

95/96

1995
1996 ANNUAL REPORT

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DEPT. OF CONSERVATION
& LAND MANAGEMENT
29 OCT 1996
WESTERN AUSTRALIA

WHAT WE DO

CALM's Mission:

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

Western Australia has a beautiful, diverse and supportive natural environment which provides material, aesthetic and spiritual benefits. It is an essential part of Western Australians' livelihood and quality of life.

In keeping with our mission, the Department of Conservation and Land Management has the following objectives.

Conservation: To conserve indigenous plants, animals and ecological processes in natural habitats throughout the State.

Value and Use of Resources: To optimise the value and economic return to the community of wildlife, lands, waters and resources entrusted to the Department without compromising conservation and other management objectives.


Tourism and Recreation: To identify and provide opportunities and services to the community which allows them to enjoy the wildlife, lands, waters and resources entrusted to the Department without compromising conservation and other management objectives.

Knowledge: To seek and provide an up-to-date and sound scientific and information basis for the Department's conservation and land management activities.

Community Support: To promote community awareness and appreciation of the values of the wildlife, lands, waters and resources entrusted to the Department, and to develop community understanding and support for the Department's conservation and land management activities.

Human Resources: To recruit, develop, reward and retain knowledgeable and talented staff, and to provide a stimulating, safe, productive and supportive work environment where staff can pursue individual goals consistent with those of the Department.

Corporate Efficiency: To optimise the efficiency, effectiveness and responsiveness of the Department in the achievement of conservation and other management objectives.



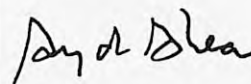
CUSTOMER FOCUS
WESTERN AUSTRALIA

CALM is committed to developing a range of services which meet the needs of our many customers, and at the same time are consistent with our responsibilities for conservation and land management in WA.

Department of Conservation
and Land Management
Locked Bag 104
BENTLEY DELIVERY CENTRE WA 6983
Web site: <http://www.calm.wa.gov.au/>

Hon Minister for the Environment

In accordance with Section 62 of the Financial Administration and Audit Act 1985, I submit for your information and presentation to Parliament the annual report of the Department of Conservation and Land Management.



Syd Shea
EXECUTIVE DIRECTOR
30 August 1996

HIGHLIGHTS

- Woylie taken off State and Commonwealth threatened fauna lists (pp. 1 and 11)
- Western Shield launched—Australia's biggest wildlife conservation program (pp. 1 and 14)
- Forests agreements close to completion (pp. 2 and 19)
- Solar kilns and VALWOOD® win five awards (pp. 19 and 20–21)
- Perth Observatory joins CALM (pp. 4 and 39)

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NO TIME FOR TIMIDITY

Major challenges can bring about several responses in organisations. One is to withdraw, batten down the hatches and safely wait for better times. Another response is to approach challenge face on and courageously attempt to overcome difficulties presented. I am proud to say that in 1995–96 the latter was the response demonstrated by CALM.

Faced with the potentially crippling debt brought about by past policies which prevented revenue from repaying borrowed expenditure, CALM has reduced debt by a massive \$14 million in one year, which represents 12 per cent of the debt accumulated by 15 years of the past approach.

Recognising the need to plant trees for environmental as well as economic benefits, CALM has pursued its program of developing the biggest hardwood plantations on cleared land in Australia's history. This bold approach has seen dramatic increases in plantation targets and plant propagation. This year more than 22 million seedlings and cuttings were produced in CALM's Manjimup nursery—the vast majority of which will be planted on farmland.

The need to deal with the threats to native fauna saw the largest and boldest nature conservation initiative in Australia in the form of the Western Shield feral control program. Despite criticism from some, CALM has not shrunk from the challenge but has expanded the program to cover nearly five million hectares of land. Already, as demonstrated in this annual report, there have been outstanding results.

The most important and historic of these has been the removal of the woylie from the State and Commonwealth threatened fauna lists. Put simply, through outstanding science and vigorous management, this mammal has been saved!

One of the major goals of the Western Australian Timber Strategy of 1987 was to encourage the timber industry to move to the production of value-added products from our native forest timbers. Nine years on the industry is well on the way to achieving that goal. One of my ways of coping with the dreary debate about utilisation of

native forests for timber production is to visit the small businesses that are employing more and more people in the production of high-quality wood products from native forest timbers.

Given the significance of our marine areas and the need to protect and conserve these areas and allow these areas to be used and enjoyed, CALM established a Marine Conservation Branch to pursue the implementation of a marine reserves system and improve the scientific basis for the management of existing reserves.

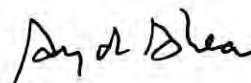
The challenge of providing quality experiences for visitors, while ensuring that areas are better conserved, has seen the completion of innovative nature-based tourism developments such as the Penguin Island viewing experience, the Tree Top Walk and Ancient Empire and numerous other world-class facilities.

All of the above are just examples of the proactive response that CALM has taken to the many challenges facing nature conservation and the sustainable use of resources in this State.

This approach depends upon a well-trained, motivated and enthusiastic staff willing to stand and deal with immense challenges. These achievements have required staff to pursue objectives despite obstacles, including unfair criticism, relying on each other and essential partners in the community who have worked with CALM in so many ways to meet seemingly insurmountable challenges.

The encouragement that comes from achievement and the support of others is no more evident than in the record number of volunteers working with CALM this year (page 37).

I commend all those CALM staff and partners in the community for their lack of timidity and for their achievement in the 1995–96 financial year. I look forward to an exciting year in which we will continue to make exciting progress for the people of Western Australia in the conservation and management of their lands and wildlife.



Syd Shea
EXECUTIVE DIRECTOR
30 August 1996

That was the Year . . .

1995-1996

CALM is an integrated agency. The Department manages lands and waters to conserve the native plants and animals they sustain, for the recreation and tourism they can support, and for the renewable resources they provide.

CALM's primary responsibility is to manage these lands and waters on an ecologically sustainable basis so that the needs of the present are met without compromising the choices of future generations.

The Program sections in this annual report describe some of CALM's achievements in detail. This section looks at some of the highlights of the year that took the public's attention.

WESTERN SHIELD — BACK FROM THE BRINK

Western Shield, the biggest wildlife conservation program ever undertaken in Australia, was launched in April. The program involves baiting almost five million hectares of the State's conservation lands with the naturally occurring compound that is found in native *Gastrolobium* species.

A program such as Western Shield is only possible because of the pioneering research by CALM scientists into the impact of fox and cat predation on our native animals, and the fact that the State has a natural advantage through its 'poison pea' plants. Because our native animals have evolved alongside these toxic plants, they have formed a high degree of tolerance to its effect. Foxes and cats haven't.

CALM has already shown that the fox and cat are largely responsible for the extinction of 10 species of native mammals, and many more near-extinctions. Through Western Shield, the Department hopes to reverse this decline, and eventually reintroduce native animals to their former habitats.

The program will operate in areas as diverse as Cape Range National Park near Exmouth, Peron Peninsula at Shark Bay, the south-west forests, the south coast, the edge of the Wheatbelt and inland arid regions.

With the help of sponsors, volunteers, landholders and other members of the community, Western Shield is going to make a massive difference to the recovery of species like the numbat, woylie, chuditch and rock-wallaby, as well as ground-nesting birds and some reptiles.

THE WOYLIE BOUNCES BACK

One of the most spectacular successes in reversing the trend of native animal species going extinct was announced in April when the State and Federal Governments accepted a recommendation to remove the woylie (*Bettongia penicillata*) from the list of endangered animals.

The woylie was once found in parts of Queensland, New South Wales, Victoria, South Australia, the Northern Territory and Western Australia, but predation by introduced species, particularly the European fox, and clearing of its habitat for agricultural, community and industrial development earlier this century, had forced the woylie to the point of extinction by about 1980. Only three tiny populations survived in their natural habitat, all in the forests and adjacent woodlands of southern WA.

Against this grim backdrop, it is easy to understand the celebrations in April of 1996, when the woylie (or brush-tailed bettong) was found to have bounced back from the brink so well that it became the first species ever to be removed from the endangered list as a direct result of recovery action taken by government and private agencies.

Its comeback signalled a major breakthrough for CALM in the fight to save Australia's endangered species, and gave hope to the many agencies involved in recovery plans for threatened flora, fauna and ecological communities throughout the State.

Fox control carried out as part of Operation Foxglove in the northern jarrah forest (a joint initiative between CALM and Alcoa of Australia and an integral part of the

State-wide Western Shield program) has been a critical factor in the recovery process. Woylies are confirmed from over 20 population sites in WA with a total population in excess of 17 000.

A NEW LEAF FOR DWELLINGUP

Our northern jarrah forest gained a new jewel during the year — the Forest Heritage Centre. It is the result of a unique partnership between the local community, the fine wood industry, Alcoa of Australia, and the Forest Industries Federation of WA and CALM, with sponsorship from numerous State and Commonwealth agencies and the private sector.

Sensitively designed to be in keeping with its Dwellingup forest surrounds, the centre is a first-class facility for the interpretation of the jarrah forest and its management. Its mission is to increase awareness and understanding of how Western Australia's forest heritage can be conserved, managed and used most effectively. The centre combines a gallery, a School of Wood dedicated to fine woodcraft, and a display and interpretation area that shows the inner workings of the forest — its social, natural and industrial history.

A specially designed walktrail takes visitors through a cross-section of the jarrah forest where the effects of water and fire can be seen, as well as the plants and animals of the forest system. An elevated canopy walk stretches up to the tree-tops for an aerial perspective on the forest system, as well as a bird's-eye view of the craftspeople at work in the School of Wood.

A five-year business plan anticipates that the Forest Heritage Centre will cater to about 75 000 visitors a year who will be drawn irresistibly into the experience of the centre, and will leave with an enriched sense of WA's forest heritage.

AGREEMENTS ON FORESTS

Negotiated agreements between the State and Commonwealth Governments (under the National Forest Policy Statement of December, 1991) were a major priority for the Department on behalf of the State Government in the past year.

As part of the negotiations, CALM undertook detailed assessments of the native hardwood forest areas to determine the extent of features such as biodiversity, old growth, wilderness, endangered species, and the comprehensiveness of the conservation reserve system. These assessments showed that Western Australia's forest conservation reserve system, with minor modification,

was in line with the criteria set by the Commonwealth for the forest agreement process.

Following further negotiation with the Commonwealth, the State Government agreed to set aside a further 35 000 hectares of old growth forest while further comprehensive regional assessments of the forests were made. WA further agreed not to harvest in another 102 000 hectares in 1996 and 45 000 hectares in 1997.

This move opened the way for the State and Commonwealth to sign a Deferred Forest Agreement, the first step towards a Regional Forest Agreement. The aim of the agreements is to remove the uncertainty over forest management and consequently provide greater security to the tens of thousands of people who rely on the native forests for their livelihoods. The agreement will also ensure that WA has a world-class conservation reserves network throughout the forests.

TREE CROP PLANTINGS A RECORD

The past year saw record numbers of commercial trees produced for planting during the winter of 1996.

As the State's major afforestation agency, CALM provided more than 22 million seedlings and cuttings for the Department's sharefarming partnerships and its own plantation and native forest operations. This was in addition to the millions of seedlings grown on farms using seed from CALM's stockpile of more than 200 million native seeds.

The number of seedlings was more than 10 per cent above the previous record number supplied from CALM's nurseries in Manjimup and Narrogin. CALM's elite Western Blue Gums and Tasmanian bluegums made up almost half the number of seedlings produced by the Department this year.

This year, CALM supplied 7.15 million Tasmanian bluegum seedlings and 2.76 million Western Blues for planting out under sharefarming agreements as well as in private plantings. Of these, 950 000 Tasmanian bluegums and 50 000 Western Blues were exported to South Australia and Victoria, reflecting the premier position Western Australia has established in researching and developing this species as the major farm tree crop.

Other seedlings and cuttings produced at the nurseries were karri (3.9 million), pine (4.0 million radiata and 2.3 million pinaster) and oil mallees (1.6 million). A further 1.46 million oil mallees were produced on contract for CALM by private nurseries at Canna, Kalannie, Cunderdin, Narembeen and Esperance.

PUBLISHING NATURALLY

During the year the Department built on a fine track record of quality publishing with the launch of several new books, including *Dive & Snorkel Sites in Western Australia*, aimed at helping people discover Western Australia's amazing marine environment.

The book was designed to make diving more accessible for snorkellers and novice divers, while still offering challenges to the more experienced underwater enthusiast. It features a range of fantastic dive experiences, from the whale sharks of Ningaloo to the second biggest divable wreck in the world, and none of the sites is in depths greater than 18 metres.

Next came the *BUSH BOOKS* series, pocket-size field guides with full-colour photographs and detailed descriptions which are aimed at inspiring residents and visitors to Western Australia to take a greater interest in the State's natural environment. The first seven in this ever-expanding series were launched in February 1996, and featured *Birds in the Backyard*, *Mammals of the South West*, *Whales and Dolphins of WA*, *Common Plants of the Kimberley*, and *Common Trees of the South-West*, *Common Wildflowers of the South-West Forests* and *Common Birds in South-West Forests*.

A further three titles were published in June: *Hazardous Animals of North-Western Australia*, *Common Birds of the Kimberley*, and *Mammals of North-Western Australia*. New titles will focus on different regions throughout the State, and eventually every region will have its own complete set of *Bush Books*.

A slightly larger tome, featuring the diverse plants and landscapes of the Dampier Peninsula, was launched in April 1996. *Broome and Beyond: Plants and People of the Dampier Peninsula* is the culmination of 10 years' work for its authors and local contributors. It draws on Aboriginal as well as European botanical knowledge to provide a user-friendly guide to the plant life of one of Western Australia's most spectacular regions. The book includes descriptions and usages of more than 700 local plant species, including some that have never been recorded in the area before.

All of these books are available from bookstores, tourist information centres, the RAC, and CALM.

INNOVATIONS IN COMMUNICATIONS

Western Australia's 'megadiversity' of natural attractions went 'online' to the rest of the world in April. *NatureBase*,

the new Internet home page developed by CALM, provides access to a wide range of information about the State's natural attractions, including details on national parks and marine conservation areas, the distinctive native forests, nature conservation programs and tourism.

People can use *NatureBase* to access CALM's information and education programs. For example, students can learn about WA's threatened wildlife species and what is being done to conserve them through the *Western Shield Action Pack*. *NatureBase* also includes a mailbox and a 'Bookshop' through which people can order books on WA's natural environment produced by CALM.

The *NatureBase* Internet address is:

<http://www.calm.wa.gov.au/>

CALM's ongoing programs of educational opportunities for schoolchildren expanded during the year with the opening of the Catchment Carer's Trail in The Hills Forest, Mundaring. The Trail, a joint project between the Department and the Water Corporation, provides students with an opportunity to understand how forests are managed for a variety of uses, including water catchment protection. The theme is 'Catchment Sharers must be Catchment Carers'.

The excursion is also a key element of CALM's innovative schools programs, including Discovering The Hills Forest, which has hosted more than 2000 students in the past three years. In the first six months of the trail opening, more than 1500 primary school students explored its two-kilometre length, finding out about management issues such as salinity, erosion, dieback, fire, timber production, mining, nature conservation and water supply.

The trail activities also tie in with other school programs such as the Water Authority's Water Education Topic sheets and the National Soil Conservation Program's Landcare for Kids kit.

CALM's series of colourful newspapers, covering conservation features in particular regions, also was extended during the year with editions published to cover the Goldfields and the karri country. An updated version for the Kimberley also was released.

WILDLIFE ON THE MOVE

Successful predator control programs, proactive wildlife management techniques, and occasional rescue operations, have seen CALM coordinate the transfer of a range of native species by land, sea and air during the year.

Rehabilitated quendas (southern brown bandicoots) from the Central Forest Region were released into ideal habitat on Leschenault Peninsula, while others were temporarily relocated from Mt Barker to Dumbleyung to make way for the realignment of Albany Highway.

Two lots of endangered loggerhead turtles were returned from Perth to their tropical home waters near Exmouth, after having been caught in the strong Leeuwin current and swept onto South West beaches. The first group travelled aboard *HMAS Swan* (on its way to naval exercises in the area), while the second group flew north with Ansett.

Ten numbats from the thriving population at Dryandra Woodland were translocated to the Dragon Rocks Nature Reserve near Hyden, as part of the Numbat Recovery Plan.

Also, 20 boodies (burrowing bettongs) from Shark Bay's Bernier Island travelled 3 500 km by land, sea and air, to establish a new population at the Yookamurra Sanctuary in South Australia.

CALM PRESENCE IN FREMANTLE

As the year in review drew to a close, an exciting new phase for the Department in the areas of marine management, nature-based tourism and Aboriginal cultural tourism opened with the commissioning of CALM's offices at Fremantle.

The new public face of CALM within Fremantle's historic precinct is *WA Naturally*, an outdoors and nature information centre that fills the ground floor of premises at 47 Henry Street. *WA Naturally* invites visitors to learn more about Western Australia and its unique wildlife by providing a point of contact between CALM and the community. As well as being a great source of nature information for locals, tourists and the nature-based tourism industry, it is a showcase for Western Australia, offering top-quality publications and merchandise.

WA Naturally also provides visitors with access to CALM's new Internet site, *NatureBase*, with specialist information on every aspect of conservation and land management in WA. Upstairs, the Marine Conservation Branch, and Swan Region Marine Operations Group, represent a significant addition to Fremantle's maritime flavour.

CALM's Aboriginal Cultural Tourism Unit is also based in the Fremantle office. Given the city's status as a tourist Mecca, the location is ideal for lifting the profile of Aboriginal culture and heritage in the State's growing nature-based tourism industry.

REACHING FOR THE STARS

After 100 years of service to science and the people of Western Australia, the Perth Observatory became part of CALM's Science and Information Division in January 1996.

The Observatory is one of the oldest continually operating scientific institutions in the State, and the only state-funded observatory left in Australia. Within the Science and Information Division, it will benefit from an infrastructure that is supportive of science and research. CALM's computer network support will help the Observatory attain world's best practice in astronomical research and education, as well as opening many educational avenues on the burgeoning Internet.

In June, the Observatory hosted the 30th Annual General Meeting of the Astronomical Society of Australia. It was the first time Perth had been chosen to host this forum, which brings together astronomers from around Australia. Key discussions included plans for an observatory in Antarctica, recent findings on the age of the universe, and asteroids and comets beyond Neptune. A public lecture was held at the Hyatt Hotel dealing with the question: 'How old are the stars?'

Japanese amateur astronomer Yuji Hyakutake also paid a visit to Perth. Mr Hyakutake became something of an international celebrity during the year, after discovering two comets in one week—one of them the brightest to come near earth for 20 years.

NEW FACILITIES FOR VISITORS

The management and appropriate development of some of the State's best tourist attractions has been one of the key challenges that CALM has faced during the year. Reconciling visitor demands and the needs of native wildlife is a balancing act that is constantly addressed. The underlying goal continues to be long-term maintenance of the natural attraction, and this requires thorough planning and coordination.

Throughout the State, work to maintain and improve visitor facilities has been carried out, ranging from installation of a new walk trail that winds up the 1 235 metres of Mt Bruce in the Pilbara's Karijini National Park, to the launch of the State's first radio drive trail along 25 km of track in the Dryandra Woodland.

CALM also opened the third in a 'trilogy' of lookout trees in the State's southern forests. The Dave Evans Bicentennial Tree in Warren National Park joined the renowned Gloucester Tree at Pemberton and the Diamond Tree south of Manjimup, as the only lookout trees open to the public to climb.

The fairy penguins of Penguin Island also benefited from CALM's long-term management planning. They were moved into a new viewing facility on the island, specially designed to minimise disturbance, while still allowing visitor access. These 1 200 little penguins form the largest breeding colony of these birds in WA. Their new home, 'The Penguin Experience' wildlife discovery centre, was built by CALM in a cooperative project that enjoyed local community support, as well as financial assistance from the federal Government and Kodak Australasia.

VALUE-ADDING FOR THE FUTURE

Value-adding to the State's distinctive native timbers through downstream processing was a major objective of the Timber Strategy, released in 1987 and reinforced in the revised Forest Management Plan adopted by Government in 1994. The strategy and the plan recognised the value of WA's native forests and the need for them to be sustainably managed. Both documents also recognised that for the timber industry to survive and grow, it needed to shift its dependence from the green structural market to supplying more valuable products.

The industry is showing that it, too, acknowledges this is the way of the future, and now more than 50 per cent of the jarrah sawlog output is being kiln-dried, a process

which is among the first steps towards producing higher value timber products.

Research by CALM at its Timber Utilisation Centre in Harvey has played a key role in assisting the industry achieve this target. Low-cost, low-energy but highly efficient solar-assisted kilns developed at the Centre have now become one of the techniques smaller sawmills are using to add value to their native timber output.

The technology was acknowledged during the year when the kilns were awarded an Australian Design Award by the Australian Design Council and two Energy Efficiency Awards sponsored by the Office of Energy. An Australian Design Mark also went to VALWOOD®, a process developed by CALM to create high value panels out of small sawlogs.

CALM research into value-adding processes for marri and karri was also recognised when Perth manufacturer BVR was awarded a Furniture Industry Association of Australia award for furniture made from feature-grade marri. CALM is now assisting small furniture manufacturers to obtain ongoing supplies of kiln-dried select and feature-grade marri for local and export markets.

Nature Conservation

Management Program I

Our objective is to conserve indigenous plants, animals and ecological processes in natural habitats throughout the State.

This Program involves the production and implementation of area management plans, policies and management programs for wildlife (fauna and flora) conservation and protection. It also involves research into wildlife and ecological communities and regulation of human activities which involve protected wildlife, including aviculture, commercial wildlife interactions (e.g. whale watching) and scientific research licensing, as well as encouragement for conservation initiatives on private property and roadsides, prevention of illegal taking of protected wildlife, emergency actions such as rescues of stranded whales or oiled seals, and public information and liaison programs.

Wildlife management programs are developed for species and communities which are threatened, are commercially exploited, or have a high public profile or public interaction interest, according to the principles of ecological conservation and sustainability.

Lands and waters are reserved and managed to conserve viable representative samples of the State's natural ecosystems and their inherent natural processes, as well as for the protection of their flora and fauna.

The Program focuses on three areas:

1. conservation of the State's wildlife;
2. planning and research, to provide the basis for management;

3. public awareness and liaison, to enhance appreciation of nature conservation needs and processes, and private contributions to nature conservation.

The Roadside Conservation Committee operates within the Nature Conservation Program to coordinate and promote the conservation and effective management of native vegetation on road and rail reserves for the benefit of the environment and the people of Western Australia. CALM meets the cost of servicing the Committee and obtains contributions towards the Committee's operations from Main Roads Western Australia and Westrail.

CONSERVATION OF WILDLIFE

During 1995-96, the Australian and New Zealand Environment and Conservation Council (ANZECC) and its Standing Committee on Conservation were chaired by the Minister for the Environment and CALM's Director of Nature Conservation, and meetings of both were held in Perth.

Early in 1996, the National Strategy for the Conservation of Australia's Biological Diversity was published following endorsement by the Commonwealth and all State and Territory governments. The strategy was prepared by ANZECC with wide consultation.

CALM provided the representatives of the States and Territories on the formal Australian delegations to the meetings of the Convention on

HIGHLIGHTS

- Woylie taken off the State and Commonwealth threatened fauna lists (p. 11)
- 'Western Shield' fox control program for Western Australia (p. 14)
- Marine Conservation Branch established (p. 16)
- Twelve flora to be removed from the 'presumed extinct' list (this page)
- Critically endangered flora and fauna identified for recovery (p. 10)

Biological Diversity in Jakarta, Indonesia in November 1995, and the Ramsar Convention on Wetlands of International Importance in Brisbane, Queensland in March 1996.

Threatened and Rare Wildlife

The Endangered Flora Consultative Committee met during the year and recommended changes to the list of declared rare flora, which were subsequently endorsed by the National Parks and Nature Conservation Authority. The proposed changes have been forwarded to the Minister for the Environment for consideration, and include twenty additions, ten deletions, eight transfers from the 'presumed extinct' category to the 'extant' category, and ten nomenclatural changes.

The flora taxa that are 'presumed to be extinct' tend to be taxa that were collected in the early years of

DEFINITIONS

Declared Rare Flora—Extant Taxa: Taxa which have been adequately searched for and are determined to be either rare, in danger of extinction, or otherwise in need of special protection in the wild, and have been declared under section 23F of the *Wildlife Conservation Act 1950* to be 'rare flora'.

Declared Rare Flora—Presumed Extinct Taxa: Taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been declared under section 23F of the *Wildlife Conservation Act 1950* to be 'rare flora'.

Critically Endangered: Taxa (declared as rare flora) that are facing extremely high probability of extinction in the wild in the immediate future and are in need of immediate research and/or management actions.

Endangered: Taxa (declared as rare flora) that are not critically endangered but are facing a very high probability of extinction in the near future and are in need of urgent research and/or management actions.

Vulnerable: Taxa (declared as rare flora) that are not critically endangered or endangered but are facing a high probability of extinction in the wild in the medium-term future and are in need of research and monitoring.

Priority One—Poorly Known Taxa: Taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

Priority Two—Poorly Known Taxa: Taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

Priority Three—Poorly Known Taxa: Taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora' but are in need of further survey.

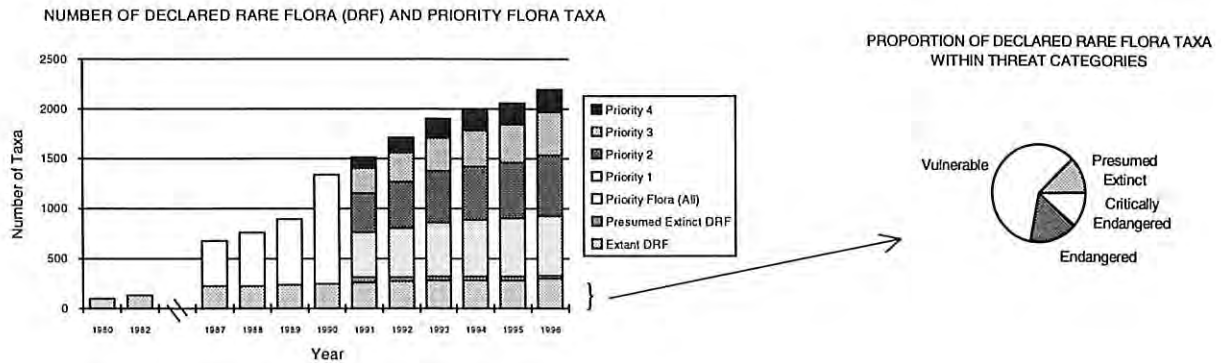
Priority Four—Rare Taxa: Taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.

European settlement, and which have not been collected again during the last 50 years or so, rather than taxa which are known to have been destroyed or disappeared from known locations in more recent times. This year, twelve flora taxa were recommended for removal from the presumed extinct list. Four were rediscovered during field surveys, while for a further four, recent specimens were found in the Herbarium collection during curatorial work. These taxa will now be the focus for field surveys to confirm their status in the wild. The remaining four have been determined by botanists to be invalid names, with the plants now considered to belong to more common species.

