease and to minimize conflict with major land use objectives.

Policy

(1) Locate apiary sites at acceptable distances apart, taking account of constraints, such as:
   (a) location in relation to private property;
   (b) risk of stream and water pollution caused by clearing a site, vehicles and camping;
   (c) proximity of current or proposed activity by the Forests Department and other forest users;
   (d) access by apiarists to disease risk areas, or dieback disease areas;
   (e) requirements of other authorities controlling Crown land;
   (f) relevant Acts and Regulations.

(2) Investigate the allocation of apiary sites, the regularity of their use, the yield of nectar and prospects for manipulation of blossom to stabilize the annual flow of nectar.

(3) Refer each application for apiary sites on land vested in other authorities to the authority concerned.

Strategy

(1) Control apiculture on State forests and other Crown land by the existing system of permits.

(2) Advise registered beekeepers of proposed Forests Department activity that could conflict with the location of their hives or honey production from the site. The Government Apiculturist is notified of the Department's prescribed burning programme each year.

(3) Continue liaison with other authorities that control Crown land on which apiary sites are located.

WILDFLOWERS

Management Objective

To maintain a supply of seed of native tree and shrub species consistent with the demands of Departmental nurseries and of local and export sales; and to co-operate with the Department of Fisheries and Wildlife in the control of commercial wildflower picking.

Policy

(1) Permit picking on State forest, where methods used do not conflict with land use priorities, and subject to any necessary management conditions.

(2) Collect further data on the range of occurrence of species in commercial demand and investigate their management requirements.

(3) Identify and protect uncommon species of native plants that occur on lands managed by the Department.

Strategy

(1) Continue liaison with the Department of Fisheries and Wildlife with respect to distribution and management of wildflower species.

(2) Ensure that all licensees operating on forest land receive clear instructions and appropriate endorsements on their licences.

(3) Advise the Department of Fisheries and Wildlife, wherever possible, of the need to restrict the issue of licences for species affected by seasonal variation in supply.

(4) Establish and maintain seed orchards for species that are of limited supply or are difficult to collect.

FLORA AND FAUNA

Management Objective

To ensure the preservation, maintenance, sustainable utilization, restoration and enhancement of forest species and communities.

Policy

(1) Locate, delineate and protect areas representing the widest possible range of ecological types to ensure their perpetuity.

(2) Provide within each ecological type, as far as possible, examples of the various stages of succession.

(3) Monitor flora and fauna populations and study their habitat requirements to develop a sound basis for management.

(4) Co-ordinate flora and fauna management priorities in State forest with the requirements of other authorities.

(5) Ensure that flora and fauna conservation is practised in management operations where possible.

(6) Review the adequacy of security of purpose for flora and fauna priority areas.

Strategy

(1) Prepare prescriptions for each area on which the conservation of flora and fauna is the management priority, and provide for ongoing review.

(2) Monitor the application of prescriptions to assess whether they meet the management objectives.

(3) Carry out research to determine the need to improve management prescriptions.

(4) Maintain liaison with other authorities responsible for conservation of flora and fauna to ensure that programmes continue to be complementary.

LANDSCAPE

Management Objective

To ensure that, as far as possible, all land uses and activities are planned and carried out in ways that complement, rather than detract from, the inherent visual qualities of the forest environment.

Policy

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

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

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

Strategy

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

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

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

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

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

(6) Achieve a high standard of design for all new buildings using materials and colours compatible with the surrounding landscape.

(7) Develop a standard system of signs to cater for the various sign requirements of the Department.

NURSERIES

Management Objective

To supply tree seedlings to the public for planting in rural areas, and to meet Departmental requirements.

Policy

(1) Sell tree seedlings for planting in rural areas to members of the public at approximately cost price.
(2) Seedlings will not be despatched to city or suburban areas and are not intended for resale.
(3) Raise tree seedlings for Departmental requirements in Departmental nurseries.

Strategy

(1) Raise tree seedlings for supply to the public at Hamel and Narrogin nurseries.
(2) Produce tree seedlings of various species for rehabilitation of dieback diseased areas, mined areas, landings and snig tracks in the forest as well as for reforestation of catchment areas for the Public Works Department and State Energy Commission at Manjimup and Hamel nurseries.
(3) Raise pine seedlings for Departmental use in the Gnangara and Nannup nurseries.
(4) Raise planting stock for regeneration of karri forest at Manjimup nursery.
(5) Continue pest and disease control measures in all nurseries.
(6) Continue practical trials of various nursery techniques.

RECREATION

Management Objective

To provide for the planned development of recreation on State forests having regard to anticipated social needs and compatibility with environmental protection.