Since presumed extinct flora were first included in the declared rare flora notice in 1991, a total of 14 species have been rediscovered in the field, six have been found during Herbarium curatorial work, and nine have been removed through taxonomic revision. In this time, three species have been added to the presumed extinct list as targeted surveys have not been able to relocate them. The current number of presumed extinct flora stands at 27. This halving in the number of presumed extinct flora over the past five years is a significant achievement for the State's field and taxonomic botanists.

The Priority Flora List has also been revised with 155 taxa added as being in need of further survey before their status can be properly assessed. Surveys and taxonomic research of priority flora resulted in 15 being deleted from the list as they were not considered to be rare or threatened.

At 30 June 1996, 1 639 flora were listed as poorly known, and a further 227 as rare but not threatened. The breakdown and changes to the number of taxa declared rare (including both presumed extinct and extant) and as listed priority flora, are presented in the figure opposite.



Initial validation of the declared rare flora database has been completed. An analysis of land tenure on which declared rare flora populations occur is shown in the figure below.

Over two thirds of declared rare flora populations are found outside formal conservation reserves. The major categories of land, other than conservation reserves, on which declared rare flora populations are found are private land, local government road reserves and unvested Crown land. The conservation of declared rare flora in Western Australia is, therefore, dependent on liaison with the managers of lands that are primarily being managed for purposes other than conservation. This is also demonstrated by an analysis of the threats to declared rare flora populations, and the management and research actions required for the conservation of those populations, as depicted below.

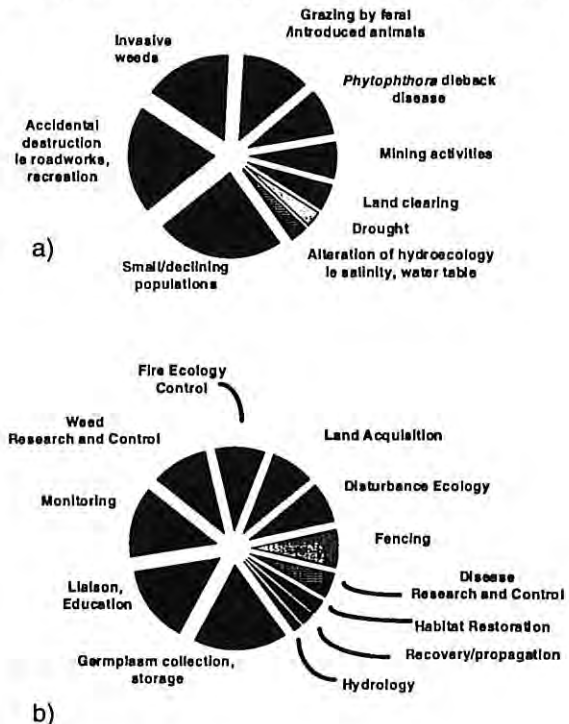
PROPORTION OF POPULATIONS OF DECLARED RARE FLORA BY LAND TENURE



Note: 'LFC' refers to lands vested in the Lands and Forest Commission which are predominantly areas of State forest, and 'NPNC' refers to lands vested in the National Parks and Nature Conservation Authority which are predominantly nature reserves, national parks and conservation parks.

The threat caused by *Phytophthora* dieback disease continues to be a major focus for flora conservation in the south west of the State. The Threatened Flora Seed Store, in conjunction with Kings Park and Botanic Garden, has established a seed store for taxa threatened by dieback, and other critically endangered or poorly known taxa. At 30 June 1996, the Threatened Flora Seed Store had 338 accessions from 147 taxa of declared rare flora and priority flora. Sixty-two of these taxa have collections from most of their range of provenances.

Proportion of Western Australian Declared Rare Flora with Populations: a) considered to be at risk from nine major threatening processes, and b) requiring attention for 12 major management or research actions



In the field, the development of techniques for the use of the dieback-inhibiting chemical, phosphonate, has extended its application from experimental to management situations. Eleven threatened flora species in the South Coast Region, and one in the Wheatbelt Region, have been treated by aerial spraying or with backpack sprays.

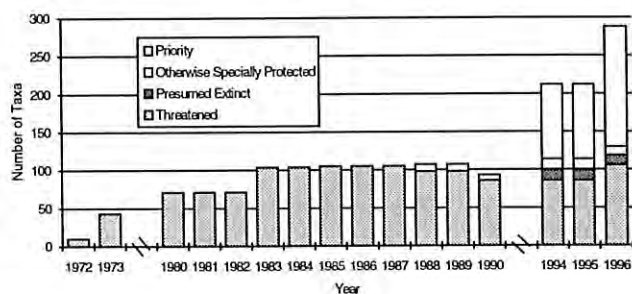
During the year the recommendations of the Threatened Fauna Scientific Advisory Committee to amend the gazetted list of specially protected fauna were endorsed by the National Parks and Nature Conservation Authority and the Minister for the Environment, and the new list was gazetted on 30 April 1996. There are now 106 taxa listed as threatened with extinction, 13 presumed to be extinct, 30 bird species specially protected because of their listing under the Japan–Australia Migratory Birds Agreement, and 11 otherwise specially protected. Of interest is the increase in listing of invertebrate species from 11 in 1994 to 24 in the current list. Changes over time in the numbers of threatened and priority fauna are shown below.

On 24 September 1995, the Minister for the Environment announced the results of the first ever ranking of Western Australia's threatened flora and fauna according to internationally accepted criteria developed by IUCN (the World Conservation Union). The ranking was carried out by a Scientific Ranking Panel comprising scientists from CALM and elsewhere. Forty-six taxa were categorised as Critically Endangered. Under CALM policy, Interim Recovery Plans are to be prepared within one year of a taxon being classified as Critically Endangered. Priority has been given to preparing Plans for 43 of these taxa that did not have existing Recovery Plans. The Minister for the Environment also announced a \$300 000 allocation for

Taxa ranked as Critically Endangered, as at September 1995

<i>Acacia pygmaea</i> ms	Dwarf Rock Wattle
<i>Caladenia bryceana</i> subsp. <i>bryceana</i>	Dwarf Spider Orchid
<i>Caladenia busselliana</i> ms	Bussell's Spider Orchid
<i>Caladenia elegans</i> ms	Elegant Spider Orchid
<i>Caladenia viridescens</i> ms	Dunsborough Spider Orchid
<i>Caladenia winfieldii</i> ms	Majestic Spider Orchid
<i>Calytrix breviseta</i> subsp. <i>breviseta</i>	Starflower
<i>Chamelaucium griffinii</i> ms	Griffin's Wax Flower
<i>Conostylis micrantha</i>	Small Flowered Conostylis
<i>Darwinia carnea</i>	Mogumber Bell
<i>Daviesia bursarioides</i> ms	Three Springs Daviesia
<i>Daviesia euphorbioides</i>	Wongan Cactus
<i>Daviesia microcarpa</i> ms	Norseman Pea
<i>Drakonorchis drakeoides</i> ms	Hinged Dragon Orchid
<i>Dryandra ionthocarpa</i> ms	Kamballup Dryandra
<i>Dryandra montana</i> ms	Stirling Range Dryandra
<i>Eremophila caerulea</i> subsp. <i>merrallii</i>	Bruce Rock Eremophila
<i>Eremophila nivea</i>	Silky Eremophila
<i>Eremophila veneta</i>	Metallic-flowered Eremophila
<i>Eucalyptus phylacis</i>	Meelup Mallee
<i>Eucalyptus rhodantha</i> var. <i>petiolaris</i>	Rose Mallee
<i>Geopsittacus occidentalis</i>	Night Parrot
<i>Grevillea maxwellii</i>	Maxwell's Grevillea
<i>Grevillea mcutcheonii</i> ms	McCutcheon's Grevillea
<i>Grevillea pythara</i>	Pythara Grevillea
<i>Grevillea scapigera</i>	Corrigin Grevillea
<i>Hemiantra gardneri</i>	Red Snakebush
<i>Hemiantra</i> sp. (Watheroo)	Colourful Snakebush
<i>Lambertia echinata</i> subsp. <i>echinata</i>	Prickly Honeysuckle
<i>Moggridgea</i> sp. BY Main 1990/24	Stirling Range Moggridgea Spider
<i>Myriophyllum lapidicola</i>	Chiddarcooping Myriophyllum
<i>Petrogale lateralis</i> ssp. nov. (S. Kimberley)	Black-footed Rock-wallaby (Kimberley subspecies)
<i>Pezoporus wallicus flaviventris</i>	Ground Parrot (western subspecies)
<i>Pityrodia scabra</i>	Wyalkatchem Foxglove
<i>Potorous tridactylus gilberti</i>	Gilbert's Potoroo
<i>Prostanthera carrickiana</i>	Carrick's Mintbush
<i>Pseudemydura umbrina</i>	Western Swamp Tortoise
<i>Pterostylis</i> sp. (Northampton)	Northampton Midget Greenhood
<i>Rulingia</i> sp. (Trigwell Bridge)	Trigwell's Rulingia
<i>Tetraheca deltoidea</i>	Granite Tetraheca
<i>Teyl</i> sp. BY Main 1953/2683	trapdoor spider, no common name
<i>Thelymitra dedmaniarum</i>	Cinnamon Sun Orchid
<i>Verticordia albidia</i>	White Featherflower
<i>Verticordia fimbrialepis</i> subsp. <i>fimbrialepis</i>	Shy Featherflower
<i>Verticordia spicata</i> subsp. <i>squamosa</i>	Scaly-leaved Featherflower
<i>Zyzomys pedunculatus</i>	Antina (Central Rock-rat)

NUMBER OF THREATENED, OTHERWISE SPECIALLY PROTECTED AND PRIORITY FAUNA TAXA



the drafting and initial implementation of these Interim Recovery Plans, from funds received by the State from AMRAD, an Australian company researching the anti-HIV properties of the compound conocurvone, which has been isolated from a species of Western Australian flora.

Interim Recovery Plans provide detailed, costed actions, including research actions, and are implemented over a three-year period. After the three years, the intention is to either be in a position to down-list the taxon or move to a full ten-year Recovery Plan.

Recovery actions for all 46 Critically Endangered taxa are coordinated by the Western Australian Threatened Species and Communities Unit (WATSCU), within CALM's Nature Conservation Division.

At the end of the year, the Department was running 23 recovery teams to coordinate the recovery of threatened species of plants and animals, and was represented on a further six national recovery teams led by other States. Recovery teams were established during the year for the western bristlebird and the dibbler. Work has continued throughout the year to implement these Recovery Plans, including for the western swamp tortoise, noisy scrub-bird, chuditch, Shark Bay mouse, white-bellied frog, Wyalkatchem foxglove, Trigwell's rullingia, Corrigin grevillea, matchstick banksia, Wongan triggerplant and rose mallee. Two recovery teams are in place for coordinating the recovery of threatened ecological communities at Lake Toolibin, and a new team was established during the year for the Holocene dunes at Port Kennedy.

CALM's Policy Statement No 29
Translocation of Threatened Flora

and Fauna was revised in July 1995. The objective for translocations is 'to conserve threatened animals and plants in the wild'. Species approved for translocations during 1995-96 included the numbat, boodie, quenda, Shark Bay mouse, western pebble-mound mouse, western swamp tortoise, western ringtail possum, Wyalkatchem foxglove, and matchstick banksia.

The Recovery Plan for the woylie has been successfully completed, with this species deleted from the threatened declaration under the Western Australian *Wildlife Conservation Act 1950*, and the endangered list under the Commonwealth *Endangered Species Protection Act 1992*. Woylies are confirmed from over 20 population sites in WA with a total population in excess of 17 000. It is now ranked under IUCN criteria as Conservation Dependent, and requires ongoing management, including the control of introduced predators, to prevent it from again becoming threatened.

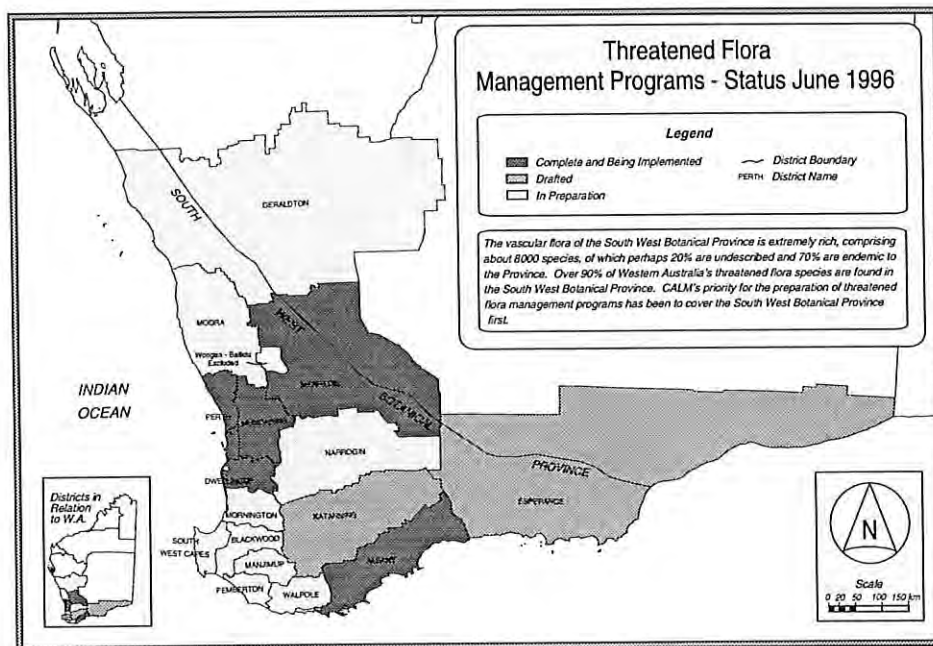
In addition to the taxon-specific recovery plan approach, Regional or District Threatened Flora Management Programs are also being developed. Four are complete and a further seven are being prepared. These programs operate within a CALM administrative area, and provide a summary for each threatened and priority flora taxon. They highlight threatening processes and set overall priorities and actions for management and research.

Following consideration by the National Parks and Nature Conservation Authority and approval by the Minister for the Environment, the Threatened Fauna Scientific Advisory Committee, the Endangered Flora Consultative Committee and the Threatened Flora and Fauna Scientific Ranking Panel are to be replaced by a single

committee to be known as the Threatened Species Scientific Committee. The new committee will review and make recommendations to the Minister, via the Executive Director, CALM and the National Parks and Nature Conservation Authority, on the threatened flora and fauna lists, and will rank those species listed according to IUCN categories of threat. The committee will also provide advice in respect of research and management arising from its review of lists and threat categories. Expressions of interest were advertised for representation on the new committee, and at the end of the year these were being collated for consideration and forwarding to the Minister.

Under the direction of WATSCU, work has progressed on the identification and databasing of threatened ecological communities (TECs) in the South West Botanical Province. The TEC database has been developed and more than 30 communities are entered on it. Communities are ranked according to the degree of threat. Recovery actions have commenced for some communities already ranked as Critically Endangered, including the Muchea limestone community and mound springs of the Swan Coastal Plain. Two properties containing these communities have been purchased by CALM, with financial assistance from the Australian Nature Conservation Agency under the National Reserves System Cooperative Program.

Consultation between CALM and non-Government organisations involved in threatened species and communities issues continued during the year with four meetings of the Threatened Species and Communities Consultative Committee.



Commercial Use of Wildlife

Management of the commercial harvesting of kangaroos continued throughout the year, with input from the Kangaroo Management Advisory Committee, and in accordance with the management programs approved by the State and Federal Ministers for the Environment for the period 1995–1997. Under these programs, commercial harvest quotas were set for each species for the 1996 calendar year. Kangaroo population aerial surveys were undertaken over approximately one third of the rangeland area normally surveyed in triennial surveys. Under a new scheme introduced by CALM, following the withdrawal of survey assistance from the Australian Nature Conservation Agency, the pastoral rangelands are to be surveyed at a rate of approximately

one third per year, to approximate the previous triennial surveys. As euros are difficult to count from the air, a baseline population estimate using aerial survey estimates corrected by trial ground truthing has been calculated. The resultant estimate is indicative at best as it uses a high correction factor and is more useful in indicating trends rather than absolute population size. The revised population estimates for the three harvested species of kangaroo are shown below, along with the 1995 commercial harvest quotas, 1995 commercial harvest, and the quotas set for 1996.

The management program for saltwater crocodiles and freshwater crocodiles in Western Australia was revised and approved by the State Minister for the Environment, and

at the end of the year was with the Federal Minister for the Environment. The management program covers all aspects of crocodile management, including crocodile population surveys and regulation of crocodile harvests, farming, processing and export.

Population estimates for non-hatchling (non-h) saltwater crocodiles, from spotlight and helicopter surveys undertaken by G. Webb Pty Ltd in July 1992 and Wildlife Management International Pty Ltd in July 1993, 1994 and 1995.

Year	West Arm	East Arm/ Ord River	Total
	non-h	non-h	
1992	198	379	577
1993	153	410	563
1994	100	370	470
1995	173	422	595

Under the management program for crocodiles in Western Australia, commercial harvests of live animals for farm breeding stock development, and limited harvest of eggs and hatchlings, can be approved. For management purposes these harvests are primarily restricted to the Cambridge Gulf area. Cambridge Gulf crocodile populations are monitored to ensure that the wild crocodile populations are conserved. Surveys were again

KANGAROO SPECIES	Red	Western Grey	Euro
1995 population estimate	935 600	1 084 500*	>168 000
1995 quota	220 000	60 000	10 000
1995 commercial harvest	105 306	61 125	7 153
1996 quota	160 000	80 000	10 000

* The western grey kangaroo estimate has been adjusted from the previously used standard correction factors by a factor of 2.5 following agreement

amongst national kangaroo experts, so that the revised figure gives a more accurate overall population estimate.

undertaken of saltwater and freshwater crocodile populations in the Cambridge Gulf-Lake Argyle area during the year. The Cambridge Gulf Saltwater Crocodile population estimates are presented opposite (based on late winter surveys).

A total of 6 945 fauna (other than damage) licences were issued during the year, a decrease of 5 per cent from the previous year (see Appendix 14). The decrease was due to general variability in licence issue, and could not be attributed to any specific factor.

The number of commercial flora licences issued increased in 1995–96 compared to 1994–95, with a 22.8 per cent increase in licences to harvest from Crown land, and a 14.4 per cent increase in the number of private properties licensed to sell protected flora (see Appendix 14).

The Western Australian Flora Industry Advisory Committee (WAFIAC) met twice during the year. The Committee made several recommendations to change the list of species which may be exported in accordance with the management program under the Commonwealth legislation controlling flora exports. The management program for the commercial harvesting of protected flora in Western Australia was approved by the Commonwealth Minister for the Environment following a major revision undertaken by the Department.

The intensive management of brown boronia harvesting has continued, with a further reduction in quotas from Crown land as a result of the death of plants in the wild due to successive dry summers. Following a recommendation from WAFIAC, it was decided to implement the first program of flora tagging in the 1996 boronia season, as a means of restricting the avenue for illegal marketing of boronia sprays.

Dryandra formosa and *Stirlingia latifolia* were also subject to specific management due to conservation concerns related to their harvesting.

ENVIRONMENTAL PROTECTION

Dieback, Mining and Weeds

Training in dieback disease management was provided to staff from Optus, Main Roads WA and Western Power. Technical support was provided to the Northern Sandplains Dieback Working Group.

Liaison with the mining industry continued through the Petroleum Environment Liaison Group and the Mining and Environment Group convened by the Department of Minerals and Energy, as well as directly with companies and peak industry bodies. Staff reviewed numerous annual reports for mining operations on CALM-managed lands, and assisted other agencies to review reports and proposals that impacted conservation values off reserves.

Comment was made on 21 formal assessments by the Environmental Protection Authority (EPA). A total of 105 mineral tenements were processed in consultation with the NPNCA and LFC, and appropriate conditions imposed. One new mining operation on conservation estate was approved for limesands on a mobile dune in a nature reserve south of Dongara. A total of \$2.8 million was received in mining compensation payments.

The development of completion criteria for bauxite mining operations was progressed through a joint CALM/Alcoa working group.

CALM signed three memoranda of understanding with mining companies holding pastoral leases. One, with Hamersley Iron Pty Limited in the Pilbara, is adjacent

to Karijini National Park, and the other two, with Western Mining Corporation and Dominion Resources Pty Ltd, are adjacent to the Wanjarri Nature Reserve in a poorly conserved area of the north-eastern Goldfields. The agreements will lead to integrated management of the pastoral leases with reserve management, and help protect the conservation status of various poorly conserved habitats.

The Department continues to pursue conservation opportunities by identifying land to replace or offset mined land and bringing these to the attention of mining companies. For example, the largest remnant of an endangered ironstone community near Capel is now on land owned by a mining company, and is being managed for nature conservation with the intention that it will eventually become conservation estate. An area of private land containing the declared rare flora *Eucalyptus rhodantha* became a nature reserve during the year, after being purchased by a mining company and donated to the Crown.

CALM was represented on a working group to develop guidelines for offshore (marine) mineral exploration and mining consistent with Government policy for the offshore petroleum industry (the 'New Horizons in Marine Management' policy). As a consequence of applications for exploration of a coastal habitat at Roebuck Bay which is listed under the Ramsar Convention, staff assisted the Department of Minerals and Energy to define ecological boundaries in order to apply appropriate conditions.

The Department was closely involved with a committee developing a State Gravel Strategy. A report has been prepared and presented to the Ministers for the Environment and Transport.

Management of a major weed infestation of palms continued at Millstream-Chichester National Park. A management plan titled *Exotic Palm Control at Millstream-Chichester National Park: Interim Management Guidelines* was approved by the National Parks and Nature Conservation Authority. The Australian Trust for Conservation Volunteers assisted with the removal of Indian water fern from the Millstream waterways. Weed eradication was also commenced on the islands of the Dampier Archipelago.

Foxes and Other Feral Animals

Operation Foxglove, a fox-baiting program over the northern jarrah forest sponsored by Alcoa, has been successful, and resulted in the re-introduction and expansion of populations of the woylie (*Bettongia penicillata*) and other species. The woylie has now been taken off the threatened fauna list as a result of the success of this program.

The Minister for the Environment announced Western Shield, an expansion of feral predator control over five million hectares of CALM-managed land, predominantly in the south-west of the State from Kalbarri to Cape Arid, but also including selected areas in more remote locations. The program will control foxes and includes additional research into cat control.

The objective of Western Shield is to control introduced predators so that populations of native fauna can recover naturally, or through reintroductions of fauna back into their natural habitat.

CALM has prepared for the introduction and spread of Rabbit Calicivirus Disease into the rabbit population of WA. Fox baiting under Western Shield will address the possibility of prey switching as

rabbit populations decline. Funding of \$97 000 has been received from the Australian Nature Conservation Agency specifically for the conservation of identified native fauna that may be at risk from prey switching by foxes.

Research into cat control has also continued, with a cat bait being developed and trialed on the Nullarbor and Peron Peninsula. Up to 80 per cent kill rate has been achieved, which is encouraging for future cat control operations. Eradication of cats on Serrurier Island was successfully undertaken.

The rat and cat eradication program 'Montebello Renewal' commenced during the year, with funding from CALM and the Federal Government, and supported by WAPET, Apache Energy, ICI Chemicals, ACI Plastics and Selleys. The project, once successful, will allow for the reintroduction of native fauna to the Montebello Islands Conservation Park. CALM staff have volunteered annual leave time to participate in the control program.

A draft management plan for feral animal control in the Pilbara Region was prepared during the year.

The Department has continued to make a significant contribution to goat control programs in conjunction with Land Conservation District Committees. A total of 3916 goats were removed in joint CALM/LCDC helicopter shooting programs involving CALM-managed land. A review of the goat eradication program was commenced by Government.

Implementation of Project Eden on the Peron Peninsula has continued, with a feral animal barrier fence being erected at the Taillefer Isthmus to prevent reinvasion of the peninsula after goat, fox and cat control programs.

CALM also contributed to cattle and donkey control programs on the Mitchell Plateau and at Karijini in the north of the State, while pig trapping and shooting by volunteers continued in State forest in the south.

GENERAL WILDLIFE MANAGEMENT AND RESEARCH

Departmental officers attended 26 reported whale and dolphin strandings throughout the year, involving both live and dead animals. These strandings involved 27 individual animals, representing nine species, including three species of *Stenella* dolphin, Cuvier's beaked whale and pilot whale. The most commonly stranded cetacean was the bottlenose dolphin. Three live stranded animals were successfully returned to the sea. Officers also attended 15 pinniped strandings throughout the year, including four sub-antarctic fur seals, two leopard seals and nine Australian sea lions. In most cases, these animals were ill or injured, and nine died of natural causes. Two Australian sea lions returned to the sea unaided, two sub-antarctic fur seals were rehabilitated and successfully returned to the sea, and two leopard seals were unable to be assisted, and were euthanased.

Two bottlenose dolphins, two humpback whales and a leathery turtle were entangled in fishing gear (lines, nets or cray pot ropes). All five animals were successfully released or freed themselves.

In December 1995 reports were received of blind kangaroos in the northern Goldfields. Tests revealed that the animals were affected by the same virus which had been shown to cause blindness in kangaroos in eastern Australia since early 1994. The virus affects mostly western grey kangaroos, and a small number of red kangaroos and euros. The virus has been shown to be naturally occurring, and affects only a small

proportion of the population. By late January 1996, reports of blind kangaroos were received from most parts of the south-west land division. In April reports were also received of blind western brush wallabies (*Macropus irma*). The number of brush wallabies affected is very small and the virus is not expected to have a significant effect on any of the kangaroo or wallaby species.

Biological surveys of remote areas of the State continued, with the completion of the Irwin-Gascoyne survey, and commencement of a survey of the Little Sandy Desert. Specific surveys were undertaken of Mt Elvire pastoral lease, Rowles Lagoon, Lake Boonderoo wetlands, Great Sandy Island Nature Reserve, the Helena Aurora Range and Bernier and Dorre Islands. Surveys associated with the Fitzgerald River Biosphere Project have also been undertaken with active community support, resulting in the preparation of a report and recommendations to protect biological values identified in the region around the Project area.

Wildlife Interactions, Licences and Compliance with Legislation

The Department ensures that wildlife-based activities are licensed, in accordance with the Wildlife Conservation Act 1950, and conducts monitoring and investigations to ensure compliance with legislation and the licences issued.

A total of 53 licensed whale-watch boat-tour operators conveyed 40 492 passengers from various centres around the State, but principally from Perth (78 per cent). While these tours were primarily based on humpback whales, southern right whales are the focus of whale watching activities in the Albany area. The number of passengers conveyed by metropolitan-based commercial operators increased by

15 per cent, and the number of boat trips increased by 42 per cent to 419. Passenger numbers in country centres increased by 238 per cent, and the number of boat trips increased by 250 per cent to 547. Whale shark tours were overseen in Ningaloo Marine Park, where 15 licensed operators conveyed passengers to dive with whale sharks. Dolphin interactions continued at Monkey Mia, Cockburn Sound and Bunbury.

The total number of damage licences issued for birds was 248, a decrease from 316 in 1994-95. The number of damage licences for emus decreased from 161 in 1994-95 to 15 in 1995-96, reflecting a substantial decline in emu pressures in the north-eastern wheatbelt (see Appendix 15).

During the year, Departmental officers contacted over 2 500 people about offence-related matters. Advice and guidance were provided to the majority of these people. Verbal warnings were issued as appropriate, and 279 offences under the Wildlife Conservation Act and Regulations were the subject of written reports. At 30 June, action in 135 matters has been completed. A summary of reported offences is presented below (see also Appendix 16 for further details of offences).

Twenty-seven reports of problem crocodiles were received by officers in the Kimberley. Licences to

remove saltwater crocodiles from the wild were issued because of the threat they posed to public safety.

Area Management

Draft management plans were prepared for Nambung National Park, Wanagarren, Nilgen and Southern Beekeepers Nature Reserves; Shoalwater Islands Marine Park; Canning River Regional Park; Karijini National Park; and Leschenault Peninsula. Final plans were approved for the West Cape Howe National Park, Yalgorup National Park, Lesueur National Park and Coomallo Nature Reserve, Purnululu National Park, Dryandra Woodland and Two Peoples Bay Nature Reserve. Each of these areas have significant nature conservation values that will be managed under the strategies and recommendations in the plans.

CALM contributed to the State Planning Strategy, being prepared by the Ministry for Planning, which includes identification of the need to extend the conservation reserve system, including the marine reserve system.

The management of the Shark Bay World Heritage Area progressed with:

- development of a draft Strategic Plan in consultation with other agencies and community and interest groups;

1994-95 Reported Offences			1995-96 Reported Offences	
	30-6-95	Revised	30-6-96	
Total Offences Reported	236	248	Total Offences Reported	279
Convictions	11	35	Convictions	32
Dismissals	0	2	Dismissals	0
Letters of Warning	63	70	Letters of Warning	63
No further Action	19	61	No further Action	34
Pending	143	80	Pending	144
Total Fines	\$10 000	\$17 250	Total Fines	\$11 750
Total Costs	\$1 118	\$8 335	Total Costs	\$3 259

Note:

Figures for 1994-95 reported offences are updated from those included in last year's report under the Revised column.

- funding of \$179 000 from the Commonwealth Government for management projects, including biological studies for loggerhead turtles, dugongs and seabirds, an oceanographic study, implementation of a zoning plan for the Shark Bay Marine Park, construction of fire buffers for habitat protection, and implementation of goat control measures within the World Heritage Area;
- baseline studies and monitoring of visitor sites in the Shark Bay Marine Park to establish and initialise a monitoring program to ensure that recreation and tourism activities are ecologically sustainable;
- the advertising for expressions of interest for membership to the Shark Bay World Heritage Scientific Advisory Committee and Shark Bay World Heritage Community Consultative Committee;
- continued renegotiation of the State/Commonwealth agreement for the World Heritage Area; and
- facilitating a field visit by, and appearing at a public hearing of, the House of Representatives Standing Committee on the Environment, Recreation and the Arts inquiry into the management of World Heritage Areas.

Off-reserve Conservation

The Department was involved in the nature conservation assessment of applications to the State Remnant Vegetation Protection Scheme (RVPS), and the Commonwealth Save the Bush Community Grants component of the National Landcare Program. The increase in funding to \$900 000 per year for the RVPS, following the announcement by the Minister for Primary Industry in May 1995, led to an increase in the level of interest in this fencing subsidy scheme.

During the year the establishment of a pilot Land for Wildlife Scheme was approved, and the coordinator's position for the Scheme was advertised. The Scheme is intended to operate in a similar manner to that which currently operates in Victoria, and liaison has occurred with the Victorian agency responsible for the operation of the Scheme there, for the joint use of materials to ensure that a national identity for the Scheme is created.

The Department has been represented on the ANZECC Working Group on Nature Conservation on Private Land, attending two meetings during the year. The working group prepared a document summarising the current status of nature conservation on private land, including legislative frameworks and incentive programs.

The Department has also been closely involved with an interagency working group in the development of the documents 'Salinity: a Situation Statement for Western Australian' and the 'Western Australian Salinity Action Plan'. These documents will provide the background and recommended actions for Government to combat dryland salinity in the south-west of the State.

MARINE CONSERVATION

The Marine Conservation Branch, which includes four marine scientists who were transferred from the Department of Environmental Protection, was established within CALM's Nature Conservation Division. The Branch's primary roles will be to implement a Statewide system of marine reserves and improve the scientific basis for management of existing reserves, consistent with the Government's 'New Horizons in Marine Management' policy. The report of the Marine Parks and Reserves Selection Working Group (commonly referred to as the

'Wilson Report') is being used as a basis for the selection and prioritisation of new reserve proposals in preparation for public consultation under the CALM Act. Preparation of legislation to support this policy was the subject of consultation with relevant agencies and the issue of drafting instructions. The proposed legislation will include provision for a management zoning scheme applicable to marine parks and the establishment of a new multi-use marine reserve category to be known as a 'Marine Management Area'. It will also establish the Marine Parks and Reserves Authority and the Marine Parks and Reserves Scientific Advisory Committee.

Fundamental information requirements for the selection, zoning and effective management of marine reserves include a proper understanding of the types and distribution of key habitats; the key biological processes; the oceanography; the nature and loadings of contaminant inputs; and trends in recreational and commercial usage patterns.

These data are being acquired by reviews of existing studies or by direct field investigations. Collaborations with other government agencies and academic/research organisations are pursued to align, where possible, their research objectives with the Department's conservation objectives. Examples of projects current at 30 June:

- a review of the whale shark tourist industry in Ningaloo Marine Park to develop a management framework that facilitates long-term sustainability of human/whale shark interactions, and improves the scientific basis for management of this significant nature-based tourism activity;
- the adaptation of CALM's Geographical Information Systems (GIS) to help develop a marine reserve implementation

program. Existing information will be reviewed, acquired and consolidated and stored in digital format in a marine GIS;

- preliminary consultation over the reserve implementation process for the Jurien Bay marine reserve proposal, and visitor surveys, with the goal of establishing a formal Notice of Intent to declare the area a multiple-use marine park;
- the Marine Conservation Branch, in collaboration with CALM's South Coast Region, has commenced a study along the south coast that will contribute to a regional classification of proposed marine reserve areas, according to ecological, economic and cultural criteria, and will provide recommendations on the integrated management of adjacent terrestrial and marine reserves; and
- review of the dolphin feeding and interaction, and a study into the water quality, at Monkey Mia.

THE HERBARIUM

CALM's WA Herbarium mounted 17 947 new specimens, adding them to its database. This high figure has been the result of the effort of the Herbarium volunteers group who have concentrated on the specimen backlog in order to ensure that the information about these specimens is available on corporate databases.

The total number of records in the WAHERB specimen database at 30 June 1996 was 374 356 and is comprised of the following numbers of specimens of all the plant groups curated in the State collection:

algae	4 641
mosses	3 000
liverworts	530
fungi	5 515
lichens	3 440
gymnosperms	1 120
monocotyledons	54 037
dicotyledons	302 073
Total number of databased specimens	374 356

The Western Australian Census of Plants (WACENSUS) is an electronic database of WA plant names, both current names and synonyms. The Census is a CALM corporate database which ensures that names of plants are up-to-date and this information is easily accessible to users. It is a key component of the effort of the Species Resources Section of the Science and Information Division. The names database has a total of 17 023 records. The number of vascular plant species names in current use is 9 056 in 1 500 genera and 216 families.

WACENSUS underpins the conservation role of the Herbarium and is now fundamental to three other departmental databases. These are WAHERB (Western Australian Herbarium specimen database), SEDIT (a species editing utility database) and CALM's Declared Rare and Priority Flora database. WACENSUS is frequently downloaded to SEDIT, ensuring that users access current names and can deal with any relevant name changes. Work is still in progress to fully link the WAHERB and WACENSUS databases. Once this is completed all new Herbarium collections will only be allocated current and valid names; spelling anomalies of names and authors will be avoided.

The 13 000 plant specimens of the Albany Regional Herbarium were databased during the year, and are being electronically linked to CALM's Herbarium in Como. Duplicate specimens from Albany have been sent to the Western Australian Herbarium as part of the vouchering of all specimens held in regional herbaria. This material, which was mostly collected by the Albany Wildflower Society, has extended knowledge of the south coastal flora. To date, two species previously thought to be extinct have been revealed as being recently collected in the Albany region.

There were 2 708 visitors to the Western Australian Herbarium, and a total of 3 304 plant specimens were identified for researchers. Specimen loans were transacted with 92 national and international institutions, with 2 790 WA specimens being loaned, and 7 539 herbarium specimens received on loan from other herbaria. Also, 1 370 herbarium specimens were distributed on exchange to other institutions, and 2 630 herbarium specimens of WA flora were received from other institutions to add to the collection.

The public access Reference Herbarium now comprises 9 820 specimens vouchered and linked to a databased specimen, in the main herbarium collection. It was consulted by 867 recorded visitors, including CALM staff, tertiary students and amateur and professional botanists.

Volunteers continue to strongly support the herbarium effort, notably in relation to dealing with the large historical backlog which required mounting, labelling, databasing and incorporation into the Collection. Some volunteers are specialists in cryptogamic botany; the bryophyte and fungal collections are largely curated by experienced, retired specialists.

The Herbarium completed a volunteer training program during the year. A series of ten training sessions were given by Species Resources Section and Herbarium staff and concentrated on methods of identifying plant specimens as well as herbarium curation. These volunteers are now assisting in a new program designed to help Landcare and other conservation groups in the country to identify material and develop small field herbaria where names can be updated to ensure that current names are readily available. Landcare and other groups in the country are being trained to submit

well-annotated herbarium specimens to add to the State collection so that it is more comprehensive.

ROADSIDE CONSERVATION COMMITTEE

November 1995 marked the 10th anniversary of the formation of the Roadside Conservation Committee (RCC). A booklet entitled *Roadsides . . . the Vital Link* was produced to commemorate this occasion. This booklet documents the many achievements of the first decade of the RCC in Western Australia.

Mr J Blyth (CALM, Chairman), Mr G Norwell (Deputy Chairman, Main Roads WA), Cr I Purse and Cr J North (WA Municipal Association), Mr B Loney (Greening Western Australia) and Mr K Saunders (Western Power) retired during the year. Mr Blyth, Cr North and Mr Loney were long-serving members of the RCC, having joined it in 1986. The contribution made by all retiring members has been considerable in facilitating interagency collaboration on roadside conservation issues.

New representatives on the RCC are Mr G Wyre (Chairman, CALM), Ms A Napier (Main Roads WA), Ms D Redreau (Greening Western Australia) and Mr C Morgan (Western Power). Replacement members for the retiring local government representatives are still to be nominated by the WA Municipal Association.

The commitment of the RCC to its ongoing mapping of conservation values of roadside vegetation has continued, with approximately 25 per cent of rural roads within the

South West Land Division being mapped. These maps provide Local Government Authorities and community groups with a valuable planning and management tool. This is particularly so when the information is viewed in conjunction with data from other agencies, such as Agriculture WA's remnant vegetation data.

The RCC continued to provide training workshops for local government personnel on roadside conservation matters. During the year, workshops were held at Gnowangerup and Bindoon with representatives from adjoining local government authorities also participating. In October 1995, the RCC and the Science and Information Division of CALM held a Bridal Creeper Symposium. This symposium provided a forum for natural resource managers, scientists and community members to discuss the control and ecology of this important environmental weed. The Symposium proceedings were published in the *Plant Protection Quarterly*. They have subsequently been reprinted with the proceedings of the 1993 *Watsonia Workshop*.

A paper entitled 'Roadside Corridors and Community Networks', written by Mr J Blyth and Mr D Lamont for a conference held at Geraldton in May 1994, was published in *Nature Conservation 4: The Role of Networks* (1995), by Saunders, D A, Craig, J L and Mattiske, E M (eds), Surrey Beatty and Sons, N.S.W.

The RCC Roadside Award, which is presented annually to individuals or organisations who have illustrated

sympathetic management of rail or roadside vegetation, was presented by the Minister for the Environment at the Local Government Conference to the Shire of Wickpin for 'ongoing commitment, initiative and achievement in roadside conservation'. The Minister also presented roadside vegetation maps to the Shires of Bridgetown-Greenbushes, Chittering, Capel, West Arthur, Victoria Plains, Beverley, York and Toodyay.

Liaison with government agencies, local government and community groups on roadside conservation issues has continued to be a prime focus of the RCC. The Executive Officer has attended a number of country centres to convene roadside mapping workshops and provide information regarding the value and management techniques of roadside vegetation. The RCC is now providing Flora Road signs to local government authorities to encourage their participation in the registration and protection of high conservation roads.

The RCC has also undertaken a sponsorship agreement with the Perth Zoo to provide visitors to the Zoo with a 'demonstration roadside'. Approximately 75m of roadside in the vicinity of the Zoo's Harmony Farm is being planted with many species of native flora, including some declared as rare. It is envisaged that the display will introduce zoo visitors to the many values associated with roadside flora, such as wildlife corridors, rare flora, tourism and aesthetics.

Forest Resources

Management Program 2

Our objective is to sustain, regulate and profitably manage the forest resources entrusted to the Department in ways compatible with conservation and other management objectives.

The program includes sustainable regeneration, protection, management and harvesting of native forests and plantations while maintaining or enhancing nature conservation, water, recreation, landscape or other values in the long term; managing the sandalwood industry on Crown land; and developing public awareness, understanding and community support for the Forest Resources Management Program.

FOREST MANAGEMENT

Detailed consultation with the Commonwealth Government continued towards the signing of a Deferred Forest Agreement and a scoping agreement for the Regional Forest Agreement. Under these agreements, the State will defer timber harvesting from specific areas of forest while comprehensive regional assessments are undertaken to identify biodiversity, old growth, wilderness, endangered species, national estate, world heritage and ecologically sustainable forest management as well as economic and social values. Although much of this work has previously been done within the Department, the Commonwealth processes continue to place heavy demands upon staff and other resources.

Locally, a downturn in the housing industry tightened the market for both softwood and hardwood sawn

timber. During this period, the jarrah sawn timber industry in particular has benefited from investment in value-adding and product diversification.

Business units within the program have consolidated during the year, including the commercialisation of Goldfields timber supply. In accordance with the Government's asset management policy, the Department sold a number of freehold properties in the Blackwood Valley which were not suited to growing pine plantations. Leases were signed with purchasers to secure the pine timber resources on those properties until clearfelling. Revenue from these purchases was used to retire debt incurred in past plantation development. A major milestone was reached with the first sale of bluegum woodchips from CALM plantations.

Excellence in development and research into solar-assisted timber drying kilns was recognised by the awarding of an Australian DesignMark by Standards Australia and one of the eight Australian Design Awards for 1995. The kilns also received two awards from the Western Australian Office of Energy, one for innovation and one for efficient use of solar energy. The VALWOOD® product was also awarded an Australian DesignMark.

NATIVE FOREST

State Forest Resources Business Unit

The State Forest Resources Business Unit is responsible for the commercial harvesting, associated regeneration and commercial sales of log timber from native hardwood on

HIGHLIGHTS

- Forest agreements close to completion (this page and pp. 20-21)
- Solar kilns and VALWOOD® win five awards (this page and pp. 20-21)
- Sandalwood industry restructure completed (p. 21)
- First sale of plantation-produced woodchips (p. 22)
- Western Blue Gum confirms predictions (p. 24)

State forests and timber reserves in accordance with the Forest Management Plan 1994-2003.

In 1995, 17 860 ha of jarrah forest were harvested with the following silvicultural objects:

	Hectares
Thinning	2 520
Release of regeneration	6 220
Establishment of regeneration	5 530
Single tree selection	1 660
Selective	1 310
Other	620
TOTAL	17 860

Regeneration of 1 270 ha of the above area was achieved by the commercial harvesting operations. Silvicultural objectives for a further 10 420 ha harvested in this or previous years were achieved by follow-up treatment.

In 1995, 2 410 ha of karri forest were clearfelled or cut to seed trees.

SILVICULTURE

The Jarrah Forest

Harvesting in the jarrah forest is undertaken using a variety of silvicultural objectives (silviculture is the art and science of establishing and tending forests). Where there is a predominance of vigorously growing trees, the stand is thinned; where this is not the case the stands are harvested with the object of regenerating them. This is achieved either by harvesting in a way that will release existing lignotubers to grow unimpeded into saplings; or, where there are inadequate lignotubers, harvesting to create a shelterwood under which seedlings are established. The proportion of each area that is harvested to each of these objectives, and the degree of intermixing, vary according to the existing stand structure and condition.

Regeneration was completed on 1 530 ha harvested in either this or previous years by the following methods:

	Hectares
Hand planted	1 490
Natural seed fall	40
TOTAL	1 530

Monitoring continued in the study of the effects of prescribed burning and timber harvesting on the jarrah forest ecosystem.

Disease in Native Forest

The presence of dieback disease (*Phytophthora cinnamomi*) and its predicted impact on the forest is mapped prior to operations such as harvesting, mining and the provision of public utilities such as roads, reservoirs and powerlines. Mapping is done either from interpretation of large-scale colour photographs or from intensive ground survey. In both cases interpretation is supported

by laboratory analysis of plant and soil samples. With this information and the implementation of strict hygiene measures, operations can proceed with minimal spread of the disease. Because of the potential of the disease to spread naturally, the maps have a limited reliable life. In some instances areas mapped several years earlier must be completely re-mapped before operations begin.

The Karri Forest

Karri forest harvesting is also dependent on the structure and age of the existing forest, though it is less complex than jarrah harvesting. Patches of even-aged

and vigorously growing forest which are greater than two hectares in size are identified for thinning. When the stand is old enough to yield saleable products, it is thinned to an appropriate density by commercial harvesting. No further tending is necessary.

During 1995–96 CALM staff mapped the presence and predicted impact of dieback on 31 930 ha of forest and rechecked the boundaries of 5 060 ha previously mapped. Interpreters under contract to Alcoa of Australia remapped 4 060 ha and rechecked the boundaries on 3 580 ha. CALM staff monitored the interpretation and mapping standards of this work.

A further 690 ha was mapped on a recoup basis for mining companies and other agencies.

Mature forests and forests of mixed structure created by past logging activities are harvested under a clearfelling system. Regeneration following harvesting is achieved within the following year or two by means of temporarily retained seed trees, by planting with nursery raised seedlings, or by broadcast seeding. Seed trees are the preferred method, but planting is used in the years when there are inadequate seed crops available in the karri forest. Broadcast seeding is only used to a limited extent.

Wood Utilisation

The CALM solar-assisted timber drying kilns were awarded an Australian DesignMark by Standards Australia. This was followed by one of eight Australian Design Awards given in 1995. The kilns also received two awards from the Western Australian Office of Energy, one for innovation and one for efficient use of solar energy. The kilns were developed to assist value-adding by drying appearance-grade timber from small regrowth eucalypts and plantation-grown timber. The Department awarded an exclusive license to GCD International Pty Ltd of Knoxfield in Victoria to manufacture, market and install these kilns within Australia. Royalties are being used in further research and development. Ongoing research included further refining of drying schedules for marri, karri and Tasmanian bluegum timber. Some commercial drying on

a fee-for-service basis was done to assist sawmillers who are planning to install kilns of their own for increased value-adding in the timber industry. Two additional solar kilns were built as part of value-adding to karri and marri.

Manufacturing of jarrah and bluegum VALWOOD® continued in a pilot plant at the Timber Utilisation Centre at Harvey. The process uses thin boards from small regrowth and plantation-grown eucalypt logs, and produces an edge- and face-glued panel which is used for furniture and furniture components. Further stability testing was carried out on 20 mm and 30 mm thick jarrah panels. The VALWOOD® product was awarded an Australian DesignMark by Standards Australia.

Basic research continued with assessment of wood quality and working properties of Wheatbelt-grown trees to identify species suitable for tree-planting on farms to provide a commercial return as well as ameliorating salinity effects. Staff continued their involvement in the Goldfields Timber Research Project, which is intended to develop a small but viable specialty industry based on a large area of woodland regenerated since early goldmining operations.

Log Timber Sales

The quantity of log timber harvested from Crown land was 1 422 379 m³, comprising veneer logs, sawlogs, specialty logs, poles, fencing, firewood and chiplogs.

Sandalwood Business Unit

In 1995–96 the sandalwood industry's restructuring was completed with the public tendering of the harvesting and carting contracts. The processing, marketing and export contract is running successfully.

Harvesting and carting (conducted on contract, including the full-time contractors, part-time pastoral and Aboriginal community contactors) resulted in production targets being achieved.

New initiatives under the sandalwood management plan include the purchase of Burnerbinmah Pastoral Lease, to achieve conservation through reservation, and expanding the Indian Sandalwood plantation in the Ord irrigation area. Improved inventory techniques are being used, permitting greater planning of operations.

The production of sandalwood for 1995–96 is shown below.

	1994-95	1995-96
From Crown land		
green sandalwood	1 024	926
dead sandalwood	871	974
Total	1 895	1 900
From Private Property		
green sandalwood	91	83
dead sandalwood	107	134
Total	198	217

Exports for 1995–96 totalled 1 827 tonnes compared with 1 568 tonnes the previous year.

PLANTATIONS

The plantations sub-program consists of a group of three business units. The group aims to maximise financial and environmental benefits by efficiently managing Western Australia's public plantation assets.

Softwood Business Unit

A total of 1 631 ha of State-owned coniferous plantation was established. This included 1 286 ha of second rotation and 266 ha of *P. pinaster* sharefarming as a new initiative on the Swan Coastal Plain north and east of Perth.

The total area of State-owned coniferous plantation at 31 December 1995 was 70 294 ha. See Appendix 3 for details.

Private afforestation companies reported establishment of 400 ha of *P. radiata* and 150 ha of *P. pinaster*. The total area of private pine plantations reported to the Department at 31 December 1995 was 17 238 ha.

Residue Production 1995–96 (tonnes)

Log Source	1993-94	1994-95	1995-96
Forest Residue			
from Crown land			
- Firewood	54 090	36 871	53 426
- Charcoal logs	57 052	95 423	86 017
from Private property			
- Firewood	339	1 294	8 100
- Charcoal logs	4 198	2 952	817
TOTAL	115 679	136 540	148 360
Sawmill Residue			
from Crown land	386 330	872 687	478 440*
from Private property	223	1 520	592
TOTAL	386 553	874 207	479 032

* July–Dec 1995 figures only, Jan–June 1996 data not yet available.

Sawmill figures for 6 months July–Dec 1994 published in the 1994–95 Annual Report have been updated to include January to June amounts.

Above data includes all sawmill residue produced for:- Solid wood, Bark, Sawdust and Shavings, Wood Chips, Edgings, and Other—for sale, own use and not used.

A two-stage inventory of the pine estate in the Central Forest region was undertaken during the year to provide improved timber resource estimates. With the analysis of data from silvicultural experiments, progress was made with an associated project involving the development of a new computer system to model the growth and yield of plantations.

The increasing demand for softwood log products flattened out during 1995–96 (see graph). Continued downward pressure on prices is expected, as the activity in domestic home construction is at a low level. There is also considerable pressure on prices for export of panel board. These factors will result in softwood stumpage revenue being reduced over 1996–97.

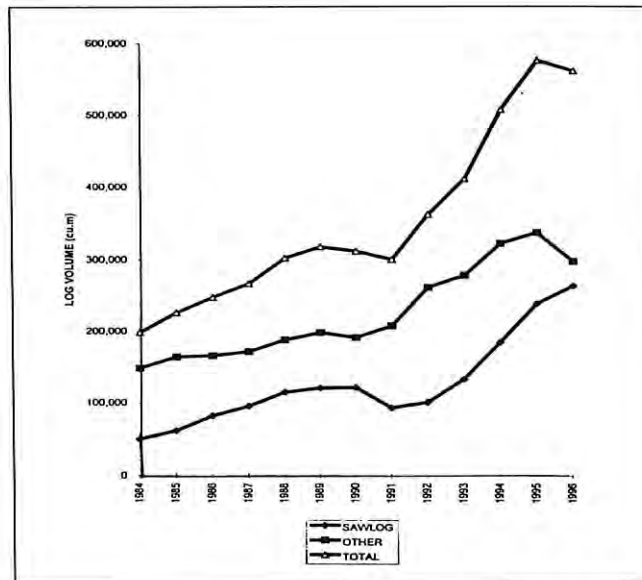
Hardwood Plantation Business Unit

The Government signed a new Agreement Act for the Bunbury Treefarm Project, a Joint Venture between two Japanese companies, Nippon Paper Industries and Mitsui and Co. This will seek to establish 20 000 ha of *Eucalyptus globulus* (bluegum) in the Bunbury region by 2006. The first plantings of 1 000ha occurred in winter, 1996.

The Hansol *E. globulus* plantation project has also increased its plantation target from 10 000 ha to 20 000 ha.

During the winter of 1995 CALM established a total of 3 550 ha of bluegum plantations on behalf of overseas investors Albany Plantation Forest Company of Australia Pty Ltd and Hansol Australia Pty Ltd.

The total area of State-managed hardwood plantation at 31 December 1995 was 21 449 ha. See Appendix 4 for details.



Softwood Log Production

The area of *Eucalyptus globulus* planted in plantations (larger than 5 ha) reported by commercial growers and contractors for 1995 was 11 400 ha. Of this about 1 100 ha were designed in belts, strips or as small integrated plantings to accommodate other concurrent primary production activity in association with the trees. A further 60 ha were planted to mixed commercial eucalypt species. The total area of private hardwood

plantation reported to the Department at 31 December 1995 was 39 695 ha.

The first sale of woodchips for pulp from CALM plantations began in 1996. A contract for 40 000 tonnes of *Eucalyptus globulus* woodchips was let, with CALM also contracting the harvesting and chipping operations. This will provide an opportunity to evaluate the next phase in development of this industry.

Hardwood Sawlog and Veneer Log Production from Crown Land 1995–96

Species	High Quality Sawlogs	1st Grade Sawlogs	Other Sawlogs	Total
	(m ³)	(m ³)	(m ³)	(m ³)
Jarrah	3 561	367 374	82 489	453 424
Karri	647	168 997	43 777	213 421
Marri	97	0	9 570	9 667
Other Species	1 545	1 905	639	4 089
Total	5 850	538 276	136 475	680 601
	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Jarrah	4 683	483 097	107 640	595 419
Karri	802	209 556	54 283	264 642
Marri	120	0	11 867	11 987
Other Species	1 610	2 395	837	4 843
Total	7 216	695 048	174 627	876 891

Softwood Production from Crown Land 1995-96

SPECIES		SAWLOGS				Sub-total Sawlogs	Veneer Logs	Industrial Wood*	Pine Rounds	GRAND TOTAL
		Scanner Logs	Mid Dia. Class	2nd Grade	Small					
Radiata	m ³	132 758	62 285	7 082	24 398	226 523	1 362	203 376	4 714	435 975
	tonnes	132 758	62 285	7 082	24 398	226 523	1 362	203 376	4 717	435 975
Pinaster	m ³	13 026	2 106	907	20 895	36 934	170	88 571	2 643	128 318
	tonnes	13 026	2 106	907	20 895	36 934	170	96 342	2 643	136 089
TOTAL	m ³	145 784	64 391	7 989	45 293	263 457	1 532	291 947	7 357	564 293
	tonnes	145 784	64 391	7 989	45 293	263 457	1 532	299 718	7 357	572 064

* including particleboard logs

Farm Forestry

The Farm Forestry Unit's role is to develop new tree crops and to provide objective information on all aspects of farm forestry.