Policy

(1) Measure the levels of use for each type of recreation occurring in State forest.
(2) Investigate the capacity of the environment to cater for various types of recreation activities and the number of people involved, and investigate the means by which the environment may be protected from over-use in any one area.
(3) Provide facilities and sites for recreational pursuits as the demand is foreseen, locating these facilities and associated services to avoid degradation of the environment and to protect recreation attributes of the locality.
(4) Continue studies for the planned progressive development of recreational facilities on a regional basis.
(5) Liaise with State Government and local government in order to integrate forest-based recreation with overall requirements.

Strategy

(1) Sample public demand for forest-based recreation.
(2) Investigate techniques by which recreation may be evaluated in relation to other land uses.
(3) Consult and liaise with all organizations and authorities having recreation functions, in particular, the Department for Youth, Sport and Recreation, which has responsibility for co-ordination of recreation on a State-wide basis.
(4) Develop regional framework plans that will provide for the co-ordination of recreation planning between divisions in any one region.
(5) Develop divisional recreation plans.
(6) Examine the need for additional security of purpose for recreational priority areas.
(7) Examine the need for regulation of certain types of motorized recreational activities on State forest.
(8) Ensure that other forest activities in and adjacent to recreation priority areas enhance or avoid conflict with the primary use.

REHABILITATION

Management Objective

To regenerate stable forest ecosystems capable of maintaining or enhancing, where possible, recognized forest values including water, timber, recreation, flora and fauna.

Policy

(1) Rehabilitate areas affected by mining, dieback disease or clearing for farming in accordance with the designated land use priority.
(2) Develop optimum techniques for rehabilitation.
(3) Liaise with mining companies, and other Government Departments to ensure they are aware of the latest rehabilitation techniques and standards.

Strategy

In Mined or Dieback Disease Affected Areas:

(1) Develop prescriptions for rehabilitation procedures for each affected area.

(2) Monitor the rehabilitated areas for their capacity to sustain long-term production of recognized forest values.

(3) Develop remedial treatments should monitoring reveal that the objective is not being met.

In Cleared Forest Areas in High Salinity Risk Zones:

(4) Plant species that can be grown successfully on these sites and that have the ability to transpire large amounts of water from deep in the soil.

(5) Develop and prescribe remedial action if monitoring reveals deficiencies in the establishment or growth phases of the stand.

SCIENTIFIC STUDY AND EDUCATION

SCIENTIFIC STUDY

Management Objective

To further the understanding of forest ecosystems and forest management by scientific investigation.

Policy

(1) Encourage scientific investigation of forest ecosystems and forest management.

(2) Manage areas of State forest for scientific purposes.

(3) Liaise with research agencies to ensure projects are of maximum benefit.

(4) Apply knowledge gained from scientific investigations to improve forest management.

Strategy

(1) Maintain an active research section within the Department.

(2) Promote the interest of research agencies in the study of forest projects.

(3) Provide guidance to research agencies in the selection of projects to ensure expedient and appropriate priorities and to avoid duplication.

(4) Ensure the publication and dissemination of proven data through scientific journals, Departmental publications, and other relevant brochures.

EDUCATION

Management Objective

To promote a public understanding of forests, forest benefits and forestry practices.

Policy

(1) Encourage the educational use of State forests.

(2) Produce educational aids for use in schools and other organizations.

(3) Establish and maintain field study centres.

Strategy

(1) Produce leaflets, brochures, films and displays for education in forestry matters.

(2) Establish demonstration forests.

(3) Promote and conduct educational visits to the forests.

(4) Maintain the Jarrahdale and Mundaring Field Study Centres.

(5) Consider the establishment of new field study centres in co-operation with other organizations.

(6) Liaise with the Department for Youth, Sport and Recreation in the supply of educational material to their camps, and with other government and private organizations as the opportunity arises.

(7) Visit educational institutions and lecture on forestry.

PUBLIC UTILITIES

Management Objective

To limit development of public utilities that result in loss of forest values to those considered essential by Government, and for which there is no reasonable alternative location.

Policy

(1) Retain as much as possible of the forest area free of public utilities.

(2) Guide the location of public utilities on State forest into areas where land use conflict and environmental damage are minimized.

(3) Rehabilitate redundant sites to suit the designated land use.

(4) Liaise with service authorities to ensure their awareness of the effects of their operations on the environment and other land uses.

Strategy

(1) Liaise with shires to avoid the use of State forests for access to new subdivisions.

(2) Obtain compensation, where appropriate, to offset loss of forest estate and associated values.

(3) Guide public utilities into areas where risk of dieback disease spread, the risk of salinity, and aesthetic impact are minimized. Encourage the use of landscaping.