The major current activity is the oil mallee project. This aims to create a dual-purpose (commercial plus landcare) tree crop for the Wheatbelt. The crop is mallee eucalypts which are high in leaf oil content. Eucalyptus oil has a small traditional pharmaceutical market but the project aims to reduce production costs, such that the excellent solvent properties of the oil might be developed for large-scale, low-priced industrial uses.

The project began commercial-scale planting in 1994 when 855 km of hedge was planted. A further 1 564 km was planted in 1995 and

it is projected that planting will double again in 1996. These plantings are concentrated into six separate Wheatbelt locations to minimise the overhead costs of harvest and oil extraction.

The project has demonstrated that large-scale growing of oil mallee does not present any great difficulty. The emphasis has now passed on to development of the harvest and extraction system, and product development. Oil mallees are ready for harvest at age 2 to 3, so it is hoped to begin cutting the 1994 plantings before the end of 1996.

Industry development has been facilitated by the formation of a growers association, the Oil Mallee Association. The Association is planning to become a company and to manage the harvest and extraction operations.

Plant Propagation Business Unit

During the 1995-96 season, the Plant Propagation Centre at Manjimup raised over 21 million seedlings and 500 000 cuttings, the largest quantity ever produced at the nursery. The breakdown of species is as follows:

Number of Seedlings and Cuttings ('000)

HARDWOOD

<i>E. globulus</i>	7 150
<i>E. diversicolor</i>	3 900
Western Bluegum	2 760
Oil Mallees	1 380
<i>E. marginata</i>	146
Mixed species	525

SOFTWOOD

<i>P. radiata</i>	4 000
<i>P. pinaster</i>	2 320

Over three million of these seedlings were for private sale.

Hardwood Chipwood Production from Crown Land and Private Property 1995-96

	Crown Land		Private Property		Total	
	(m ³)	(tonnes)	(m ³)	(tonnes)	(m ³)	(tonnes)
<i>Marri Logs:-</i>						
bolewood	492 484	603 430	72 880	89 538	565 365	692 968
branchwood	0	0	0	0	0	0
<i>Karri Logs:-</i>						
bolewood	133 385	161 723	15 993	19 002	149 378	180 725
branchwood	27 821	34 498	229	284	28 050	34 782
<i>Other Logs:-</i>						
bolewood	27	34	0	0	27	34
branchwood	0	0	0	0	00	0
Total	653 717	799 685	89 103	108 824	742 820	908 509

Production from CALM-Owned Hardwood Plantation 1995-96

SPECIES		Sawlogs	Veneer	Industrial Wood	Particleboard Logs	Chiplogs	Fencing Material	Firewood	TOTAL
Globulus	m ³	376		24		13 492			13 892
	tonnes	447		29		15 785			16 261
Muellerana	m ³	57							57
	tonnes	68							68
Mallet	m ³	487					347	1 056	1 890
	tonnes	579					413	1 056	2 048
TOTAL	m ³	920	0	24	0	13 492	347	1 056	15 839
	tonnes	1 094	0	29	0	15 785	413	1 056	18 377

New seeding equipment in the form of a pre-germinator and fluid-drill needle seeder were installed this year. Once appropriate techniques evolve through current trials, this equipment will help achieve more uniform germination of the seedlings.

The oil mallee project has moved ahead well, with a pilot scheme of producing seedlings in mini-plugs at Manjimup. The mini-plug seedlings are transferred to nurseries situated in the area targeted for mallee establishment, where they are later transplanted into the conventional trays and grown to maturity before being planted out. This system enabled seedlings to be established at the Manjimup Nursery where water quality is good, before being sent to nurseries where salinity levels in water are a problem for germinating seedlings.

The nursery in Kununurra is responsible for the production of all plant requirements for the sandalwood research program in the Ord River Irrigation Area. Over the 1995-96 season, the nursery produced approximately 8 000 sandalwood seedlings (*Santalum album*); 5 000 tropical timber trees from 12 genera, including Brazilian Mahogany (*Swietenia mahogani*), Indian Rosewood (*Dalbergia latifolia*), and West Indian Red Cedar (*Cedrela odorata*); and 10 000 assorted intermediate host plants.

Production of containerised stock from the Narrogin Plant Nursery included 30 000 single potted stock for Goldfields replanting and specialised revegetation programs, and 810 000 multi-celled containers for on-farm revegetation programs within the Wheatbelt and South West regions. These include the eucalyptus oil mallee program and a revegetation program sponsored by Western Power and administered by Agriculture W.A.

Seed Handling

Seeds were acquired of the principal species needed for Departmental forest plantings, rehabilitation and conservation projects, as well as for public sales. They were processed and stored at the Manjimup Seed Centre. A total of 545 native and exotic species totalling around 3 200 kg are stored at the Centre.

The percentage breakdown of seed orders despatched within Australia are as follows:

Western Australia	87.7%
South Australia	1.4%
Victoria	2.0%
New South Wales	2.7%
Queensland	4.4%
Tasmania	0.7%

In addition, seed was exported to Brazil (0.3%), Hawaii (0.3%) and Zimbabwe (0.3%).

Total weight of seed despatched for 1995-96 totalled 1 216 kg.

A total of 1 667 kg was acquired through collection and purchase.

<i>Eucalyptus diversicolor</i>	83 kg
<i>Eucalyptus marginata</i>	21 kg
<i>Eucalyptus calophylla</i>	165 kg
<i>Eucalyptus globulus</i>	153 kg
Other <i>Eucalyptus</i> species	181 kg
<i>Pinus radiata</i>	350 kg
<i>Pinus pinaster</i>	340 kg
Leguminaceae species (e.g. Acacias, Kennedias)	253 kg
Proteaceae species (e.g. Banksias, Hakeas)	8 kg
Other species	113 kg

As a continuation from last year's planting program, new seed orchards of *Pinus pinaster* (11 ha) and dieback-tolerant *Eucalyptus marginata* (1 ha) have been established. A seed production area of *Banksia coccinea* was also planted at Manjimup.

Tree Breeding

The Western Australian base breeding population of *Eucalyptus globulus* is the largest in the world. From this base the Western Blue Gum has been developed. The Western Blue Gum grows faster and has slightly higher wood density than the original population. Improved salinity and drought tolerance of the Western Blue Gum is being developed for use in areas where low rainfall and salinity restrict tree growth. Genetic gains trials planted at Albany in 1994, and the production of trees seven metres tall at age two, has confirmed earlier predictions.

Sawn Production From Crown Land and Private Property 1994-95

	Hardwood m ³	Softwood m ³	Total m ³
Sawn Timber Production			
- Crown land	243 371	99 320	342 691
- Private property	3 159	24 750	27 909
Sawn Sleeper Production			
- Crown land	17 307		17 307
- Private property	553		553
Total	264 390	124 070	388 460

Final figures for 1995-96 not yet available. These will be published in the next annual report.

Note: The trend in the production of sawn timber is shown in Appendix 7.

Log Production From Crown Land and Private Property 1995-96

TYPE	Crown Land		Private Property		Total	
	(m ³)	(tonnes)	(m ³)	(tonnes)	(m ³)	(tonnes)
SAWLOG TIMBER*						
Jarrah	453 424	595 419	3 827	5 002	457 251	600 421
Karri	213 421	264 642	4 672	5 767	218 093	270 409
Marri	9 667	11 987	2 694	3 340	12 361	15 327
Blackbutt	1 432	1 878	38	50	1 470	1 928
Wandoo	880	1 157	230	302	1 110	1 459
Sheoak	1 653	1 653	91	91	1 744	1 744
Other	124	155	17	21	141	176
Total Native Hardwood	680 601	876 891	11 569	14 573	692 170	891 464
Globulus	376	447	207	247	583	694
Mallet	487	579			487	579
Muellerana	57	68			57	68
Total Plantation Hardwood	920	1 094	207	247	1 127	1 341
Pine Sawlogs	264 989	264 989	45 192	45 192	310 181	310 181
TOTAL SAWLOGS	946 510	1 142 974	56 968	60 012	1 003 478	1 202 986
OTHER LOG MATERIAL						
Native Hardwood						
Chiplogs	653 717	799 685	89 103	108 824	742 820	908 509
Industrial wood	10 476	12 991	3 293	4 083	13 769	17 074
other**	9 935	12 219	1 914	2 323	11 849	14 542
SubTotal Native Forest/Other	674 128	824 895	94 310	115 230	768 438	940 125
Plantation Hardwood						
Chiplogs	13 492	15 785	30 001	35 101	43 493	50 886
Industrial wood	24	29	129	153	153	182
other**	347	413	0	0	347	413
SubTotal Hardwood Pltn/Other	13 863	16 227	30 130	35 254	43 993	51 481
Softwood						
Industrial wood	291 947	299 720	143 224	143 307	435 171	443 027
Pine rounds	7 357	7 357	22 730	22 730	30 087	30 087
SubTotal Softwood/Other	299 304	307 077	165 954	166 037	465 258	473 114
Total Other Material	987 295	1 148 199	290 394	316 521	1 277 689	1 464 720
TOTAL LOG TIMBER	1 933 805	2 291 173	347 362	376 533	2 281 167	2 667 706

* Sawlog timber from all sources, including veneer, but not including chiplogs, particleboard, industrial wood, firewood, fencing material, poles, piles and minor forest products.

** Includes poles, bridge timbers, burls, chopping logs, mining timber, pegging logs and fencing material.

Note: The trends in the production of logs are shown in Appendices 5 and 6.

Tourism and Recreation

Management Program 3

Our objective is to identify, provide and maintain opportunities and services to the community which allow them to enjoy the wildlife, lands, waters and resources entrusted to the Department without compromising conservation and other management objectives.

This program deals with tourism and recreation in the natural environment on lands and waters managed by CALM. It includes preparing and implementing management plans and the provision, management and maintenance of appropriate access, recreation opportunities and facilities, protecting visitors and facilities from fire, training of staff and CALM volunteers, designing and initiating educational information and activities concerning tourism and recreation in the natural environment, and developing public awareness, understanding and support for the tourism and recreation management program, services and policies.

During the year, the Department published a Recreation and Tourism Strategy entitled *People in CALM Places*. One of the key aims of this document is to articulate the Department's role in an ongoing commitment to providing sustainable recreation and tourism opportunities of the highest quality on the lands and waters managed by CALM and to communicate this to the wider community.

The strategy describes the vision of CALM's Recreation and Tourism

Program and outlines a number of focuses and strategic actions in relation to managing natural areas for public use. It also proposes ways of further measuring CALM's effectiveness and efficiency in delivering recreation and tourism services and facilities and the effect recreation and tourism has on the natural environment.

The strategy also provides the basis for more detailed regional action plans which describe the steps to be taken in achieving Recreation and Tourism Program objectives throughout this State.

RECREATION PLANNING AND DESIGN

Area and Regional Plans

Final management plans for West Cape Howe National Park, Yalgorup National Park, Lesueur National Park, Coomallo Nature Reserve, Dryandra Woodland, Purnululu National Park and Two Peoples Bay Nature Reserve have been gazetted this year. Draft management plans covering more than five conservation reserves were released for public comment in accordance with CALM Act requirements. Work continues on 19 draft and final plans, all of which

HIGHLIGHTS

- Opening of the 'Penguin Experience' wildlife discovery centre (p. 34)**
- Upgrading of the Dave Evans Bicentennial Tree in Warren National Park (p. 30)**
- Establishment of the Aboriginal Nature Based Tourism, Education and Training Unit as a business unit (p. 36)**
- Bibbulmun Track Project enters two-year construction phase, with stage one from Kalamunda to Brookton Highway completed (p. 31)**
- Construction of the Tree Top Walk and Valley of the Giants boardwalk to enhance the tourist experience and protect the tingle forest (p. 30)**

provide recreation and conservation strategies.

The following tables list the area of each tenure category managed by CALM for which plans are now completed. It also lists the status of plans in preparation or already approved as at 30 June 1996.

Areas Covered by Management Plans

Tenure classification	Area covered by plan (ha)	Total tenure area (ha)	% covered
National Park	951 357.0	4 872 070	19.5%
Nature Reserve	27 799.7	10 784 751	0.3%
Marine Reserve	234 060.0	1 013 940	23.1%
Other Reserves	87 384.3	262 607	33.3%
Total CALM Conservation Estate	1 300 601.0	16 933 368	7.6%

CALM Management Plan Status at 30 June 1996

Approved (gazetted) management plans	Date of gazettal	Final plans in preparation	Draft plans in preparation
NATIONAL PARKS			
Cape Range	23-03-90	Nambung	Millstream-Chichester
Fitzgerald River	19-07-91	Karrijini	Serpentine
Leeuwin Naturaliste	21-04-89		Stirling Range
Shannon D'Entrecasteaux	08-01-88		Porongurup
Walpole-Nornalup	03-07-92		Francois Peron
Yanchep	29-09-89		
John Forrest	19-08-94		
West Cape Howe	04-08-95		
Yalgorup	15-08-95		
Lesueur	13-10-95		
Purnululu	05-03-96		
NATURE RESERVES			
Benger Swamp	12-02-88	Wanagarren	Esperance Lakes
Dampier Archipelago	31-08-90	Nilgen	Lake Muir Unicap
Forrestdale Lake	10-07-87	Southern Beekeepers	Perup
Mooradung	21-02-86	Wanjarri	Shark Bay Terrestrial Reserves
Nature Reserves of Shire of Wyalkatchem	10-07-87		Alfred Cove
Nature Reserves of Shires of York and Northam	10-07-87		Milyu
Coomallo	13-10-95		Pelican Point
Two Peoples Bay	07-06-96		
MARINE PARKS			
Ningaloo	24-11-89	Shark Bay	Swan Estuary
Marmion	15-05-92	Shoalwater Islands	Rowley Shoals
OTHER RESERVES			
Lane Poole Reserve	14-12-90	Canning River Regional Park	Shark Bay World Heritage
Matilda Bay Reserve	21-05-93	Monkey Mia Reserve	Area Strategic Plan
Shoalwater Islands	20-10-92	Leschenault Conservation Park	
		Hamelin Pool Marine Nature Reserve	
STATE FOREST			
Logue Brook Reservoir and Catchment Area	16-03-90		
Waroona Reservoir and Catchment Area	16-03-90		
Dryandra Woodland	14-11-95		
REGION PLANS			
Central Forest Region	12-02-88		Wheatbelt Region
Northern Forest Region	12-02-88		Kimberley Region
Southern Forest Region	12-02-88		
Forest Management Plan 1994	22-03-94		
South Coast Region	13-03-92		
Goldfields Region	24-02-95		

Approximately 58 per cent of visits were to sites covered by management plans either approved or in preparation (but excluding regional parks). The number of visits to the total CALM-managed estate to 30 June 1996 was 5.7 million.

Regional Management Plans

CALM region	Area (millions of ha)	% of WA (total area)
Swan	2.1	0.8%
Central Forest	1.8	0.7%
Southern Forest	1.4	0.6%
South Coast	20.0	7.9%
Goldfields	82.0	32.5%
Total	107.3	42.5%

Note: Regions are as delineated in Forest Management Plan 1994-2003 for Forest Regions. Area figures are of the total area within a region, including CALM-managed lands.

Landscape Management

During 1995-96 the landscape management section undertook a wide range of land use planning projects, with an emphasis on protecting the positive experience of visitors to the CALM-managed estate.

A new landscape planning procedure with an improved assessment method has been developed which has the support of other government agencies. This has been applied in a pilot study of the Leeuwin Naturaliste region. Landscape character units defined through this study have been adopted for the Leeuwin Naturaliste Planning

Review currently being undertaken by the Ministry for Planning. A detailed impact assessment has also been completed for a proposed subdivision adjacent to the national park at Injidup.

The Ord to Argyle powerline proposal was reviewed, proposed telecommunications towers on the Darling Scarp were assessed for their visual impact, and advice was provided for the Telecommunications Memorandum of Understanding currently being prepared by the Department of Environmental Protection for carriers.

A harvesting plan was prepared with the Softwood Business Unit for the

plantation surrounding the Lewana Recreation Camp and advice was provided for other historic recreation sites which might be affected by the impact of harvesting in the near future. Advice was also provided to the Rottneest Island Authority for a landscape assessment of the island.

Integrated land management studies for two Alcoa operation sites were prepared to the preliminary concept stage. Landscape planning support was also provided for a number of park management and timber harvesting plans.

Computer facilities were improved and photo-simulations prepared to assess the impact of a number of developments proposed around the State. Work commenced on a new series of practical, 'hands on' guidelines for the planning and design of various land management activities such as plantation establishment, roading, subdivision, timber harvesting and building of towers.

Recreation Site and Facility Plans

Recreation master plans were prepared this year for Logue Brook Caravan Park (Mornington District and leaseholder); Dwellingup Caravan Park (Dwellingup District and leaseholder); Hoffman Mill (Mornington District); Vasse-Wonnerup Wetland (Capes District); Grigsons Lookout (Gascoyne Region); Karratha Arboretum (Pilbara Region); Narrogin Nursery redevelopment (Narrogin District) and Wave Rock Reserve (Shire of Kondinin). A comprehensive recreation suitability assessment was also completed for Nambung National Park, and the master plan for Icy Creek (Lane Poole Reserve) was updated.

Recreation site development plans were completed and are progressively being implemented for Gloucester

Tree (Pemberton); Bibbulmun Track entry point (Kalamunda); Hills Forest campground for visitors with disabilities; Stirling View picnic site (Porongurup National Park); Bluff Knoll (Stirling Range National Park); Moingup Spring (Stirling Range National Park); Tree in the Rock (Porongurup National Park); Castle Rock recreation area (Porongurup National Park); Cape Le Grand Beach (Cape Le Grand National Park); Barrabup Pool (Blackwood District); Cane Break (Blackwood District); Crooked Brook (Mornington District); Blackwood River Park (Blackwood District and Nannup Tourist Association); Ellensbrook Warden's residence, plan revisions (Capes District); Bellburn operators' camp (Purnululu National Park); Silent Grove and Bell Creek campsites (West Kimberley District); Bottle Bay temporary protection plan (Gascoyne Region); Grigsons Lookout (Moora District); Mt Bruce Walk Trail carpark and lookout sites (Karijini National Park); St Mary's campground (Fitzgerald River National Park); Beedelup Falls carpark and boardwalk (Beedelup National Park); Bicentennial Tree (Warren National Park); Jarrahdale POW track entry point (Jarrahdale State Forest); Congelin and Old Mill Dam day use areas (Dryandra Forest) and Pickering Brook ropes course (Kerry Ross lease).

Assistance with regional action plan preparation was provided to Cape Range National Park, Karijini National Park and Millstream National Park.

Recreation site development concept plans were completed for Monkey Mia entry station (Gascoyne Region); Cape Peron precinct (Gascoyne Region); Woody Island (Esperance District and leaseholder); Cape Le Grand entry station (Cape Le Grand National Park); Walyunga Aboriginal heritage site (Walyunga National Park) and Mt John-Lake Clifton stromatolite site (Yalgorup National Park).

Design and construction documentation drawings were prepared for John Forrest entry building; Matilda Bay furniture, Parry Lagoons boardwalk and birdhides (East Kimberley District); new Peron Homestead access road survey documentation (Gascoyne Region); Grigsons Lookout (Moora District); Point Ann shelter (Fitzgerald River National Park); Snake Gully and Big Tree Grove boardwalks (Shannon National Park); Rota-loo toilets for Conspicuous Cliffs and Hilltop (Walpole-Nornalup National Park); Ancient Empire interpretative boardwalk and walk track—Valley of the Giants (Walpole-Nornalup National Park); Coalmine picnic sites (Walpole-Nornalup National Park); Lake View shelter (Yanchep National Park); wildflower garden fencing and gate detailing (Yanchep National Park); Loch McNess decks and jetties (Yanchep National Park); Mt John-Lake Clifton site (Yalgorup National Park); Icy Creek kitchen (Lane Poole Reserve); Old Mill Dam information shelter (Dryandra Forest) and Bibbulmun Track shelters (Statewide).

Additional support was provided to CALM field staff on recreation facility construction, maintenance and presentation issues.

Formal training was provided for CALM staff at the Shark Bay Ranger Recreation Planning, Design and Visitor Communication Course; the Advanced Recreation, Planning and Management Course at Dwellingup and the Recreation Design, Construction and Facility Maintenance Course for AWU staff, Southern Forest Region at Pemberton. Lectures on recreation planning and management in natural areas were also delivered to students at Edith Cowan and Murdoch Universities.

Significant involvement in other projects included management of

consultancy of review of RATIS (Recreation and Tourism Information System) and project management for Tree Top Walk and other Valley of the Giants development works.

TOURISM AND RECREATION OPPORTUNITIES

This year CALM continued to improve facilities and services for visitors throughout the State.

South Coast: At Stirling Range National Park a \$24 250 grant was awarded to CALM Albany to upgrade walk tracks on Mondurup/Toolbrunup Peaks and Mt Trio under the 1995–96 Sites of National Tourism Significance Program; work has commenced by CALM staff and the Australian Trust for Conservation Volunteers; the draft management plan for the Stirling Range and Porongurup National Parks is nearing completion.

At Fitzgerald River National Park a 1994–95 National Ecotourism Program grant of \$46 500 was awarded to upgrade the Point Ann day use area and for the construction of a campsite at St Mary's which is now complete; shelters, shade constructions, toilets, barbecue sites, campsites were constructed by CALM staff and Australian Trust for Conservation Volunteers.

At Porongurup National Park the 1996 blackberry spraying program was completed by CALM staff at a cost of \$10 000. At William Bay National Park footpaths at Greens Pool and Elephant Rocks have been bituminised to improve visitor access. At Torndirrup National Park preliminary works were completed in preparation for the Gap path to be constructed as part of the 1994–95 National Ecotourism Program. A grant of \$20 000 was awarded to CALM Albany for the construction of the path.

Southern Forest: In the Manjimup District several kilometres of new track was built for the Bibbulmun Track as well as a new shelter on the Donnelly River; the Perup Forest Ecology Centre was constructed and includes a new rammed earth, low energy, minimal waste visitor facility funded by the Commonwealth Department of Tourism 'Forest Ecotourism Program', South West Development Commission and CALM.

In the Pemberton District the Bicentennial Tree site was upgraded to accommodate tour coaches and completed in late 1995 and included new road, carpark, walk track, covered barbecue and toilets; modification of existing picnic areas was completed in the Shannon National Park; a 44-kilometre interpretive tourist drive was constructed and completed, including eight mini-radio station stops, boardwalks at Snake Gully and Big Tree Grove and a guide book; a new suspension bridge and walkways were constructed at Beedelup Falls; planning commenced for redevelopment of the Hundred Year Forest and new forest tour drive, Boorara Tree/Lane Poole Falls and Point D'Entrecasteaux.

In the Walpole District a protective boardwalk was installed at the Valley of the Giants around old tingle trees under a 'Sites of National Tourism Significance Grant' from the Commonwealth Department of Tourism; construction of a new access road and carpark, Tree Top Walk, Tingle Shelter and infrastructure completed; construction of Conspicuous Beach carpark and beach access walkway was completed; John Rate Lookout boardwalk constructed; Hilltop Big Tingle carpark, toilets, boardwalks and interpretation shelter constructed; and some alignment and planning for the Bibbulmun Track completed.

Central Forest: The main focus for the Region has been the Bibbulmun Track Project and the improvement of access and facilities in the South West Capes District. Mornington and Blackwood Districts, with the assistance of LEAP/REAP crews and volunteers from the Collie services clubs, completed 80 kilometres of track and four shelters.

The Belvidere campsite at Leschenault Peninsula Conservation Park was completed and the park officially opened to the public with the release of a draft management plan. A forest ecology interpretive track and stage one of the discovery centre building were completed at the Wellington Discovery Forest. Work on the redevelopment of the Hoffman picnic and camping area has commenced. The Wright's Bridge picnic and camping area redevelopment is nearing completion. Information signs, a canoe launching facility and improved access to the site are planned. The collection of camping fees through self-registration was introduced at Wright's Bridge and Black Point.

In the Tuart Forest National Park, Commonwealth and State grants have enabled the development of a nocturnal interpretive track, a birdhide overlooking the Wonnerup Wetland, an ongoing environmental education program for schools, and a conservation plan for the lime kilns.

At Leeuwin Naturaliste National Park sections one to five of the Cape to Cape walk track are complete with a brochure written for the Cape Naturaliste to Wyadup section. Walk tracks, extensive boardwalks and a whale lookout were completed at Cape Naturaliste. At Ellensbrook, parking areas were enlarged and sealed in readiness for opening of the homestead to the public. Two-wheel-drive access from Cape Freycinet to South Beach was provided. A dual use walk/cycle path, including

60 metres of elevated boardwalk, was completed between Margaret River and 10 Mile Brook.

Swan Region: The upgraded day use area at Langford Park has been completed with additional picnic areas, extensive earth shaping, rehabilitation, tree and shrub planting, car and bus parking. A walk track was completed in conjunction with Westrek and Alcoa. Similarly, a mountain bike track has been constructed in partnership with Alcoa and the Perth Mountain Bike Club. Visitors to Penguin Island will enjoy the interaction with penguins at the recently completed penguin viewing facility. A management and research facility on the island was constructed with the support of the Western Mining Corporation.

Following the opening of the realigned Bibbulmun Track between Kalamunda and Brookton Highway, numerous visitors have enjoyed the walk and the new facilities such as toilets and camping shelters. This work has been undertaken in partnership with the Ministry of Justice, walking clubs, service groups, volunteers and CALM. The Kitty's Gorge Walk Trail in Serpentine National Park has been re-routed and extensively upgraded. In conjunction with Morley Senior High School, five bush huts and a sheltered eating hall have been constructed at Icy Creek. These new facilities will allow a wider range of school groups to use this area.

Dwellingup District constructed a large tractor-mounted lathe which produces high quality, uniform timber bollards for use in recreation areas. The machine makes use of timber that would otherwise not be used during harvest and silviculture management operations.

The activities at The Hills Forest continue to attract numerous visitors. Focus has been put on public interest areas such as Aboriginal history, early

European culture and Western Australia's flora and fauna. New activity programs targeted at school groups continue to expand. A boardwalk over the microbiolites at Lake Clifton in Yalgorup National Park has been constructed in conjunction with the Greening the Catchment Task Force and the City of Mandurah. To complement this facility, carparking, toilets and an information shelter have been built. Facilities for visitors in Erskine Conservation Park have been upgraded with the completion of a large information shelter, a boardwalk and toilets.

Wheatbelt: Visitor numbers in the Dryandra Woodlands were significantly higher for this financial year totalling approximately 39 000, as opposed to 1994-95 where numbers were estimated at 30 000. The visitors' enjoyment of Dryandra Woodlands has been greatly enhanced with the provision of additional interpretive information, walk tracks and drive trails. A new brochure and interpretive shelter were produced for the area and 35 kilometres of walking tracks installed. The first interpretive drive trail of its kind, 'The Sounds of Dryandra Woodlands Drive Trail', was officially opened by the Hon Premier in October and is proving extremely popular with visitors.

The Shire of Kondinin employed CALM as contractor for works at Wave Rock. Works undertaken include the production of an interpretation and sign plan for the area, erection of an interpretive shelter and associated interpretive material, realignment and resurfacing of two kilometres of walk track and the production of signs for the area. A nature-based recreation and tourism survey of 60 sites in the Merredin District was enthusiastically received by the Shires. Two Dryandra Woodland Ecology courses were conducted during 1995-96 with 28 participants

in total. Seven courses have been completed since its inception. All course participants continue to give it very high praise in their evaluations. Revenue raised to date totals \$26 000. The small profit is shared with Dr Tony Friend's Dryandra research programs, course development and facility upgrade within Dryandra Woodland.

Goldfields: Care and maintenance of recreation sites continued at Cave Hill, Mt Elvire Homestead and Yeo Lake Homestead. The upgrade of Goongarrie Homestead and the Kalgoorlie Arboretum walk tracks and carpark commenced.

Midwest: The implementation of the State Government Squatter Management Policy continues at Wedge Point and Grey, with 370 shack owners having taken up the option to lease. Seven kilometres of the Pinnacles access road in Nambung National Park was reformed and resheeted in preparation for road sealing, which will cost \$700 000. A boardwalk costing \$48 000 was constructed along the foreshore of Monkey Mia Reserve and was jointly funded with the Monkey Mia Dolphin Resort.

Five coastal recreation sites in Francois Peron National Park were redeveloped with the assistance of the Australian Trust for Conservation Volunteers. The Peron Homestead hot tub was upgraded and ablution facilities constructed at Shell Beach Conservation Park. CALM assisted the Shires of Shark Bay and Carnarvon to prepare and implement recreation and site development plans for key tourism sites managed by the Shires. World Heritage funding enabled site development works at Gladstone, Bush Bay and Eagle Bluff.

Consultants were engaged to prepare designs and specifications for lookout platforms with safety rails at four cliff sites on the coast and river

gorges in Kalbarri National Park. Preliminary architectural designs and cost estimates were prepared for an office in the Kalbarri National Park headquarters, and a contract was awarded for three kilometres of road stabilisation in the park.

Pilbara: Funding has been committed through the Pilbara Development Commission for the construction of a permanent visitor centre at Karijini National Park. Site evaluation and conceptual design has commenced. Expressions of interest have been called for the provision of accommodation within the park. An initial survey of potential airstrip sites in the park was carried out, but the preferred site was not culturally acceptable to the local Aboriginal people. Investigations are continuing.

CALM provided support for the Pilbara, Gascoyne Offshore Island Ecotourism Strategy. Mt Bruce Interpretive Walk Trail was opened in September by the Hon Minister for the Environment. Funding was provided through the National Ecotourism Program with additional assistance and support being provided by Hamersley Iron Pty Ltd, and the Australian Trust for Conservation Volunteers.

The Karijini temporary visitor centre was initiated through the cooperative efforts of CALM, the Aboriginal Economic Development Organisation, the Karijini Aboriginal Corporation and the Pilbara Development Commission. It was officially opened by the Hon Premier and the Deputy Premier. The draft management plan for the Karijini National Park was released for public comment by the Hon Minister for the Environment. An assessment of visitor day use and camping facilities has been conducted throughout the Cape Range National Park and funding has been allocated for the progressive sealing of the Yardie Creek Road. The Department of Land Administration has been

requested to initiate action to extend Cape Range National Park eastwards, following an agreement reached between the Ministers for the Environment and Minerals and Energy about limestone reserves in Cape Range.

Kimberley: Popular activity programs for visitors in national parks and nature reserves in the East Kimberley has continued after a successful pilot program last year. Activities include guided and interpreted walks, slide shows and displays. The Purnululu National Park Management Plan was released. A new carpark and walk tracks were established at Mirima and Purnululu National Parks and information bays and signs at various areas were upgraded. The number of fly/drive visitors to Purnululu National Park has more than doubled since last year. 'Campfire Yarn', the regional newsletter designed to give operators a regular update on park management information, and other more general information continues.

Commercial Tourism Interests

CALM increasingly calls for expressions of interest from the private sector to deliver services and opportunities for visitors. Leasing and licensing are the preferred means of meeting the rising demand for services, ensuring that financial contributions flow directly to CALM to assist the expense of managing the natural resource. CALM, as custodian of Western Australia's natural resources, identifies the needs and standards for tourist services and then proceeds to secure private sector cooperation and involvement in their delivery.

Commercial leases for visitor services have been finalised for a caravan park at Dwellingup and for the management and operation of the Forest Heritage Centre at Dwellingup. Negotiations have been

finalised for the renewal of the lease for Royal Freshwater Bay Yacht Club and the lease for the forest cottages at Lewana, Myalup and Wellington Mills. Negotiations are continuing with proponents for Logue Brook Caravan Park, John Forrest National Park Tavern and Tearooms, visitor services at Woody Island Nature Reserve and commercial services complementary to CALM's Hills Forest Program. Expressions of interest were advertised in relation to a new lease for Yanchep Inn and for the development of accommodation facilities within Karijini National Park. Submissions in relation to these advertisements were still being assessed at 30 June 1996.

All private tour operators conducting commercial tourist activities on conservation areas are required to obtain a licence in accordance with the CALM Amendment Regulations 1993. All tourism activities are required to be consistent with approved management plans, or in the absence of a management plan, to be either compatible or necessary operations as specified in the CALM Act.

At 30 June 1996, a total of 195 commercial tour operators were approved to operate on CALM-managed lands and waters with a further 31 applications being assessed. This represents an increase of 49 operators or 34 per cent over the previous year.

CALM has continued to identify and develop opportunities for nature-based tourism on CALM-managed lands and waters, in preparation for advertising to allow private sector involvement in such tourism developments. During the year, expressions of interest were advertised for the licensing of dive charter tours to Rowley Shoals Marine Park and helicopter tours in Purnululu National Park.

CALM has also been involved in

drafting key strategy documents such as the Nature Based Tourism Strategy for WA.

Leasing and Land Administration

CALM manages 295 leases and is in the process of issuing an additional 74. Of the leases in place, 220 are on State forest or timber reserves, 24 are on conservation estate, 42 are located on freehold land and nine on other land tenures.

The review of fees for forest leases and gravel leases was approved by the Hon Minister for the Environment in February 1996 and new rates applied from 1 July 1996. A proposal to introduce new rates for apiary sites is yet to be approved.

Eight new leases have been issued and several more are being finalised. In addition most of the leases that expired during the year have been renewed.

A new lease database to monitor lease details such as rent collections and renewals was established and is fully operational.

The total number of apiary permits increased to 2 830, with 168 additional permits, 102 transferred permits and 15 cancellations.

Prosecution action was taken against five individuals for offences in respect of the CALM Act or its Regulations. One case is still pending final outcome. Offences include unauthorised firewood removal and entry into dieback quarantine areas.

Bibbulmun Track Project

The Bibbulmun Track Project was established by CALM in October 1993 to oversee a significant upgrade, realignment and extension to the track, Western Australian's premier long-distance walk.

This financial year has seen the project progress from planning through resourcing to construction. A grant from the Federal Department of Transport and Regional Development, through the Regional Development Program, and State Government contributions and matching in-kind support, will complete the construction phase of the project.

The joint venture involving the Ministry of Justice has continued with prison workshops prefabricating shelters, toilets, picnic tables and fire-rings, to be installed by work crews from Karnet Rehabilitation Centre and the Pardelup Prison Farm. These crews form the backbone of the construction workforce and provide training opportunities for a considerable number of prisoners.

Several DEET-sponsored training programs have completed their six-month project terms on the track, including a LEAP project in Albany, another in Collie, and a New Work Opportunities Program based in Denmark. These have filled the dual role of providing construction outcomes for the track and training opportunities for participants.

Community involvement in the development of the track continued with a range of community meetings taking place throughout the south west to establish the basis for future community-based work programs.

In August 1995 the Hon Minister for the Environment opened the new northern section of the track, from Kalamunda to Brookton Highway, and released the new map covering that section. This triggered a flood of walkers who made use of glorious spring weather to sample the new section and its much improved information systems. Feedback was overwhelmingly positive, but the numbers of users far exceeded expectations. Additional campsites

are being planned to ease the pressure on existing sites in this section.

A range of corporate sponsors have continued to contribute to the project, as have the three relevant Development Commissions. Members of various bushwalking clubs have spent days helping finalise route selection, taking down old route markers and putting up new markers and signage.

The Collie Combined Service Clubs, sponsored by Griffin Coal, have constructed two new campsites and are scheduled to complete another campsite and the new bridge over the Harris River in the coming summer. Their willing input is a welcome example of community involvement.

VISITOR INTERPRETATION SERVICES

A workshop with the Fisheries Department and CALM staff saw the commencement of the drafting of a cooperative Shark Bay World Heritage Area communications plan.

Workshops were conducted with the Kimberley Tourism Association in Broome and Kununurra towards producing a Kimberley Tourism Manual to assist the industry in providing enriching experiences for clients while minimising their impact on the environment.

Interpretive design is intrinsic to the recreation development plans prepared by CALM. Interpretation officers advised on the provision of interpretive facilities and services during the preparation of recreation site development plans.

CALM's Sign Design Studio continued to meet regional needs for signs and displays in managing visitors to CALM estate. Ninety-three projects were completed.

Interpretive products of particular note were the involvement with

CALM's CD ROM production and the 'Monkey Mia Magic/Shark Bay World Heritage Area' video.

The Visitor Interpretation Section produced bird interpretation signs for Burswood Park Board, display panels for Wave Rock, and the Big Swamp Interpretation Plan for the City of Bunbury.

Regular activity programs were maintained at Yanchep National Park, Mirima and Purnululu National Parks in the Kimberley and at The Hills Forest 'Go Bush' Program. The Leeuwin Naturaliste 'On the Ridge' Program was not continued due to staff constraints.

CALM's nationally accredited Interpretive Activities Design Workshop was conducted at Yanchep National Park in August 1995.

Running Activity Programs: A Guide to Interpreting the Natural and Cultural World for Visitors and *Visitor Interpretation Manual: Guidelines, Standards and Practices for Managing Recreation and Tourism* were published as saleable products.

CALM staff were trained in visitor information and interpretation as part of the Advanced Recreation Planning and Management Course at Dwellingup.

CALM staff were contracted for lectures at Edith Cowan and Notre Dame Universities in interpretation and environmental management.

CALM's Ecology Courses continued to attract interest with participants at Dryandra Woodland and at Perup Forest.

Professional liaison, consultation and presentations were made to the Ecotourism Association of Australia, Interpretation Australia Association and the South West Development Commission.

South Coast: Interpretive walks have been conducted by CALM staff and volunteers in the Albany District, these include the Gap at Torndirrup National Park, Point Possession Heritage Trail on Vancouver Peninsula and Bolganup Heritage Trail at Porongurup National Park.

Central Forest: The first self-guiding 'nocturnal trail', interpreting the ecology of the western ringtail and brushtail possums, was developed in the Tuart Forest National Park. A conservation and interpretation plan was produced for the historic Lime Kilns precinct in the park and a self-guiding trail designed to interpret forest ecology was completed at Wellington Discovery Forest.

Swan Region: Over 800 000 people visited the twelve 'Perth Outdoors' shopping centre displays which involved over 1 079 hours of volunteer work. Forty-one presentations were given by staff on topics ranging from CALM's role as a land manager, to employment opportunities in wildlife. They were delivered to a variety of audiences including schools, universities, garden clubs and scout/guide groups. An 'Exploring Coastal Waters' kit was prepared in conjunction with Ocean Rescue 2000, and workshops and inservice training for teachers were conducted.

The Penguin Island Experience Discovery Centre opened early in 1996. In the first four months of operation 13 262 visitors paid to enter the facility and learn about the little penguin and other unique flora and fauna of the Shoalwater Islands Marine Park.

CALM's Dwellingup District, in partnership with the New Work Opportunity programs, completed the construction of the Erskine Interpretive Centre and bird hide on the Peel/Harvey Estuary; completed three forest trails, one interpreted

with information trail side signs connecting the Forest Heritage Centre with the jarrah forest and forest town of Dwellingup; and reconstructed a sleeper getters' camp, complete with demonstration area for axe skills and shingle splitting.

Signs and interpretation panels were built for the microbiolite viewing boardwalk on Lake Preston in Yalgorup National Park. The Hills Forest Catchment Carers Trail, developed in conjunction with the Water Corporation, was opened by the Hon Derrick Tomlinson MLC with an attendance of 1 134 people. This trail presents opportunities for teaching primary school children the importance of forests in keeping our drinking water clean.

The 'Forest Walk', a one-day activity in John Forrest National Park, was attended by 1 420 people and was a great success. The Native Animal Encounter proved very popular with an attendance of 856 and also showed the great work of numerous volunteer animal rehabilitation centres. The 'Go Bush' and 'Sights and Sounds of the Night' programs attracted over 4 300 people.

In the Perth District, 32 581 visitors attended activity programs such as 'Adventure Caving', 'Meet the Koalas' and 'Get Lost' in Yanchep National Park. 'CALM Connection', a 10-minute segment on a weekly television program for MCTV, was provided for six months. Information and interpretive displays were provided at Moore River National Park, Forrestdale Lake Nature Reserve and Matilda Bay Reserve.

Southern Forest: The Perup Forest Ecology Centre and Shannon National Park continued to conduct environmental education programs.

Wheatbelt: Two successful Dryandra Woodland Ecology Courses were conducted. Feedback from

participants was extremely positive and has prompted the Narrogin District to plan an extended interpretation service. 'The Sounds of Dryandra Woodland' Radio Drive Trail was launched in November. It has 25 kilometres of innovative audio trail and allows visitors to learn about the woodland from the comfort of their cars. Six solar-powered transmitters provide commentaries about the relationships between people and Dryandra through the years. The drive trail's popularity is shown by the sharp increase in visitor numbers (more than 200 per cent).

Goldfields: *The Goldfields* interpretive newspaper was developed and produced, and an interpretive walk track for *Eramphila* species in Kurrawang Nature Reserve is being developed.

Midwest: Signs and interpretive displays in Nambung National Park and Cervantes were upgraded. Information panels, a beach plinth and boardwalk signs were provided at Hamelin Pool Marine Nature Reserve. A new video, 'Monkey Mia Magic', was produced and a fibreglass cast was made of the dolphin Holeyfin and her skeleton, for display at the Monkey Mia Visitor Centre. Information panels, park brochures and the saleable publication *National Parks of the Gascoyne Hinterland* were produced for Kennedy Range and Mt Augustus National Parks, and Coalseam Conservation Park.

Pilbara: The Mt Bruce Walk Trail was opened in Karijini National Park. An interpretation activity at Karijini National Park enabled visitors to stargaze with an astronomer from the Perth Observatory, 'Under the Night Sky'. The Karijini National Park Visitor Centre provided information and also goods, including Aboriginal artefacts for sale. Guided walks at Cape Range National Park and snorkelling at Ningaloo Reef Marine Park were popular with visitors. Park

notes on many subjects have been produced. The CALM nature conservation column in the *North West Telegraph* continued.

Kimberley: In the East Kimberley District visits to Purnululu National Park increased by 15 per cent in 1995-96 over the previous year. Approximately 4 800 visitors attended slide shows in Purnululu National Park. Activity programs were undertaken by a seasonally employed interpretation officer at Mirima National Park, Parry Lagoons Nature Reserve and other locations in the Kununurra area and have proved very popular with approximately 750 visitors. New walk track signs were installed at Purnululu National Park. The new Kimberley information brochure summarising facilities and activities at all Kimberley national parks and nature reserves was released.

In the West Kimberley District a nature interpretation centre, including a snake house and nature garden, has been established at Broome with a seasonal interpretive officer employed to oversee the development. A public awareness campaign has been successful with West Kimberley staff informing Broome locals and visitors about the bilby, which still occurs in the southern parts of the region. Ranger staff at all parks continue to provide interpretive services to visitors.

VISITOR RESEARCH

The visitor research program continued with 129 sites being monitored by traffic counters. Additional observation counts and surveys were conducted and the data can be compared on a year-to-year basis and examined for variations and trends.

There were 4.7 million recorded visits for the 63 parks, State forests and reserves throughout the State during the year. This represents a

small decrease from the previous year's recorded 4.8 million visits and may have been due to the temporary closure of at least three areas for redevelopment and the impact of wildfires and cyclones.

In 1995-96 there were an estimated 5.7 million visits by the public to CALM-managed lands and waters.

Recorded Visits to CALM-Managed Land and Waters

Year	Data collection sites	Recorded visits (million)	Estimated no. of visits ¹ (million)
1991-92	115	4.4	4.7
1992-93	116	4.4	4.8
1993-94	124	4.8	5.8
1994-95	128	4.8 ²	5.8 ²
1995-96	129	4.7 ³	5.7 ³

¹ Visitor data are collected at selected sites and it is necessary to extrapolate the total number of visits to CALM-managed areas.

² Amended from last financial year as additional data became available.

³ Provisional estimate, based on limited data and subject to future amendment.

The Visitor Comment Card Survey continued in 1995-96 to obtain feedback from the public on their recreational experiences and the facilities and services provided by CALM. On average 76 per cent of respondents rated their visit 'extremely' or 'very' satisfying. The aspects of the visit that respondents found most satisfying were natural beauty, interaction, the presence of CALM staff, and the remoteness of the areas. In addition to the Comment Card Survey, a visitor survey of Dryandra Woodland was commenced and is continuing.

COMMUNITY INVOLVEMENT

CALM encourages public cooperation to assist in the management of recreation and tourism projects. Community groups and individuals are encouraged to take part in the development of tourism and recreation projects.

Aboriginal Tourism, Education and Training Unit

Last year CALM established an Aboriginal Tourism, Education and Training Unit to provide opportunities for people to experience Aboriginal heritage, with Aboriginal people, in the natural environment.

The unit continues to develop cultural learning experiences for all people but with a focus on interactive activities in the bush, leading towards an understanding of the four key natural communities around Perth—forest, woodlands, wetlands and the coast—from an Aboriginal perspective. These programs are also designed to provide employment opportunities for Aboriginal people.

CALM has established links with Notre Dame University towards developing an ecotourism certificate with work experience in CALM's nature-based tourism ventures, including the Aboriginal Tourism, Education and Training Unit.

CALM staff were contracted to Rockingham TAFE to lecture in Aboriginal studies and ecotourism.

Training of potential tour activity leaders was initiated at The Hills Forest.

Tour designs were completed for The Hills Forest and Walyunga National Park tours.

Forty-one educational talks on Aboriginal perspectives, activities and experiences were conducted in the schools around Perth to aid understanding by students and the professional development of teachers.

A variety of employment and training programs continued to be provided to Aboriginal trainees. The number of Aboriginal employees on traineeships, permanent or contract

employment fluctuated between 27 and 31 during 1995–96. Employment and training programs continued to focus on creating Aboriginal specific employment opportunities and identifying areas where Aboriginal skills and information could be used to increase Aboriginal involvement in CALM.

The Review of the Public Service Aboriginal Employment Strategy precluded CALM from implementing a further DEET/State Government-subsidised training programs for Aboriginal people under the DEET/State Government joint strategy. Other programs were utilised, such as DEET's Training for Aboriginals Program, Inwork Program, Australian Vocational Certificate Program, Community Development Employment Program (CDEP), Jobstart, New Work Opportunities Program and funding from the Australian Nature Conservation Agency's Contract Employment Program for Aboriginals in Natural and Cultural Resource Management (CEPANCRM).

CALM South Coast Region continued its agreement with Southern Aboriginal Corporation and the Department of Employment, Education and Training to train and employ an Aboriginal man to obtain the Advanced Certificate in Land Management Skills. Course components are taught at TAFE and inhouse with CALM. This model is being suggested to other Aboriginal corporations as an option for receiving on-the-job training.

Other Aboriginal traineeships for 1995–96 included: Australian Vocational Certificate Clerical Trainee, Narrogin Regional Office; two Inwork trainees at Nannup under the Lake Jasper Project; and employment of the second trainee ranger in two years at Millstream-Chichester National Park.

Grants totalling approximately \$133 000 were received from the Australian Nature Conservation Agency's CEPANCRM program for six projects during 1995–96.

CALM continued its involvement with Aboriginal individuals and corporations throughout the State, including the Karijini Aboriginal Corporation, Southern Aboriginal Corporation, Manjimup Aboriginal Corporation, Kimberley Aboriginal Tourism Association, Lake Jasper Project, Narrogin Aboriginal Corporation, Bibelmen Mia Aboriginal Corporation, and Purnululu Aboriginal Corporation.

Advisory Committees

CALM's commitment to involve the public in the management of the CALM estate is reinforced with the continuing work of advisory committees. Advisory committees are established to enable participation by local communities in park and reserve management. The committees meet regularly to discuss items of concern and issues of interest to CALM and the community, to assist in information exchange between CALM and the community and to advise the Department about management proposals.

The membership of the committees is made up of local representatives and government and local government officers, selected by the Hon Minister for the Environment.

Currently there are 25 advisory committees relating to the management of CALM lands and waters and the flora and fauna on the CALM estate. The Shark Bay Terrestrial Reserves Management Plan Advisory Committee was established in 1995–96.

Volunteers

The Department's Community Volunteer Program has expanded and grown in most sections over the last twelve months.

During the year, 37 new projects were initiated. These new projects, coupled with ongoing or renewed projects, maintain a wide variety of opportunities for community involvement. Over 1 200 volunteers contributed more than 58 000 hours to the Department. The number of volunteers registered with the Department has increased to 2 677. Volunteer activities vary greatly, including assisting staff with the provision of information and interpretation, forest and wildlife research, assisting with the Foxglove and Western Shield programs, wildlife care, campground hosting, park rehabilitation and clean-ups, flora surveys and general curation at the Herbarium.

CALM Volunteers

Year	No. registered	Hours contributed
1990-91	980	31 000
1991-92	900	40 000
1992-93	1 260	40 000
1993-94	1 773	44 000
1994-95	1 921	38 000
1995-96	2 677	58 000

External Funding

Grants and sponsorships remain the two major sources of external funding utilised by CALM.

CALM receives grants from several Commonwealth agencies such as the Australian Nature Conservation Agency, Commonwealth Department of Tourism and the Department of Primary Industry. These encompass a range of programs including

Endangered Species, National Reserves System Cooperative, Ocean Rescue 2000, Sites of National Heritage Significance and States Cooperative Assistance. In 1995-96 Commonwealth grants totalled \$4.8 million.

Commonwealth Grants

Year	Amount (million \$)
1990-91	1.70 m
1991-92	2.25 m
1992-93	3.06 m
1993-94	3.98 m
1994-95	4.95 m
1995-96	4.80 m

CALM also received some \$1.3 million in special purpose grants from State Government agencies such as Main Roads Western Australia and the South West Development Commission.

CALM continued to receive valued support through corporate sponsorship for conservation, education and infrastructure projects. Implemented this year by CALM was a new initiative, Western Shield. Building on CALM's existing feral predator control programs, Western Shield represents the biggest wildlife conservation program ever undertaken in Australia and will see a five-fold increase in the area baited and the reintroduction of native animals to former habitats. Sponsors to date include Alcoa of Australia, CRA, WAPET, World Wide Fund for Nature and Shark Bay Salt Joint Venture. Alcoa of Australia continues to be a major supporter of recreation and conservation projects within the Swan and Central Forest Regions. Support for other CALM operations comes from Midland Brick and ICI Australia.

The BankWest *LANDSCOPE* Visa Card raised approximately \$18 000 for endangered species and ecological communities conservation in 1995-96. Conservation projects funded during the year include the Gouldian finch at Pumpkin Springs, *Callitris preissii* at Woodman Point and genetic studies of the Boullanger and Whitlock Islands duffers.

External funding has increased markedly over the last five years and CALM now manages approximately 400 individual trust funds. In recognising the need to effectively integrate the financial and administrative components of external funding, CALM is currently developing a computer software package, *Management of External Funds System (MEX)*, to manage these projects and to ensure future funding prospects are enhanced.

FIRE MANAGEMENT

Prescribed burning in national parks, mainly at Pemberton and Walpole and in the Kimberley, was undertaken over 66 634 hectares for the protection of life, property and nature conservation values. In total 184 199 hectares of national park were burnt by wildfires. In particular, large fires occurred in the Stirling Range and in the Lake Shaster and Stokes National Parks near Esperance. The remote eastern and northern regions of the State experienced large fires in the Goongarrie and Rudall River National Parks and at Mount Windell (Pilbara).

Astronomical Services

Management Program 4

Our objective is to meet the demand for general and specialised up-to-date astronomical information and services from the public and educational community while furthering scientific research in astronomy in conjunction with other observations and local tertiary institutions.

1996 has been particularly busy and exciting, as it is the centenary of the foundation of Perth Observatory — Australia's only fully operational state government-funded astronomical observatory. Staff have worked long hours to ensure that planned events have gone smoothly.

The first centenary event was a logo competition to establish a new Observatory logo. More than 130 entries were received, and one was chosen to establish our corporate identity into the next century.

Probably the most elaborate event staged was a weekend of free concerts and stargazing through telescopes at the end of March. This was conducted at the Old Observatory site on the northern edge of Kings Park in collaboration with the National Trust of WA. A re-enactment of time dissemination by the 'One o'clock Time Gun' in the Old Observatory grounds heralded this event on Friday 29 March, 1996 — the gun was formally silenced in 1955. Over 800 people participated in these events and a further 400 viewed the exhibition of photographs and historical astronomical instruments displayed inside the Old Observatory.

Perth Observatory workshop staff also completed the successful

restoration of the Meridian Telescope. This telescope is an extremely important historical and technological artefact, as it was used to determine accurate latitude and longitude for Perth and also defined WA's time standard from 1901 to 1940. It is planned to make this a centenary gift to the citizens of Western Australia and house it in the grounds of its original site, the Old Observatory, should sufficient funds be raised by the National Trust of WA. There, it will serve as a permanent monument to signify the role astronomy has played in the development of the State.

Another important centenary initiative was free stargazing nights. Over 1 000 people viewed the heavens from metropolitan shopping centre car parks, the Hyde Park Festival, the Yalgoo Centenary weekend, and at our Bickley Valley Resident's Open Night. We also brought astronomy to rural areas by providing telescope viewing at many centres around the State. More than 3 600 people viewed the stars with observatory telescopes that were transported to their locality for one of these 'field nights'. Such viewing has proved very popular and will continue in the future.