(4) Encourage the use of the same sites for more than one utility.

(5) Ensure management practices do not endanger public utilities.

(6) Develop procedures for rehabilitation of redundant sites in conjunction with and where appropriate at the expense of the agency responsible.

MINING

MINERALS AS DEFINED UNDER THE MINING ACT

Management Objective

To guide mining operations to areas where there will be least conflict with other land uses, having regard to overall balanced development including economic considerations, and to ensure that mining operations proceed under appropriate safeguards which minimize adverse effects on other competing land uses, to minimize environmental damage and to rehabilitate areas affected by mining to best suit future land use. Continuing exploration will be facilitated in accordance with the provisions of the Mining Act, 1978-81.

Policy

(1) Advise Government of the effects of mining on forest values and current and future land uses.

(2) Continue research into techniques aimed at minimizing environmental damage and land use conflict.

(3) Liaise with mining companies to ensure they are aware of the effects of mining on the environment and other land uses and of rehabilitation techniques.

(4) Liaise with authorities responsible for administering mining agreements and with other organizations authorized to study mining effects and rehabilitation techniques.

(5) Rehabilitate areas affected by mining to suit the designated land use and in accordance with conditions imposed by State Government under the various mining agreements.

(6) Liaise with the Mines Department, the Department of Resource Development, and the Department of Conservation and Environment to determine the conditions under which exploration for minerals or petroleum can occur in State forest.

Strategy

(1) Minimize the area of State forests cleared for mining operations.

(2) Obtain realistic compensation from companies mining on State forests to cover loss of forest values, land purchase and the continuing cost of management of areas affected by mining.

(3) Guide bauxite mining operations into areas where the salinity problem is minimized, into dieback disease affected areas and into low quality forest, where practicable.
In achieiving this strategy, it is recognized that some areas of healthy forest will be mined in a natural sequence having regard to the topography and the location of ore pods in relation to the optimum extraction routes.

(4) Seek to direct other mining operations into areas where there will be least conflict with other land uses.

(5) Seek the inclusion of appropriate conditions governing environmental protection into mineral leases issued under the Mining Act.

(6) Ensure that exploration in State Forest is conducted by companies or individuals in strict adherence to conditions stipulated by the departments responsible for forests and mining.

GRAVEL, STONE AND SAND

Management Objective

To minimize the effect on forest of the extraction of gravel, stone and sand by supplying these resources exclusively to Government and semi-government authorities; and then only where there is no reasonable alternative supply; and where the supply will not damage conservation values.

Policy

(1) Provide Government and semi-government bodies with gravel, stone and sand only where no reasonable alternative outside State forest exists. Supplies will not be made available to private contractors who will be expected to use private sources.

(2) Ensure dieback disease hygiene methods are used in the excavation, transport and spreading phases of the operation.

(3) Locate borrow pits wherever possible outside stream and road reserves and where they are not in view from public roads.

(4) Rehabilitate borrow pits according to the designated land use.

Strategy

(1) Control removal of gravel, stone and sand from State forests and other Crown land by the existing system of licences and leases. Returns stating the amount removed from licence or lease areas are required monthly, whether or not royalty is payable.

(2) Ensure gravel, stone and sand from dieback disease infected sites are used only in areas similarly affected.

(3) Ensure that earthwork associated with borrow pit rehabilitation is carried out by the licence or lease holder or at their expense.

(4) Minimize the area of State forest cleared for borrow pit sites.

(5) Ensure licence fees and royalty rates cover costs incurred and that they are set at levels that generally encourage the use of alternative materials or sources of supply.

PROTECTING THE FOREST

DEDICATION OF LAND FOR FORESTRY PURPOSES

Management Objective

To increase the area of State forest where posible to meet foreseeable public demand for each forest use, taking into account land vested in other authorities that complements forestry.

Policy

(1) Advise Government on the forestry potential of vacant Crown land.

(2) Pursue dedication of vacant Crown land with forestry potential for State forests.

(3) Purchase suitable areas of private property as they become available.

(4) Exchange land when the total forestry potential will be increased.

(5) Oppose alienation of State forests.

(6) Recognizing the isolation of northern and eastern parts of the State from existing State forests, investigate the need for forest products in these areas and their potential for forestry.

Strategy

(1) Assess potential of Crown land for multiple use forestry.

(2) Enter into land purchase negotiations whenever suitable property has been advertized on the open market.

(3) Consolidate State forest boundaries.

FIRE PROTECTION

Management Objective

To provide a fire control system capable of protecting recognized forest values from serious damage. This system is to be compatible with the dominant land use in any area, with the cost of protection not exceeding the value of the loss prevented.