The Observatory grounds at Bickley have also featured prominently in the centenary activities. A successful public lecture attracted more than 250 people to Bickley on a glorious summer's night. Also, a great deal of landscaping with native plants has been completed in the grounds. This is not only pleasing to the eye; it will also reduce maintenance costs and improve the atmospheric conditions

HIGHLIGHTS

- ☐ Centenary celebrations held (this page)
- ☐ More than 17 900 visitors and enquiries (this page)
- ☐ Two supernovae discovered (p. 40)

for observing. An added attraction to the grounds is the Solar System Walk — a series of plaques not only providing information, but spaced according to the distances between the planets in order to give visitors an idea of the scale of our local region of the Universe.

Numbers attending the Observatory for tours in 1995–96 were substantially lower than in 1994–95, but the level of customer satisfaction remained high with more than 98 per cent satisfied with their tour. The main decrease was due to the reduced number of night tours conducted because of the centenary activities that had to be scheduled on those nights. Also, there was a decrease in the number of day tours caused by the smaller number of school groups visiting — the latter a result of teachers' industrial action. However, the effectiveness of the Observatory remained high because the number of people who came on tours, called our information service, attended talks, or attended a field night tallied over 17 900. Furthermore, an estimated 6 000 people telephoned the Observatory for information, and others were informed of astronomical events in more than 150 radio, 13 television, and 85 newspaper interviews.

Our educational outreach was furthered by the establishment of a home page on the World Wide Web. Here, the public, students, public servants, businesses and professionals can find basic astronomical information as well as up-to-date information about the Observatory and our activities. We also hosted a talk by the famous Japanese amateur astronomer Yuji Hyakutake, who discovered a comet that recently had a very bright apparition—in fact it was the brightest comet for two decades.

Scientific research has also resulted in a steady output of research papers.

Two supernovae were discovered in the ongoing search for these objects. Another was detected but not confirmed by other astronomers. This highlights the dearth of observatories in the Southern Hemisphere and the importance of Perth Observatory's operation. A collaboration with astronomers working in the Netherlands, Chile and South Africa was established to monitor continuously, over 24 hours, the brightness variations of stars. These variations occur when a very faint object passes in front of a distant star. By monitoring these events we find details about this unseen matter which poorly tested

cosmological theories suggest compose a large proportion of the matter in the universe. Also, our long-standing international collaboration to monitor the positions of comets and asteroids continued, and several of the most unusual of these objects were of particular interest to the media.

All of the above work could not have been accomplished without the hard work and dedication of the Observatory staff. Thus it was particularly satisfying when two staff attained permanent positions and a new limited-term appointment was made.

Facts and Figures

General Information

WHAT STANDARD OF SERVICE CAN OUR CUSTOMERS EXPECT?

While fulfilling our conservation and land management responsibilities, CALM places a great deal of importance on community and customer relations. We aim to increase our customer focus and provide a range of services that meet customer needs. Our customers can expect:

- positive, courteous and friendly service;
- competent and efficient assistance;
- timely and accurate information; and
- confidentiality where commercially sensitive issues are concerned.

More specifically, our customers can expect that:

- CALM staff will be well trained, competent and helpful; will wear name badges when in direct contact with the community; and will identify themselves by name when answering the telephone.
- Requests for information or assistance will be met directly or referred to the appropriate person for answering as soon as possible.
- Telephone calls to our main offices will be answered on average within six rings. Telephone messages will normally be returned by the next business day.
- A contact name, address and telephone number will be given in all correspondence for future enquiries. Where it is not possible to respond to correspondence fully, an acknowledgement will be sent, advising of the current situation and when a reply may be expected.
- Brochures and other information materials will be easily understandable, accurate and up-to-date.
- Recreational facilities in national, conservation and marine parks, reserves and State forests will be well maintained and kept clean.

The Department is headed by an Executive Director, who is also a member of the Lands and Forest Commission, a member of the National Parks and Nature Conservation Authority, and Chairman of the Forest Production Council. In keeping with the varied interests of CALM there is also a Corporate Executive, which consists of eight directors working with and reporting to the Executive Director. Regional, branch and other specialist officers often attend meetings of the Corporate Executive.

The Department gives responsibility to its staff whenever possible, depending on skills and potential. Provided there is opportunity, there is no impediment to the progress of a capable individual in the organisation.

The detailed structure of divisions, regions and branches is shown in Figure 1. The names and qualifications of the officers occupying senior positions are shown in the nearby list.

REGIONAL ACTIVITIES

CALM is committed to regionalisation. There are nine regions which, according to the intensity of activity, are subdivided into districts. Accordingly, the Department is spread over many locations. Figure 2 shows CALM regional boundaries and the location of regional offices, as well as the types of lands and waters the Department manages.

Management structures are in place at nine regional, 18 district and six local offices. Within the regions there are national park rangers at 32 other locations, and a district wildlife officer at one other.

Because of community concern for protection of the natural environment and an increasing desire to experience its values, the roles of regional managers and their staff are most important. Satisfactory experiences for the 5.7 million visitors (1995–96 figures) to CALM-managed lands and waters, drawn from interstate and overseas as well as from all over Western Australia, are largely in their hands. Regional staff are also responsible for the conservation of native flora and fauna within regional boundaries. The three forest regions in the south-west of the State have a large commitment to manage wood resources, and to regenerate and protect the forests for a wide range of other values. The Goldfields region (and to some extent the midwest) has a similar commitment to sandalwood resources, as have the South Coast and Wheatbelt regions to economic tree crops that can be integrated into farming practice.

Regional managers have a degree of autonomy. Each is responsible under corporate direction for developing the region's annual works program, and for managing the region's budget allocation. Liaison with local groups, especially Aboriginal communities, other Government agencies and the community in general, is extensive. There are often advisory committees established with a focus on parts of CALM-managed lands and waters. The committees make input into the preparation of management plans and, after their approval, advise on management. It is mostly the regional managers and their staff who are responsible for this important interface with the local community.

SPECIALIST AND SERVICE ACTIVITIES

Operations throughout the State are directed by the Corporate Executive and supported by specialist and service staff. Their responsibilities are as follows.

Science and Information Division provides up-to-date, scientifically sound information to uphold effective conservation and land management in Western Australia. Three science groups address CALM's scientific needs: to discriminate and document the biota, ecological processes and biological resources of the State; to conserve threatened species and ecological communities by minimising inimical processes; and to ensure that lands, waters and biological resources are used sustainably.

Corporate Relations Division plans, coordinates and implements CALM's public information and public relations activities, produces publications, displays, media releases and audiovisuals, coordinates community education programs, and conducts public affairs and market research.

CALMfire sets fire management standards, coordinates the preparation of fuel reduction and suppression plans, provides detection communications, aircraft and other fire support services, and conducts fire training.

Economics Branch advises the Executive Director on economics, socio-economics, financial planning and long-term strategic management planning across all functions and activities of the Department. The work directly influences the magnitude of the Department's revenues and expenditures, and the management of forests and other resources.

Environmental Protection Branch prepares guidelines and procedures for protection from dieback, weeds and feral animals, evaluates mining and development proposals, and advises on rehabilitation of CALM-managed lands and waters, and on environmental protection generally.

Financial Services Branch maintains, operates and develops financial systems and procedures and provides users with financial training, expertise, reports and budgeting information.

Forest Management Branch carries out resource inventories, disease mapping, and database maintenance for the Native Forests and Plantation Business Units. It maintains corporate resource information and GIS databases relating to forest areas in the South West and prepares strategic resource plans.

Forest Resources Services Branch controls and manages the harvesting of timber and the collection of royalties and other charges. It advises on timber quality, wood technology and related matters.

Human Resources Branch provide strategic planning, policy development and formulation, advice and coordination in the management of the Department's human resources. Services are provided by the Branch in the functional areas of personnel, payroll, labour relations, training and development, and risk management.

Information Management Branch plans, coordinates and implements CALM's information systems support, and is responsible for corporate document and records management. The Branch maintains CALM's Geographic Information System (GIS), and provides a land-related information service.

Management Audit Branch reports to the Executive Director, providing systematic audits of management systems to advise on their effectiveness, efficiency, economy and compliance with legislation, policies and procedures.

Marine Conservation Branch provides policy, strategic and scientific advice for marine conservation and management, and advises marine reserves planning teams.

Park Policy and Tourism Branch develops policies and strategies for recreation and tourism, including business development, leases and licences, external funding and community involvement. It coordinates policies and programs concerning Aboriginal and other special interests, and visitor research and surveys.

Planning and Visitor Services Branch incorporates land administration, management plans, recreation planning and design, landscape management, and visitor interpretation.

Plantations Group develops silvicultural guidelines and practices for coniferous and broadleaved plantations and advises on their implementation. It manages CALM nurseries and seed supplies.

State Forest Resources Business Unit manages the silvicultural practices, regeneration, and harvesting of native forest, and the sale of log timber. It advises on timber quality, wood technology, and marketing.

Sandalwood Business Unit manages the sandalwood industry including research into plantation development for Western Australian and Indian sandalwood.

Timber Utilisation Centre conducts research and develops commercial applications which increase the value-adding and utilisation of the State's timber resources.

Wildlife Branch develops policies and provides information and advice on wildlife protection and management throughout the State, administers wildlife licences and permits, enforces the Wildlife Conservation Act and Regulations, maintains and manages databases on wildlife resources and conservation status, and ensures compliance with legislation and licence conditions.

Threatened Species and Communities Unit coordinates and assists with Departmental programs for threatened species and communities, including preparation and implementation of recovery plans.

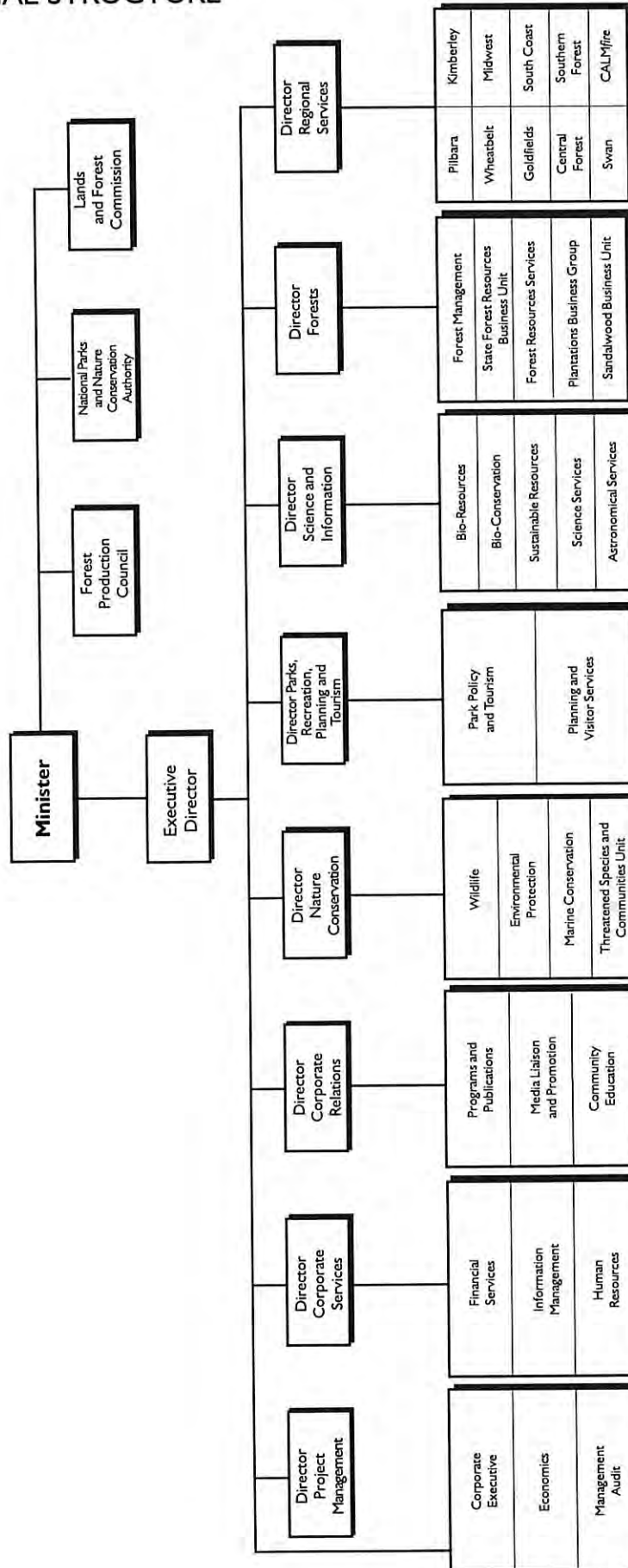
Customer Services 1995-96

CALM is committed to developing a range of services which meet the needs of our many customers, and which are also consistent with our responsibilities to conserve and manage the State's wildlife and the lands, waters and resources entrusted to CALM for the benefit of present and future generations. CALM's customer service charter, *A Commitment to Customer Service*, distributed to staff and made available to customers, outlines the types of services, information and standards customers can expect from CALM.

In 1995-96 CALM took a number of steps to improve services to customers. These included the following:

- improving services the community wants from CALM by developing new recreation and tourism facilities in national parks and State forests, by constructing those facilities where possible for people with disabilities, and by opening a new information centre in Fremantle to be open on weekends and public holidays;
- improving customer-focussed communication by providing selected field staff with mobile phones and pagers to allow immediate access by clients, by assisting the profoundly deaf with their information needs by installing a TTY (telephone typewriter) at the public information counter at CALM's Operational Headquarters in Perth, and by providing information to customers via the Internet; and
- improving the ability of CALM staff to interact with and meet the needs of customers through a department-wide customer service training program.

FIGURE I
ORGANISATIONAL STRUCTURE



CORPORATE EXECUTIVE

EXECUTIVE DIRECTOR

S R Shea BSc, MSc, PhD

DIRECTOR, REGIONAL SERVICES

C Haynes BSc

DIRECTOR, NATURE CONSERVATION

K J McNamara B Nat Res (Hons)

DIRECTOR, PARKS, RECREATION, PLANNING & TOURISM

J R Sharp B Ed, Dip PE, M Ed

DIRECTOR, FORESTS

D J Keene Dip For, BSc

DIRECTOR, SCIENCE & INFORMATION

N D Burrows* BSc For, PhD

DIRECTOR, PROJECT MANAGEMENT

F H McKinnell Dip For, BSc, PhD

DIRECTOR, CORPORATE SERVICES

J C Byrne MBA, PhD, FCPA

DIRECTOR, CORPORATE RELATIONS

R A Kawalilak BA

OTHER SENIOR STAFF

DIRECTOR, ECONOMICS

G Malajczuk BSc, MSc, MPhil, M For, PhD

REGIONAL MANAGER, CENTRAL FOREST

R Chandler BSc

REGIONAL MANAGER, GOLDFIELDS

I G Kealley BSc

REGIONAL MANAGER, KIMBERLEY

C C Done BSc

REGIONAL MANAGER, MIDWEST

E G Leaman B App Sc

REGIONAL MANAGER, PILBARA

C Muller Dip For, BSc For

REGIONAL MANAGER, SOUTH COAST

J R Watson BSc, Grad. Dip. Rec., PhD

REGIONAL MANAGER, SOUTHERN FOREST

K R Vear BSc For

REGIONAL MANAGER, SWAN

B E Harvey* BSc For

REGIONAL MANAGER, WHEATBELT

K J Wallace Dip Ed, BSc (Hons)

MANAGER, ENVIRONMENTAL PROTECTION BRANCH

F E Batini Dip For, BSc, MSc

MANAGER, FINANCIAL SERVICES BRANCH

M J Neilson BA, Grad Dip Acc, CPA

MANAGER, CALMfire

R Sneeuwjagt BSc, MSc

MANAGER, FOREST MANAGEMENT BRANCH

F J Bradshaw Dip For, BSc

MANAGER, FOREST RESOURCES SERVICES

J Clarke BSc

MANAGER, HUMAN RESOURCES BRANCH

C W Gillam BA (Hons), MA, PG Dip Bus, CMAHRI

MANAGER, INFORMATION MANAGEMENT BRANCH

C J Pearce BSc (Hons), PhD

MANAGER, MANAGEMENT AUDIT BRANCH

P Jones BSc For

MANAGER, MARINE CONSERVATION BRANCH

C J Simpson B App Sci (Biol), G Dip Nat Res, PhD

MANAGER, PARK POLICY AND TOURISM BRANCH

C B Ingram* B App Sc

MANAGER, PLANNING & VISITOR SERVICES BRANCH

A J Williamson Dip For, BSc, M For, MSc

MANAGER, PLANTATIONS GROUP

S. Mulholland BSc For, BEc, MSc Nat Res

MANAGER, PROGRAMS & PUBLICATIONS

R F Bailey BA (Hons), PhD

MANAGER, STATE FOREST RESOURCES BUSINESS UNIT

J H Murch BSc (Hons)

MANAGER, REGIONAL FOREST AGREEMENT

A W Walker BSc For (Hons)

MANAGER, TIMBER UTILISATION BRANCH

I D Rotheram* BSc For, MSc Nat Res

MANAGER, WILDLIFE BRANCH

G J Wyre B Nat Res (Hons)

HEAD, BIO-CONSERVATION GROUP

K D Morris* BSc, MSc

HEAD, BIO-RESOURCES GROUP

N G Marchant BSc (Hons), PhD

HEAD, SUSTAINABLE RESOURCES GROUP

P E Christensen BSc (Hons), PhD

HEAD, SCIENCE SERVICES GROUP

I J Abbott BSc (Hons), PhD, DSc

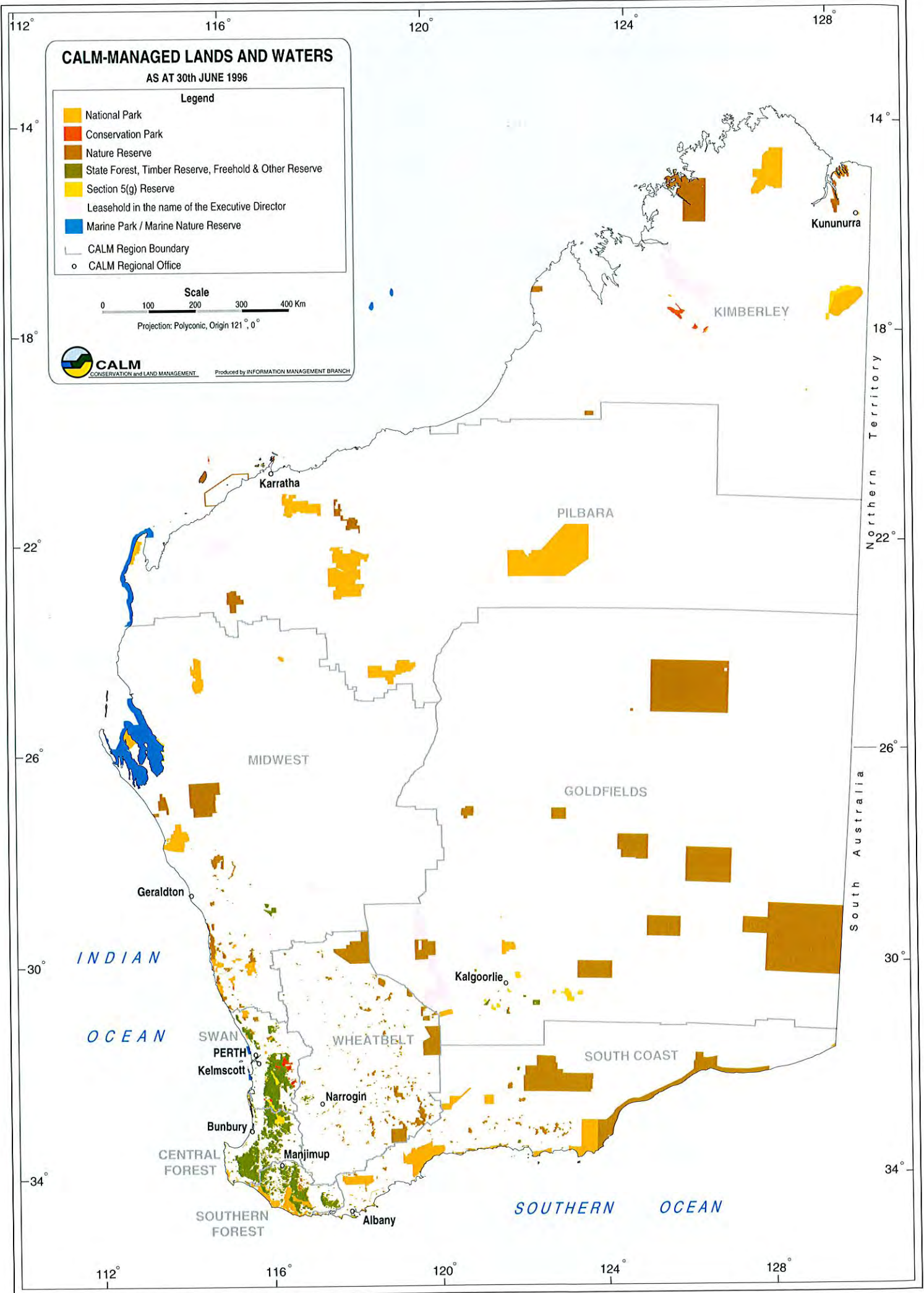
DIRECTOR, ASTRONOMICAL SERVICES

J Biggs BSc (Hons), PhD

DIRECTOR, WA THREATENED SPECIES & COMMUNITIES UNIT

A A Burbidge BSc, PhD

* Acting



CALM-MANAGED LANDS AND WATERS

AS AT 30th JUNE 1996

Legend

- National Park
- Conservation Park
- Nature Reserve
- State Forest, Timber Reserve, Freehold & Other Reserve
- Section 5(g) Reserve
- Leasehold in the name of the Executive Director
- Marine Park / Marine Nature Reserve
- CALM Region Boundary
- CALM Regional Office

Scale
 0 100 200 300 400 Km
 Projection: Polyconic, Origin 121°, 0°



CALM
 CONSERVATION and LAND MANAGEMENT

Produced by INFORMATION MANAGEMENT BRANCH

Northern Territory

South Australia

INDIAN
 OCEAN

SOUTHERN OCEAN

112° 116° 120° 124° 128°

14° 18° 22° 26° 30° 34°

Kununurra

KIMBERLEY

Karratha

PILBARA

MIDWEST

GOLDFIELDS

Geraldton

WHEATBELT

Kalgoorlie

SWAN

PERTH

Kelmscott

Narrogin

Bunbury

CENTRAL FOREST

Manjimup

SOUTHERN FOREST

Albany

SOUTH COAST

CALM-MANAGED LANDS AND WATERS

The area figures reflected in the following statements represent the gazetted or legal areas and include additions and excisions.

Total Estate

As at 30 June 1996 the total area under CALM's care was 20 276 774 ha. This was an increase of 211 888 ha during 1995-96.

The terrestrial area (i.e. not including marine reserves) is approximately 7.6 per cent of the land area of Western Australia.

The table below provides a summary of all tenure classifications.

National Parks

National parks are for wildlife and landscape conservation, scientific study, preservation of features of archaeological, historic or scientific interest, and enjoyment by the public. They have national or international significance for scenic, cultural or biological values.

The area of the 63 national parks as at 30 June 1996 was 4 872 070 ha.

The major change to the national park estate consisted of an increase in area of D'Entrecasteaux National Park (1 221 ha).

Conservation Parks

Conservation parks have the same purposes as national parks, but they do not have the same national or international significance. They have significant local or regional value for conservation and recreation.

The area of conservation parks as at 30 June 1996 was 117 316 ha, an increase of 63 ha in 1995-96. The addition was in Peel Inlet and is unofficially known as Erskine Conservation Park.

Nature Reserves

Nature reserves are for wildlife and landscape conservation, scientific study, and preservation of features of archaeological, historic or scientific interest. Recreation which does not harm natural ecosystems is allowed.

The area of nature reserves as at 30 June 1996 was 10 784 751 ha, representing an increase of 2 797 ha in 1995-96. Notable additions were two unnamed reserves in Midwest Region totalling 1 888 ha and an unnamed reserve in South Coast Region (716 ha).

State Forest

State forests are managed for multiple purposes, including water catchment protection, recreation, timber production on a sustained yield basis, and conservation. Provision is also made for public utilities and mineral production, where these activities are imposed.

Within State forests, designated areas are managed for specific purposes, such as conservation or optimum yield of exotic plantings.

The area of State forest as at 30 June 1996 was 1 724 954 ha, an increase of 73 ha in 1995-96.

**CALM-Managed Lands and Waters (ha) by Region
as at 30 June 1996**

Tenure Classification	Central Forest	Goldfields	Kimberley	Midwest	Pilbara	South Coast	Southern Forest	Swan	Wheatbelt	Total
National Park	37 467	86 397	696 876	504 808	2 396 630	892 150	221 264	35 186	1 292	4 872 070
Conservation Park	720	405	54 670	3 641	1 466	-	-	56 414	-	117 316
Nature Reserve	9 603	6 284 016	809 497	732 059	250 585	1 591 196	26 885	47 844	1 033 066	10 784 751
Marine Park	-	-	23 250	748 735	225 564	-	-	16 391	-	1 013 940
Marine Nature Reserve	-	-	-	132 000	-	-	-	-	-	132 000
State Forest	654 035	781	-	-	-	-	551 218	490 854	28 066	1 724 954
Timber Reserve	41 749	28 576	-	26 338	-	4 029	20 341	20 454	-	141 487
5g Reserve	30 970	82 987	79 623	2 316	8 617	2	232	26 750	440	231 937
Miscellaneous Reserve	354	27	61	517	1 779	3 813	470	5 950	7	12 978
Freehold (Exec Dir)	24 683	<1	<1	<1	<1	<1	5 300	3 887	<1	33 870
Leasehold (Exec Dir)	-	575 987	427 729	59 908	147 847	-	-	-	-	1 211 471
Totals	799 581	7 059 176	2 091 706	2 210 322	3 032 488	2 491 190	825 710	703 730	1 062 871	20 276 774

Source: Information Management Branch (TENIS)

National Parks Vested in the National Parks and Nature Conservation Authority

NAME	AREA (ha)	NAME	AREA (ha)
Alexander Morrison	8 500	Millstream-Chichester	199 736
Avon Valley	4 366	Moore River	17 540
Badgingarra	13 121	Mount Augustus	9 168
Beedelup	1 786	Mount Frankland	30 830
Boorabbin	26 000	Nambung	18 362
Brockman	49	Neerabup	1 069
Cape Arid	279 382	Peak Charles	39 959
Cape Le Grand	31 578	Porongurup	2 511
Cape Range	50 581	Purnululu	239 723
Collier Range	235 162	Rudall River	1 283 706
D'Entrecasteaux	115 787	Scott	3 273
Drovers Cave	2 681	Serpentine	4 360
Drysdale River	448 264	Shannon	52 598
<i>Eucla</i>	3 342	Sir James Mitchell	497
Fitzgerald River	329 039	Stirling Range	115 920
Francois Peron	52 529	Stokes	9 726
Frank Hann	67 550	Tathra	4 322
Geikie Gorge	3 136	Torndirrup	3 936
Gloucester	875	Tuart Forest	2 049
Goongarrie	60 397	<i>Tunnel Creek</i>	91
Gooseberry Hill	33	Walpole-Nornalup	15 861
Greenmount	58	<i>Walyunga</i>	1 812
Hassell	1 265	Warren	2 982
<i>Hidden Valley</i>	2 068	Watheroo	44 474
John Forrest	2 676	<i>Waychinicup</i>	3 982
Kalamunda	375	<i>West Cape Howe</i>	3 517
Kalbarri	183 004	William Bay	1 734
Karijini	627 445	Windjana Gorge	2 134
Kennedy Range	141 660	Wolfe Creek Crater	1 460
Leeuwin-Naturaliste	19 143	Yalgorup	13 001
<i>Lesmurdie Falls</i>	56	Yanchep	2 842
Lesueur	26 987	TOTAL	4 872 070

* Names shown in italics are not yet gazetted

Timber Reserves

Timber reserves declared under the CALM Act are managed on the same basis as State forests. The category is transitional; as reserves are evaluated they may be changed to a more appropriate tenure, e.g. State forest or nature reserve.

The area of timber reserves as at 30 June 1996 was 141 487 ha. There were no changes during the year.

Marine Reserves

Marine parks are managed for conservation and recreation, with areas zoned for commercial fishing on a sustained yield basis. Marine nature reserves are managed for the conservation of marine and terrestrial flora and fauna and their habitats. Fishing and collecting are not permitted.

The area of marine parks as at 30 June 1996 was 1 013 940 ha (approximately). The area of marine nature reserves as at 30 June 1996 was 132 000 ha (approximately). There were no changes during the year.

5(g) Reserves

Within the meaning of the CALM Act, land categorised as 5(g) reserve is land reserved under the Land Act (1933) which is vested in the NPNCA or the LFC. These reserves are not national park, conservation park, nature reserve or marine reserve. Immediately before the commencement of the CALM Act some were vested in, or under the control and management of, the National Parks Authority but not as a national park, e.g. Matilda Bay Reserve. Predominantly they have a conservation/recreation purpose.

The area of 5(g) reserves as at 30 June 1996 was 231 937 ha, a net decrease for the year of 230 ha.

Miscellaneous Reserves

There are some remaining reserves managed by CALM which do not fall within any of the above discrete categories. The purposes of reserves within this category are varied and may include settlements and offices for the Department's operations. The area of miscellaneous

reserves as at 30 June 1996 was 12 978 ha, an increase of 7 ha during the year.

Other Land

The area of freehold land held by the Executive Director as at 30 June 1996 was 33 870 ha. The major portion of this land is committed to commercial softwood forestry.

The area of pastoral leases held by the Executive Director as at 30 June 1996 was 1 211 471 ha, an increase of 207 755 ha during the year. This resulted from the acquisition of Cane River and Burnerbinmah Pastoral Leases.

Conservation Land Acquisitions

The Department acquired several areas of land for future addition to the conservation estate. The major land-purchases for the year were the Cane River Pastoral Lease, of 147 847 ha, about 100 km south-east of Onslow, and Burnerbinmah Pastoral Lease, of 59 908 ha, about 100 km south-west of Mt Magnet. These acquisitions are important in protecting biological communities unrepresented or poorly represented in the State's reserve system.

The other acquisitions are as follows: an area of 843 ha was bought as an addition to Fitzgerald River National Park; east of Chidlow, an area of 263 ha, formerly proposed as an industrial park, has been bought for conservation from Landcorp; two small areas of land, near Muchea and Gingin, were bought to preserve special plant associations on the highly cleared eastern side of the Swan Coastal Plain; and 40 ha of bushland south-west of Mt Barker was bequeathed to the Department in the estate of the late S.J. Gill.

CALM gratefully acknowledges money contributed by the Commonwealth, through the Australian Nature Conservation Agency, towards the purchases of Cane River Station and the Muchea and Gingin properties.

EMERGENCY ASSISTANCE

CALM mitigates bushfire threats by contributing to community bushfire planning, reducing fuels on CALM-managed lands, and fighting bushfires on and adjacent to private property. CALM also assists during oil spills, sea and land searches for lost people, and flood and cyclone emergencies. CALM was a major participant in the Ministerial working group investigating the Darling Escarpment hazard and assisted in the suppression of 26 fires over 1 000 hectares of private property in this area. Of these, 21 occurred in the metropolitan area, threatening the community or its assets.

CORPORATE SERVICES

Financial Services

CALM's financial systems are now positioning the Department to take advantage of the new financial management initiatives being set in the public sector. The Department implemented the Oracle commercial accounting system in 1991, and was a major initiator of the 'Net Appropriation' process that has made the Department more financially self-sufficient.

Financial Services has met evolving management information requirements and improved financial control and process flows through a number of projects. In general these involve greater use of electronic systems, more frequent reporting (e.g. monthly), and a thorough overhaul of procedures. Major projects include:

- conversion of the cash-based accounting system to meet the requirements of accrual accounting, with operating statements produced on a monthly basis;
- provision of better focused management reports to meet the requirements of business unit managers; and
- review of the Branch strategic plan based on customer requirements.

Staff of the Financial Services Branch have performed well in progressing these achievements.

Human Resources

There were selective offers of voluntary redundancy during the year. Eight wages and three salaried employees accepted an offer and ceased employment. Components of the information technology network were outsourced to the private sector, and two CALM employees accepted employment with those companies. By so doing they became eligible for additional financial benefits on ceasing employment with CALM.

An upgrade of the computerised personnel and payroll system improved efficiency. Customisation of the system will be an ongoing task because of the need to satisfy a range of reporting requirements.

Seventy-one salaried staff achieved career advancement by way of reclassifications and promotion to advertised vacancies.

In accordance with Section 31(1) of the Public Sector Management Act, human resource standards have been complied with in the following areas: recruitment, selection and appointment; transfer; secondment; performance management; redeployment; and discipline.

Only one application for a review of the standards was lodged during the reporting period of 1 January 1996 to 30 June 1996. This was for an alleged breach of a performance management standard, but the employee resigned before the breach claim was processed.

Industrial Relations

CALM's commitment to workplace reform has continued with the offer of Workplace Agreements to CALM employees, 370 of whom entered into an Agreement during the past year.

The Enterprise Bargaining Process has been brought to a successful conclusion. Enterprise Bargaining Agreements have been reached with each of the five unions representing CALM's various occupational groups. Four of these Agreements have been certified and are operative, while the remaining Agreement has been lodged with the Federal Industrial Relations Commission, and is awaiting a hearing date.

The second \$8.00 per week 'safety net' pay rise has also been awarded to all employees in CALM, except those covered by the Pilots Federation. In each case the attendant Award review process has begun.

CALM and the Australian Workers Union have also entered into eight Certified Agreements which allow for more flexibility and increased productivity within a local work area, whilst enabling employees to achieve higher remuneration during the life of the project(s) to which the agreement applies.

Each of these Agreements was negotiated at a local level through the Joint Consultative Committee structure.

CALM has appeared in the State and Federal Industrial Relations Commissions on 11 occasions.

Risk Management

The development and issue of a policy statement on risk management in relation to visitors to the CALM estate was an integral step in establishing a consistent and professional approach to the identification, management and minimisation of potential risks to visitors. By placing an emphasis on visitor risk management practices, CALM will be able to:

- further minimise the risk of injury to visitors to CALM-managed lands and waters;
- enhance the quality and delivery of recreation and tourism services for the public;
- demonstrate a professional approach to upholding our duty of care in a manner which enhances CALM's

reputation for caring and efficient stewardship of lands, water and wildlife resources; and

- contain the escalating cost of claims and public liability insurance premiums.

Occupational Safety and Health Performance Indicators:

	1995-96	1994-95
Lost Time Injury Frequency Rate	17	19
All Injury Frequency Rate	64	56
Number of Lost Time Incidents	50	38
Number of Days Lost	1 232	976
Annual Workers' Compensation Premium	\$689 672	\$549 540

One hundred and forty-one work groups achieved predetermined safety targets and were presented with awards under the IFAP/GIO Safeway Award scheme. For the third successive year CALM was the most successful participating organisation.

CALM continues in its commitment to improving the health and fitness of employees. Through a Healthway grant, 40 of our staff throughout the State have received training to act as peer health and fitness leaders in their various locations.

All new employees to CALM who are required to participate in fire suppression duties must demonstrate a predetermined level of fitness prior to employment.

Training and Development

Sixteen Environmental Management graduates from various tertiary institutions were appointed in June 1995 as CALM Field Officers. Of the 16 recruits:

- eleven were appointed as Forest Officers;
- three were appointed as Reserves Officers; and
- two were appointed as Trainee Wildlife Officers.

All of the recruits had access to 10 weeks of skills-based training. These programs include: 4-Wheel Drive Operators' Course; Field Engineering; Fire Management; Recreation, Planning and Design; Chainsaw Operators; Disease Management; Forest Silviculture; Coupe Demarcation/Certification; and Senior First Aid. Each of these training programs is recognised by the Australian National Training Authority.

CALM has been registered to provide a further 11 nationally recognised training programs and short courses. These build on the 27 courses that were accredited early in 1995.

As training course participants complete training programs and are assessed as competent, they will receive a certificate, which will be recognised throughout the industry within Australia.

Planning and Policy

CALM has established a Human Resource Reference Group, comprised of representatives from all Divisions, as a platform upon which to build a program of continuous review, evaluation and improvement in the management of the Department's human resources. The Reference Group provides input to the processes of policy development and formulation, which are a key responsibility of the Human Resources Branch.

Information Management Branch

Information Management Branch provides CALM's information technology infrastructure, manages the corporate records and documents system, maintains the Department's corporate geographic information system, and provides its land data service.

During the year, CALM's data centre, and the management of its local area networks and desktop support, were all outsourced to the private sector. The branch installed the Department's Internet gateway, and undertook a project to develop corporate information management policies and procedures. Evaluation of electronic document and file management systems was also begun.

The inaugural set of 49 map sheets of the new CALM coloured operational graphics were produced, for use by CALMfire and by forest regional and district offices. The branch continued to consolidate its corporate spatial data set, completed digitising CALM plantations, and provided plantation resource information. Geographical analysis and maps were provided for the Deferred Forest Assessment process, and special maps were produced for Western Shield and the Bibbulmun Track initiatives. Development and rollout to regional centres of the tenure information system TENIS were continued, and new State and south-west tenure maps were produced.

FIRE MANAGEMENT

Wildfires

The 1995–96 fire season was characterised by long and dry summer conditions with northern forest regions experiencing a near-record run of consecutive days with maximum temperatures exceeding 35°C. CALM attended large numbers of wildfires in these areas, particularly in the Mundaring (105) and Perth (134) Districts, in which 52 per cent and 75 per cent were deliberately lit.

South coastal regions by contrast experienced milder conditions. Wildfires attended in central and southern forests were considerably lower than in previous years, with CALM's Blackwood District in particular attending only three fires in both native forests and softwood plantations. Two large fires burnt out 24 000 hectares in the Stirling Range National Park and 10 150 hectares in the Lake Shaster and Stokes National Park and the Nuytsland Nature Reserve east of Esperance.

Other wildfires in the Midwest Region saw both Wannagarran and Nilgen Nature Reserves significantly affected. The remote eastern and northern regions of the State experienced large fires in the Goongarri National Park and Mount Manning Range Nature Reserve (Goldfields) and in the Rudall River National Park and at Mount Windell (Pilbara). A record number of fires was recorded in the Kimberley Region, satellite imagery showing that nine million hectares was burnt. However, the fires in CALM's national park and nature reserve estate were restricted to small areas, mainly because of aerially ignited burn buffers created in the parks and reserves. Notable saves from these burnt buffers were observed in the Drysdale River and Purnululu National Parks and the Prince Regent Nature Reserve.

Prescribed Burning

Favourable spring and autumn conditions allowed large prescribed burning programs to be completed in the northern jarrah forest. This partly offset the back-log of burning that had accumulated over the last 10 years. Overall the prescribed burning program in the forest regions achieved 233 758 hectares. Vegetation management burns were also conducted in 82 070 hectares of CALM-managed reserves in remote regions and 430 kilometres of aerial ignition buffers were established in national parks and nature reserves in the Kimberley. Ground aircraft navigation systems for prescribed burning using beacon vehicles and flares were successfully replaced with onboard Global Positioning System and computer-based navigation systems.

Equipment Development

Ten large fire tankers (heavy duty) were constructed to replace CALM's ageing firefighting fleet. The new heavy-duty design includes a low profile 2 700 litre tank with a large diesel-driven pump and many new safety features.

Decision Support Systems

CALMfire's computer-based information management system (FireSupport) was piloted in the forest regions in 1994–95 and became fully operational in 1995–96. It provides managers with daily weather and fire prediction data and records wildfire and prescribed burning

information. Data input to the central FireSupport system by CALM districts was continuously available to region and State fire coordinators, thus allowing regular monitoring and comparisons of wildfire incidence and prescribed burning achievements.

Interagency Cooperation

Significant advances were made by State agencies in cooperative fire management. These occurred at tripartite levels between CALM, the WA Fire and Rescue Service, and the Bush Fires Board. A Partnering Agreement was established between CALM and the Fire and Rescue Service. These arrangements allowed an integrated and non-duplicative approach to fire prevention, fire

operations and human resource management. Issues addressed included risk management, training, the development of a State arson strategy and database, and public education.

CALM has also worked cooperatively with the Bureau of Meteorology and the Department of Environmental Protection on smoke management from CALM prescribed burning. This has included the development of predictive models and operational guidelines as well as communications planning for the media and the public. The guidelines have helped to limit the incidence of smoke haze from prescribed burning in Perth's metropolitan area to fewer than five days throughout the fire season.

CALM Disability Service Plan

In 1995–96 CALM developed a plan to improve access to its buildings, facilities, services and programs. We identified six objectives:

- adapt services to ensure that they are accessible to people with disabilities;
- make offices, visitor centres and other key contact points accessible to people with disabilities;
- where practicable and appropriate, provide outdoor recreation areas and facilities that meet the needs of everyone, including people with disabilities;
- ensure that advice and services are delivered by CALM staff who are aware of and understand the needs of customers with disabilities;
- enable people with disabilities to take part in decision making processes, public consultations and complaint mechanisms; and
- provide and maintain equal employment opportunities for people with disabilities.

The Department set up a steering committee to put the plan into action. By the end of the year, the Tree-Top Walk at the Valley of the Giants had been built with access for people with disabilities, including assisted access for wheelchair users; and work had begun on a tent camping area in the Hills Forest Activity Centre precinct. The tent area is being developed with support from ACROD WA and incorporates 'universal access' design principles.

CALMfire PERFORMANCE INDICATORS FOREST REGIONS 1995-96

Key Effectiveness Indicators 1 & 2

I. Prescribed Burning

The reduction of fuels in Priority 1 zones to a satisfactory condition in 90% of designated areas and in Priority 2 zones in 75% of designated areas.

Region	Priority 1 (%)		Priority 2 (%)	
	1994-95	1995-96	1994-95	1995-96
Swan Region	42.7	48.8	40.1	49.1
Central Forest Region	83.9	89.0	80.9	83.6
Southern Forest Region	62.9	69.7	61.1	71.0

Notes:

The base data have been collected manually from region and district plans and from CALM's FireSupport System and associated MS Access relational database programs.

The Performance Indicators assume (i) jarrah to be tolerant to prescribed fire from age 10 years and karri from age 20 years and that (ii) 80% of jarrah fire tolerant regrowth exceeding 10 years and 50% of karri fire tolerant regrowth exceeding 20 years is returned to prescribed burning programs.

1994-95 and 1995-96 Performance Indicators exclude areas that are not available for burning due to the presence of (i) fire sensitive regeneration and mining rehabilitation (ii) hardwood and softwood plantations (iii) stream reserves and temporary exclusion zones and (iv) No Planned Burn and scientific study reference areas.

Prescribed burning achievements relative to CALM's Wildfire Threat Analysis (WTA) benchmarks were influenced in 1994-95 and 1995-96 by increased burn complexity from the need to maintain the above mosaic of fire free areas.

Definitions:

- **Priority 1** refers to "essential prescribed burns" necessary for the protection of human life, community values and rare, threatened and fire vulnerable species of flora and fauna and major forest plantations. **Priority 2** refers to "important prescribed burns" necessary for the protection of broad nature conservation values.

- **Satisfactory condition** means forest fuels available for burning will not exceed 7.5 to 8.5 tonnes per hectare in jarrah and 15.0 to 19.0 tonnes per hectare in karri. Under these fuel conditions headfire attack will be successful on days except when the fire danger is very high or extreme.

- **The 90% and 75% fuel reduction limits** provide the minimum level considered necessary for the protection of community and nature conservation values.

- **Designated areas** are forests where prescribed burning is an allowed landuse and where areas are available for burning. The need to protect jarrah and karri regeneration after timber harvesting renders these areas unavailable for prescribed burning for between 10 and 20 years.

2. Fire Suppression

In 95% of fires attended under 95 percentile weather conditions, the commencement of attack with effective suppression forces, before fires exceed 1 ha in Priority 1 areas and 2 ha in Priority 2 areas.

Region	Priority 1 (%)		Priority 2 (%)	
	1994-95	1995-96	1994-95	1995-96
Swan Region	98	95	100	80
Central Forest Region	100	100	90	100
Southern Forest Region	100	100	92	100
CALM AVERAGE	99	98	94	93

Definitions

- **Suppression forces** are prescribed in CALM's Red Book Dispatch Tables for fire crews and equipment and by Wildfire Threat Classes.
- **The 95 percentile weather conditions** are days when fire danger is below very high and extreme. Firefighters work safely and effectively under these conditions in standard forest fuels.

CALMfire PERFORMANCE INDICATORS FOREST REGIONS 1995-96

Key Efficiency Indicators 1 & 2

I. Prescribed Burning

The 4-year-averaged rolling cost of achieving prescribed burning to meet Key Effectiveness Indicator #1 should not exceed \$7.64 per ha.

Year	Cost (in 1995-96 \$)	Area (hectares)	Unit Cost (\$/hectare)
1992-93	1 128 764	270 682	4.17
1993-94	1 729 586	250 830	6.90
1994-95	2 165 594	260 846	8.30
1995-96	2 225 216	233 758	9.52
Averaged Rolling Cost (over nine years)			7.22

Notes:

The rolling average for unit costs has been reduced from 10 to 4 years because salaries and wages components including leave, leave loading, workers compensation and overheads were previously allowed in CALM's central budget. Because these cost components are now included in the fire management budget only the last four years provide meaningful comparisons.

The unit burning cost standard has been adjusted to take account of indirect wages and salaries costs not accounted for in previous years (23-32%) and increases in on-site vehicle hire costs (5%) and wages and salaries (15%). Consumer Price Index movements (All Groups Perth) of 2.552% from June 1995 to June 1996 were used to adjust previous years costs to 1995-96 values.

1995-96 unit burning costs were influenced by additional wages overtime incurred in the large Swan Region program and a 22% increase in more costly Central Forest Region jarrah regeneration and silviculture burning.

Definitions:

- **Averaged rolling costs** allow comparisons between fire seasons by smoothing environmental variations, operational and budgeting variations.

2. Fire Suppression

The cost of meeting Key Effectiveness Indicator #2 shall not exceed the 4-year-rolling averaged costs for fire suppression and preparedness in the forest regions.

Year	Region	Preparedness Cost (\$)
PREPAREDNESS		
1993-94	Swan Region	827 732
	Central Forest Region	1 543 750
	Southern Forest Region	957 776
Total		3 329 258
1994-95	Swan Region	884 154
	Central Forest Region	1 426 592
	Southern Forest Region	1 134 216
Total		3 444 962
1995-96	Swan Region	1 181 119
	Central Forest Region	1 910 472
	Southern Forest Region	1 811 112
Total		4 902 703
Three-Year-Averaged Preparedness Costs		3 892 308

Year	Region	Actual Suppression Cost (\$)
SUPPRESSION		
1993-94	Swan Region	633 469
	Central Forest Region	681 596
	Southern Forest Region	787 900
Total		2 102 965
1994-95	Swan Region	1 634 521
	Central Forest Region	1 069 870
	Southern Forest Region	436 883
Total		3 141 274
1995-96	Swan Region	817 909
	Central Forest Region	542 460
	Southern Forest Region	293 726
Total		1 654 095
Three-Year-Averaged Suppression Costs		2 299 455

Notes:

Effective fire suppression preparedness limits fire suppression activity. The cost of fire suppression preparedness should therefore balance or exceed the cost of fire suppression.

Preparedness costs for 1995-96 were increased due to additional pre-suppression planning, water point and fire equipment maintenance and increased prescribed burning costs.

Definitions:

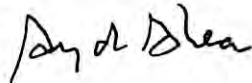
- **Preparedness costs** comprise prescribed burning firebreak and water point installation and maintenance, fire detection, the construction and maintenance of firefighting equipment, fire standby and detention and fire planning and training.

Legislation and Compliance

1995-1996

STATEMENT OF COMPLIANCE WITH WRITTEN LAW

We have attempted to comply with the requirements of relevant written law, as originally enacted and as variously amended. Steps have been taken to rectify minor errors and omissions detected during 1995-96. The relevant Acts and amendments are noted in this section of the annual report.



Syd Shea
Executive Director
30 August 1996

ACTS ADMINISTERED

- *Conservation and Land Management Act 1984*
- *Sandalwood Act 1929*
- *Wildlife Conservation Act 1950*

On behalf of the people of Western Australia, the department manages national parks, conservation parks and marine parks, State forests and timber reserves, nature reserves and marine nature reserves, and any associated fauna, flora and forest produce. It is also responsible for conserving flora and fauna throughout the State.

The *Conservation and Land Management Act 1984* (CALM Act) established CALM and three State controlling bodies: the Lands and Forest Commission, the National Parks and Nature Conservation Authority, and the Forest Production Council. All are responsible to the Hon Minister for the Environment. Their functions are described in separate annual reports.

MINING AND GOVERNMENT AGREEMENTS ACTS

The CALM Act does not protect land managed by the department from mining or development projects. Section 4 of the CALM Act states

that nothing in the Act shall take away from the operation of any Act relating to minerals or petroleum or any Agreement Act for a development project. Agreement Acts (eg the *Alumina Refinery Agreement Act 1961*) are administered by the Minister for Resources Development. The CALM Act cannot impose restrictions on mining or on development projects subject to an Agreement Act. The requirements for mining and development projects with respect to land managed by the department are stated in the *Mining Act 1978* and the individual Agreement Acts. The requirements of the *Environmental Protection Act 1986* also need to be satisfied with such projects on land managed by the department.

- The following mining and petroleum Acts prevail over the CALM Act: *Mining Act 1978*; *Petroleum Act 1967*; *Petroleum Pipelines Act 1969*; *Petroleum (Submerged Lands) Act 1982*.

Agreement Acts which involve clearing land managed by CALM, or which require access to forest resources, also include specific responsibilities for the department. The bauxite and coal operations predominantly require permission

to be given by the department for the companies to harvest the timber before mining.

- The Agreement Acts with specific departmental responsibilities include: *Alumina Refinery Agreement Act 1961*; *Alumina Refinery (Worsley) Agreement Act 1973*; *Collie Coal (Griffin) Agreement Act 1979*; *Collie Coal (Western Collieries) Agreement Act 1979*; *Dardanup Pine Log Sawmill Agreement Act 1992*; *Silicon (Kemerton) Agreement Act 1987*; *Wesply (Dardanup) Agreement Authorisation Act 1975*; *Wood Chipping Industry Agreement Act 1969*.

The *Mineral Sands (Eneabba) Agreement Act 1975* affects the department's management of the land involved in the project.

The establishment of hardwood plantations by way of timber sharefarming agreements with CALM under section 34B of the CALM Act have been ratified by the following *Agreement Acts*: *Albany Hardwood Plantation Agreement Act 1993*; *Bunbury Treefarm Project Agreement Act 1995*; and the *Collie Hardwood Plantation Agreement Act 1995*.

OTHER RELEVANT ACTS

The Act which probably influences the management of land by CALM most frequently is the *Bush Fires Act 1954*, which has requirements for the department with respect to fires on land managed by the department.

Other State Acts which have relevance to CALM's operations and role as an employer include -

Aboriginal Heritage Act 1972; Aerial Spraying Control Act 1966; Agriculture and Related Resources Protection Act 1976; Agriculture Protection Board Act 1950; Beekeepers Act 1963; Control of Vehicles (Off-Road Areas) Act 1978; Country Areas Water Supply Act 1947; Dividing Fences Act 1961; Energy Corporation's (Powers) Act 1979; Electricity Corporation Act 1994; Environmental Protection Act 1986; Equal Opportunity Act 1984; Explosive and Dangerous Goods Act 1961; Financial Administration and Audit Act 1985; Fish Resources Management Act 1994; Freedom of Information Act 1992; Government Employees Housing Authority Act 1964; Health Act 1911; Heritage of Western Australia Act 1990; Industrial Relations Act 1979; Land Acquisition and Public Works Act 1902; Land Act 1933; Local Government Act 1960; Metropolitan Water Supply, Sewerage and Drainage Act 1909; Minimum Conditions of Employment Act 1993; Misuse of Drugs Act 1981; Mutual Recognition (Western Australia) Act 1995; Occupational Health, Safety and Welfare Act 1984; Occupiers Liability Act 1985; Public Sector Management Act 1994; Reserves Act 1994 and Reserves Act (No. 2) 1994; Soil and Land Conservation Act 1945; State Employment and Skills Development Authority Act 1990; State Supply Commission Act 1991; Swan River Trust Act 1988; Timber Industry Regulations Act 1926; Town Planning and Development Act 1928; Water Agencies Restructure (Transitional and Consequential Provisions) Act 1995; Water and

Rivers Commission Act 1995; Water Corporation Act 1995; Water Services Coordination Act 1995; Workers' Compensation and Rehabilitation Act 1981; Workplace Agreements Act 1993.

- Commonwealth Acts relevant to the department's activities: *Arts, Territories and Environment Act 1975; Native Title Act 1993; Training Guarantee Administration Act 1990; Whale Protection Act 1980; Wildlife Protection (Regulation of Exports and Imports) Act 1982; World Heritage Properties Conservation Act 1983.*
- International agreements relevant to the department's activities: *Agreement between the Government of the People's Republic of China and the Government of Australia for the Protection of Migratory Birds and their Environment; Agreement between the Government of Japan and the Government of Australia for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment; Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Agreement); Convention on International Trade in Endangered Species of Wild Fauna and Flora; Convention for the Protection of the World Cultural and Natural Heritage; Convention on the Conservation of Migrating Species of Wild Animals; Convention on Biological Diversity.*

CHANGES IN LEGISLATION

Minor Amendments to Acts

The *Fish Resources Management Act 1994* made minor amendments to the CALM Act and the *Wildlife Conservation Act 1950*. Similarly minor amendments to the CALM Act were made by the *Water Agencies Restructure (Transitional and Consequential Provisions) Act 1995*.