Policy

(1) Provide a well-trained and equipped fire suppression force capable of suppressing several simultaneous wildfires under severe weather conditions.

(2) Provide a detection system that will ensure rapid and effective attack of all wildfires in State forests and assist local authorities with detection of fires on neighbouring land.

(3) Employ fuel reduction techniques to enable wildfires to be contained under normal weather conditions.

(4) Assist authorities and landowners responsible for fire control on neighbouring land on the basis of mutual aid where this does not conflict with forest protection objectives.

(5) Liaise with other fire protection organizations to provide public education, warning and control in relation to fire risks.

(6) Continue investigations into the effects of fire on flora and fauna and on relationships with major land uses.

(7) Continue research programmes into the technological and managerial aspects of fire protection, particularly in respect of changing patterns of land use.

Strategy

(1) Ensure effective liaison with neighbours, bush fire brigades, shires and other organizations with fire protection responsibilities, particularly at local level.

(2) Provide a detection system for:
   (a) rapid and accurate determination of fire location;
   (b) early investigation of fire behaviour;
   (c) information on values threatened;
   (d) information on factors affecting fire behaviour;
   (e) monitoring fire development.

(3) Carry out prescribed burning of indigenous forest in appropriate seasons at intensities and frequencies that facilitate achievement of the major land use objectives.

(4) Carry out fuel reduction programmes in pine plantations on predetermined buffer strips using either low intensity prescribed fire, grazing, or mechanical means.

(5) Carry out training, preparedness checks, planning and equipment maintenance at appropriate times to ensure efficient suppression of wildfire.

(6) Continue research into the fields of:
   (a) economics of fire protection;
   (b) protection of hardwood regeneration;
   (c) reduction of fire hazard in pine plantations;
   (d) fire management for flora and fauna populations;
   (e) use of fire retardants;
   (f) aerial photography for fire control purposes;
   (g) fire weather forecasting;
   (h) fire suppression systems;
   (i) systems analysis and computer techniques in fire management.

JARRAH DIEBACK DISEASE

Management Objective

To limit the spread of infections of jarrah dieback disease and to improve the resistance of the forest to the disease.

Policy

(1) Classify State forests according to disease presence, susceptibility of sites and resistance of vegetation to the disease.

(2) Where warranted extend the proclamation of disease risk areas to allow detection and mapping of existing infections.

(3) Improve and apply hygiene measures.

(4) Rehabilitate infected areas with dieback disease resistant species to suit the designated land use.

(5) Research methods of disease control and rehabilitation.

(6) Consider the introduction of measures to control vehicle access to healthy forest in unproclaimed areas.

(7) Develop appropriate control procedures if trials indicate that it is possible to continue logging in proclaimed disease risk areas without stimulating the spread of the disease.

Strategy

(1) Use of aerial photography and ground surveys to prepare accurate maps to monitor diseased areas.

(2) Include or exclude areas from proclamation as disease risk areas depending on the information available for implementing dieback disease hygiene.

(3) Develop and apply hygienic procedures for all operations that involve vehicular access into State forest.

(4) Rehabilitate infected areas in salt sensitive zones either by manipulation of forest environment to discourage the disease, or revegetation of degraded sites. This work will be extended beyond the salt sensitive zones as priorities dictate.

(5) Develop and extend trials of various operational hygiene techniques, including logging, road making and mining, to test their effectiveness.

(6) Continue to disseminate information on dieback disease and its control to all forest users and the general public. Maintain training programmes in forest hygiene for staff and other organizations.

(7) Liaise with other organizations to foster research into dieback disease and avoid duplication of effort.

SUPPORT SERVICES

Management Objective

To assist in achieving the goals of resource management in an effective manner.

Policies

(1) Provide information, advice, trained personnel and equipment necessary to allow resource management objectives to be achieved.

(2) Acquire knowledge and skills so that decisions made about managing all forest resources are based on the most up to date information and expertize.

(3) Review management techniques, and information, staff, finance and equipment needs at regular intervals.

(4) Promote public understanding of forest ecosystems and forest policy.

Strategy

(1) Maintain sufficient staff capable of providing information, advice and equipment to allow resource management goals to be achieved.

(2) Ensure management systems and controls are effective in achieving resource management goals.

(3) Maintain training and recruiting programmes to ensure that the expertize necessary to achieve resource management goals is always available.

(4) Prepare statements indicating the technical value of projects in a way that allows their financial priority to be allocated.

(5) Provide information on forestry matters for the public, using appropriate means such as information sheets, publications, talks and field visits.

(6) Maintain contact with Government Departments and other organizations with interest in forest areas.