Visitors and Camping in State Forests and Timber Reserves

The *Forest Management Regulations 1993* were amended by the *Forest Management Amendment Regulations 1996* to enable the collection of visitor fees to State forests and timber reserves and particularly for the Tree Top Walk located within the Valley of the Giants, Walpole. Management of camping was also refined and infringement notices were introduced for camping offences and the failure to pay fees.

Firewood Collection

The *Forest Management Regulations 1993* conditions regarding public firewood areas were amended by the *Forest Management Amendment Regulations (No. 2) 1995* and the *Forest Management Amendment Regulations (No. 2) 1996*. The weight of each load taken from a public firewood area and the frequency with which the loads can be taken were refined in these amendments.

Sandalwood

The *Sandalwood Regulations 1993* were amended by the *Sandalwood Amendment Regulations 1996* to require licence applicants to provide evidence of lawful authority to clear certain land; to enable licences to be issued for a term of up to five years; and to remove a transitional provision which ceased to be relevant one year after the regulations came into effect in 1993.

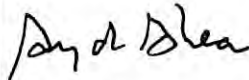
Public Sector Management

Public Sector Management (Review Procedures) Regulations 1995, made under the *Public Sector Management Act 1994* became operative 1 January 1996. The regulations provide for application of the process of independent review of alleged breaches of the Public Sector Standards gazetted in September 1995 and operative, with one exception, from 1 January 1996. The Public Sector Standard on Performance Management became operative from 1 March 1996.

Performance Indicators

Management Programs

I certify that these performance indicators are based on proper records and fairly represent the performance of the Department of Conservation and Land Management for the year ended 30 June 1996.



Syd Shea
Executive Director
15 August 1996

NATURE CONSERVATION Management Program I

Objective

To conserve indigenous plants, animals and ecological processes in natural habitats throughout the State.

BACKGROUND

The management of threatened taxa for their conservation in Western Australia is based firstly on the listing of these taxa in appropriate categories as determined by the level of threat and the level of available knowledge.

Management of listed taxa is coordinated through management programs, recovery plans or interim recovery plans, prepared for individual taxa or for all taxa in a CALM administrative region or district. Area-based management plans facilitate integration of management actions, the setting of priorities for management actions, and the identification of common threats which may be managed for the benefit of a range of taxa.

The objective of threatened taxa management is to enable threatened taxa to be de-listed, or re-listed in less threatened categories, and to obtain the necessary information for poorly known taxa to categorise them properly.

Given the probabilistic nature of the categories of threat, and the long term nature of threatened taxa recovery, significant management actions may occur before a taxon moves from one category to a lower risk category. The measure of such movements thus will occur over long time periods.

KEY EFFECTIVENESS INDICATORS

- 1. The number of the State's wildlife taxa listed as either threatened or requiring special conservation attention, compared to previous years.**

Measure

A total of 2 505 taxa (2195 flora and 310 fauna) were declared to be specially protected, or included on the Department's priority flora and fauna lists, at the end of 1995-96. This represents an increase of 13.6% in the number of taxa listed as requiring special conservation status compared to 1994-95.

Notes

A taxon (plural taxa) is a term for any classificatory group of organisms, including species, subspecies and varieties. The indicator refers to the number of the State's wildlife taxa that are either:

- declared to be specially protected by the Minister for the Environment under the Wildlife Conservation Act 1950, that is, taxa that are considered to be either rare, likely to become extinct, or otherwise in need of special protection; or
- listed by the Department as priority flora or fauna, that is, taxa that are either poorly known but potentially in need of special protection based on the information available, or rare but not currently threatened and in need of monitoring.

The increase in the number of taxa listed is a reflection of the Department attaining a better knowledge base of the State's wildlife through taxonomic study, curation of collections, databasing of information, and field investigations, and does not in itself represent a deterioration in the conservation status of the State's wildlife.

2. The number, and proportion, of the State's threatened and priority taxa that are covered by management programs or recovery plans.

Measure

Number of Taxa Covered by Management Programs

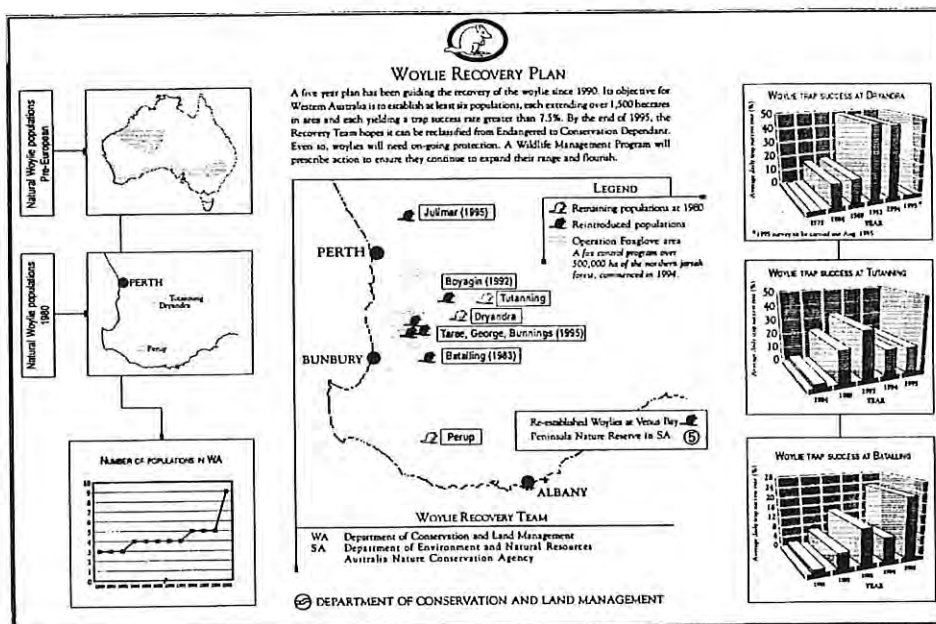
Status of Management Program/Recovery Plan	Number of Taxa Covered by Management Programs				Overall %
	Threatened Flora	Priority Flora	Threatened Fauna	Priority Fauna	
Completed and Being Implemented	123	266	11	0	16.0
Drafted	67	146	3	0	8.6
In Preparation	84	586	1	0	26.8
None	55	868	145	150	48.6

Notes

The above table represents the current status of threatened and priority flora and fauna in formal management programs in Western Australia. 'In Preparation' represents a research phase where biological and management information is obtained for the taxa which will provide the basis for future management and recovery. 'Drafted' represents the completion of at least the initial research phase and the preparation of management prescriptions. Implementation of the completed management program represents the actual management and/or recovery phase of the program.

3. The recovery of threatened taxa as a consequence of specific management actions as demonstrated through case examples.

Measure



Notes

The above diagram presents data on the implementation of the Woylie Recovery Plan. Recovery actions for the Woylie, primarily through the control of the threat imposed by predation

KEY EFFICIENCY INDICATOR

The change in number of the State's wildlife taxa on conservation lists, relative to the resources used, compared to previous years.

Measure

Recurrent expenditure in the program totalled \$28.16 million, an increase of 7.4% over 1994-95. This increase was accompanied by an overall increase of 13.6% in the taxa requiring special conservation attention.

Notes

The total cost of services for the program using accrual accounting was \$29.142 million. Because there is no equivalent 1994-95 figure to compare this with, the 1995-96 recurrent figure has been retained for this year's indicator. However, the 1996-97 and future indicators will be based solely on accrual data.

FOREST RESOURCES Management Program 2

Objective

To sustain, regulate and profitably manage the forest resources entrusted to the Department in ways compatible with conservation and other management objectives.

Definitions

Sustain means to manage forest resources in a way which can be continued indefinitely.

Regulate means to control the average quantity of log timber sold such that the available sustainable resource is not exceeded over a period of time.

Profitably manage means to generate a level of revenue from the sale of forest resources which exceeds the program expenditure.

Forest Resources comprises native hardwood forest on State Forest and Timber Reserves, and plantations and sandalwood resource on Crown Land.

KEY EFFECTIVENESS INDICATORS

1. The harvest from the native hardwood forest will be maintained at a sustainable level.

(a) Quantity of log timber harvested.

Notes

The sustainable level is the average quantity of timber available for harvest each year which can be continued in the long term.

Forest areas available for timber harvesting are measured using specially designed inventory plots to determine the quantity of timber available and the rate at which it is growing.

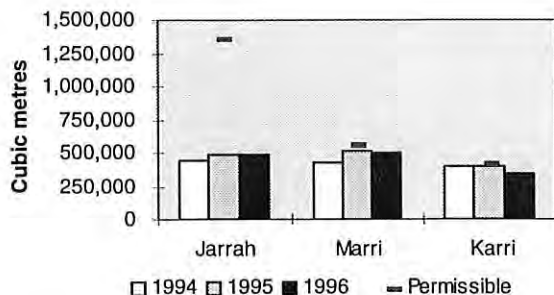
Based on independent analysis of this information, the Government determined the estimated sustainable level of harvest approved for the term of the current Forest Management Plan.

Harvest means the commercial extraction and sale of log timber for processing and value-adding.

Measure

The quantity of log timber harvested compared with the estimated sustained yield determined by Government.

Quantities for this year were jarrah 489 196 m³, marri 502 151 m³ and karri 346 806 m³. Trends over recent years are:



(b) Area of forest regenerated.

Notes

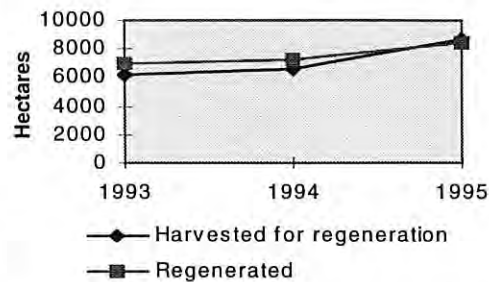
Forest is harvested using a variety of silvicultural prescriptions, some of which involve thinning to increase growth, and others which involve removal of trees and renewing those areas of forest by regeneration.

Regeneration takes place over a period of time and regeneration actually completed in any one year may include parts of areas harvested over a number of preceding years.

Measure

The area of forest actually regenerated compared with the area of forest harvested for regeneration.

The area of forest harvested for regeneration this year was 8 620 ha, while a total of 8 380 ha was regenerated from this or previous year's cutting. Trends over recent years are:



2. The quantities of sawlogs harvested each year from Crown land will be regulated by contractual agreements.

Notes

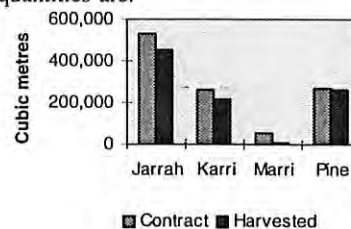
Regulate means to control the average quantity of log timber sold such that the available sustainable resource is not exceeded over a period of time.

The quantity of timber harvested is controlled by sale contracts.

Measure

The actual quantities of sawlogs harvested compared with the quantities specified in sale contracts.

Quantities for this year were jarrah 453 424 m³, marri 9667 m³, karri 213 421 m³ and pine 264 989 m³. Comparisons with contracted quantities are:



3. The Forest Resources management program will be managed profitably.

Notes

Program expenditure comprises the capital and recurrent cost of managing, growing and protecting the forest resource, the cost of harvesting, delivering and sales of log timber. Corporate overheads are included.

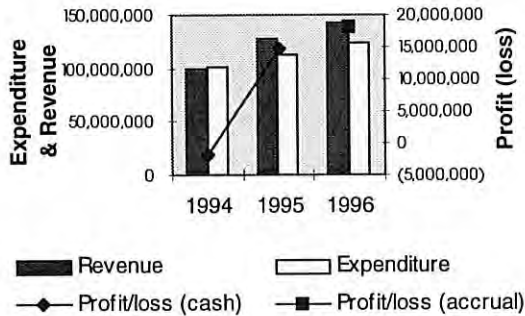
Program revenue comprises the sales of log timber which includes royalties, stumpages and other log timber charges related to harvesting, delivery and log sales.

The 1993-94 and 1994-95 revenue and expenditure were calculated on a cash basis and are not comparable to 1995-96. The 1995-96, and future figures, are on an accrual basis due to a change in Government accounting policy.

Measure

Comparison between Program revenue and operating expenditure.

Total revenue this year was \$141 944 000 compared with expenditure of \$123 742 000 Trends over recent years are:



4. The area of plantations established will meet defined objectives.

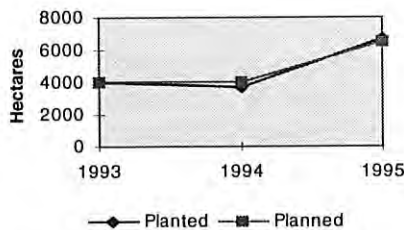
Notes

Plantations are established on both Crown land and Private land directly for the Government and acting as agents for private companies.

Measure

Area of plantations established compared with the target area planned for planting to meet the defined objectives. Figures are presented for the last complete planting year.

Total area planted this year was 6 745 ha compared with a target of 6 500 ha. Trends over recent years are:



General Note

Comparison with other organisations is not possible for the whole Forest Resources Program due to the unique combination of resources and management requirements.

KEY EFFICIENCY INDICATORS

1. Cost of harvesting and sales compared with revenue generated.

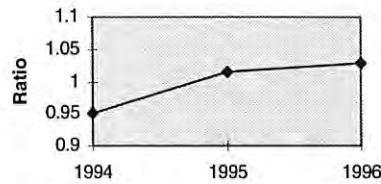
Notes

These are costs incurred in managing the harvesting delivery and sales of log timber and should be fully recouped from the revenue generated, equating to a ratio of not less than 1.0.

Measure

Ratio of revenue to expenditure for harvesting and sales (in-forest costs, roading, administration, harvesting and delivery).

Revenue for this year was \$61 063 000 compared with expenditure of \$59 353 000 Trends over recent years are:



2. Cost of management compared with revenue from royalties and stumpages.

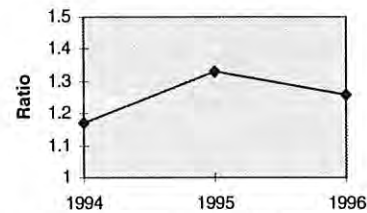
Notes

Royalties and stumpages are the value per unit of log timber by which the forest owner recoups the cost of managing, growing and protecting the forest whilst achieving a profitable rate of return over time.

Measure

The ratio of revenue from royalties and stumpages to expenditure on managing, growing and protecting the forest.

Revenue for this year was \$80 881 000 compared with expenditure of \$64 389 000. Trends over recent years are:



3. Profit compared with total sales.

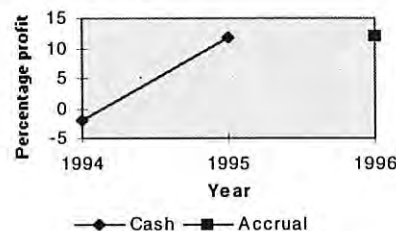
Notes

The percentage profit in 1993-94 and 1994-95 is shown on a cash basis, whilst 1995-96 is on an accrual basis.

Measure

Profit as a percentage of total sales.

Profit for the year was \$16 830 000 from sales of \$140 572 000 Trends over recent years are:



TOURISM AND RECREATION Management Program 3

Objective

To identify, provide and maintain opportunities and services to the community which allow them to enjoy the wildlife, lands, waters and resources entrusted to the Department without compromising conservation and other management objectives.

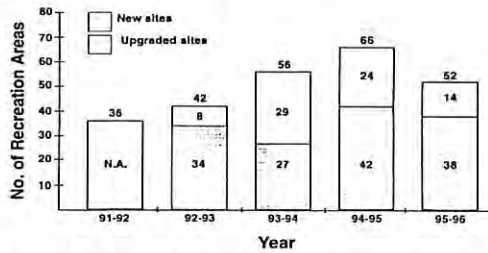
KEY EFFECTIVENESS INDICATORS

1. The provision of appropriate recreation opportunities and services for the enjoyment of the public.

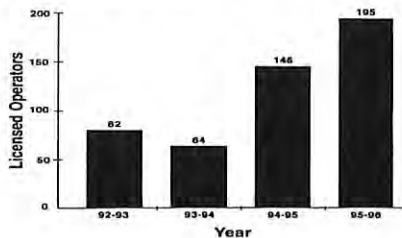
Measures

- Fourteen new recreation sites were developed, and facilities and public access were significantly upgraded at an additional 38 sites. This total of 52 new or improved recreation areas compares with the previous year's total of 66.

Recreation areas are upgraded or developed in accordance with recreation site development plans and design documentation approved by CALM Landscape Architects. This procedure ensures consistency in design and standards of provision whilst protecting conservation and landscape values.



- The number of commercial tour operators licensed under the CALM Act Amendment Regulations 1993 for the year ending 30 June 1996 totalled 195, with 31 applications pending assessment. This represents a 34 per cent increase of registered operators over last year. Operators provide approved tours and activities for visitors in conservation areas according to the terms and conditions of their licences which contain necessary provisions to protect conservation values of the areas visited.



Notes

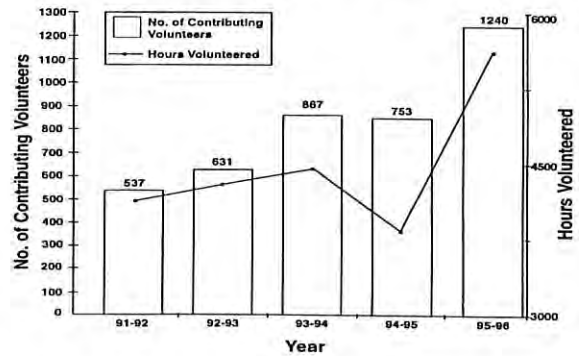
A recreation area is a place, usually with improved access and facilities, in which the public participate in leisure-time activities or experiences, eg camping and picnic areas. A recreation facility is a physical means or equipment associated with a recreational area or experience, eg roads, tables, bird hides, toilets.

CALM is establishing a Statewide recreation and tourism information system to provide an integrated inventory of facilities and services. The concept can be expanded to incorporate financial human resources and other data relevant for assessing the extent of provision of opportunities and constraints to provision. The database will inventory facilities, recreation sites and features; record budgets for asset management and maintenance; and incorporate visitor statistics and research data.

2. The extent to which the public has shown interest/support for CALM's tourism and recreation program.

Measures

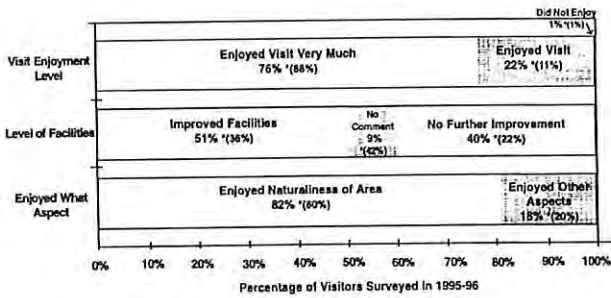
- Thirty seven new community volunteer projects were initiated in 1995-96. The number of volunteer hours spent on tourism and recreation programs this year was 58 000. The number of registered volunteers has increased to 2 677.



Note

There has been a marked increase in the number of volunteers and hours worked due to the resumption of the Turtle Tagging Project in the Kimberley and Pilbara Regions and expanded involvement of CALM volunteers in surveys and research programs. The level of volunteer involvement indicates continued public support for CALM's management programs and the agency's ability to balance competing landuses to aid public enjoyment and protect conservation values.

- CALM conducted visitor surveys throughout the State. On average 76 per cent of visitors enjoyed their visit very much, 82 per cent especially enjoyed the naturalness of the areas, but 51 per cent would like to see improved facilities and services; in particular, better access roads, toilets and other recreation site facilities were requested.



* (Figures recorded in 1994-95).

KEY EFFICIENCY INDICATOR

I. Cost per visit.

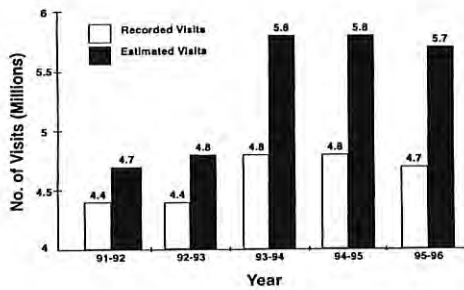
Measure

- The cost of providing CALM's tourism and recreation services in 1995-96 was \$4.24 per recorded visit. This cannot be directly compared to 1993-94 or 1994-95 because the current year's figures are based on accrual accounting whereas past figures are based on cash accounting.

3. The number of visits to CALM managed areas.

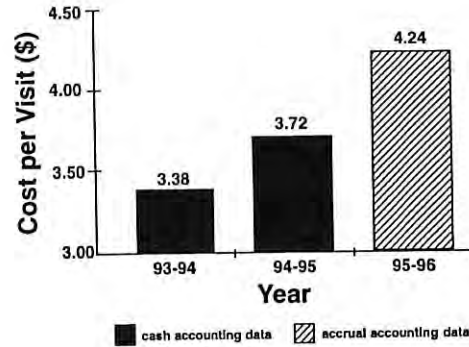
Measure

- Visitor statistics indicate that the number of recorded visits to CALM lands and waters for 1995-96 was 4 700 000. This is a two per cent decrease over last financial year's recorded visits of 4 800 000.



Note

Data are collected throughout the year at 129 registered sites around the State. The estimated total number of visits to CALM managed areas is inferred from the recorded figures. The estimated total number of visits in 1995-96 is 5.7 million as compared to an estimated total of 5.8 million in 1994-95.



Note

The 1995-96 index of efficiency is based on the net cost of services of the Program from the Program Schedule of Expenses and Revenues in relation to the total number of recorded visits to CALM-managed lands. The 1993-94 and the 1994-95 figures are based on net total recurrent expenditure adjusted in line with the Consumer Price Index.

ASTRONOMICAL SERVICES Management Program 4

Objective

To meet the demand for general and specialised up-to-date astronomical information and services from the public and educational community while furthering scientific research in astronomy in conjunction with other observatories and local tertiary institutions.

KEY EFFECTIVENESS INDICATORS

1. The level of customer satisfaction with the services provided by the Observatory.

During 1995-96,

- 5 429 people visited the Observatory,
- 3 797 people used the recorded information line, and
- 12 024 people telephoned seeking information.

The level of customer satisfaction with the services provided by Perth Observatory was measured by survey. The survey asked questions on many areas of the Observatory's services with the overall satisfaction being determined by the answer to the question, 'How satisfied were you with the services provided by Perth Observatory?'

Overall satisfaction with Perth Observatory

RESPONSE	1992-93 (%)	1993-94 (%)	1994-95 (%)	1995-96 (%)
Very satisfied	68.1	68.0	70.1	75.2
Satisfied	30.3	31.0	25.2	23.1
Neither satisfied or dissatisfied	1.2	1.0	2.9	1.7
Dissatisfied	0.4	0.0	1.3	0.0
Very dissatisfied	0.0	0.0	0.5	0.0

The survey was a paper questionnaire. The survey forms were distributed to visitors at the conclusion of their tour at the Observatory between November 1995 and March 1996. The number surveyed was 121.

2. The extent to which visitors perceive the information presented during their tour of the Observatory increased their knowledge and awareness of astronomy.

The indicator relates to the educational role of the Observatory in meeting the demand by the community for information on astronomy and measures the extent to which that demand is met.

The extent to which visitors perceived they had increased their knowledge and awareness of astronomy was measured by survey. Results related to the question 'To what extent do you agree that the information presented on the tour increased your knowledge of and awareness of astronomy?'

The extent to which visitors perceive the information presented during their tour of the Observatory increased their knowledge and awareness of astronomy.

RESPONSE	1992-93 (%)	1993-94 (%)	1994-95 (%)	1995-96 (%)
Strongly Agree	55	46	45	50.4
Agree	43	52	51.3	47.9
Neither agree or disagree	2	2	2.6	1.7
Disagree	0	0	0.5	0
Strongly disagree	0	0	0.3	0

3. Research Findings published in Internationally recognised journals.

One of the aims of Perth Observatory is to further scientific research in astronomy. One method of measuring the contribution to scientific research is to determine the number of articles published in internationally recognised scientific journals. The publishers of these journals independently evaluate articles submitted to ensure they meet appropriate standards and criteria. To have articles published in these journals would indicate that the Observatory is adding to the body of scientific knowledge and therefore furthering scientific research.

During 1995-96, the Observatory had 15 articles published. Of these, five were scientific papers in internationally recognised journals. The other articles were papers related to scientific data on astronomical positions of objects, articles in educational journals or popular magazines.

EFFICIENCY INDICATOR

1. Average cost per visitor per tour type.

Tour Type	1993-94	1994-95	1995-96
Day Tour	\$0.91	\$0.94	\$1.01
Night Tour	\$2.20	\$1.94	\$2.60
Weekend Tour	\$3.25	\$2.50	\$2.51

The Perth Observatory conducts a very popular on-site educational program through its tours for school groups, tourists and the general public. The number of people visiting the Observatory and participating in tours in 1995-96 was 5 429—there were 84 night tours, 76 day tours, and 51 weekend tours.



Opinion of the Auditor General

To the Parliament of Western Australia

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT PERFORMANCE INDICATORS FOR THE YEAR ENDED JUNE 30, 1996

Scope

I have audited the performance indicators of the Department of Conservation and Land Management for the year ended June 30, 1996 under the provisions of the Financial Administration and Audit Act 1985.

The Executive Director is responsible for developing and maintaining proper records and systems for preparing and presenting performance indicators. I have conducted an audit of the performance indicators in order to express an opinion on them to the Parliament as required by the Act.

My audit was performed in accordance with section 79 of the Act to form an opinion based on a reasonable level of assurance. The audit procedures included examining, on a test basis, the evidence supporting the amounts and other disclosures in the performance indicators and the assessment of the relevance of the performance indicators to the program objectives, and the appropriateness of the performance indicators in assisting users to assess the Department's performance. These procedures have been undertaken to form an opinion as to whether, in all material respects, the performance indicators are relevant and appropriate having regard to their purpose and fairly represent the indicated performance.

The audit opinion expressed below has been formed on the above basis.

Qualification

The indicators reported for the Nature Conservation Program are generally in the nature of workload indicators and are not key indicators of efficiency and effectiveness.

Qualified Audit Opinion

In my opinion, except for those indicators referred to in the qualification paragraph, the performance indicators are relevant to the objectives of the Department of Conservation and Land Management. The indicators are appropriate for assisting users to assess the Department's performance and fairly represent the indicated performance.

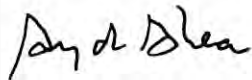
D D R PEARSON
AUDITOR GENERAL
September 19, 1996

Financial Statements

1995-1996

The accompanying financial statements of the Department of Conservation and Land Management have been prepared in compliance with the provisions of the Financial Administration and Audit Act 1985 from proper accounts and records to present fairly the financial transactions for the financial year ending 30 June 1996 and the state of affairs as at 30 June 1996.

At the date of signing we are not aware of any circumstances which would render the particulars included in the financial statements misleading or inaccurate.



ACCOUNTABLE OFFICER
15 August 1996



PRINCIPAL ACCOUNTING OFFICER
15 August 1996

**DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT
OPERATING STATEMENT
FOR THE YEAR ENDED 30 JUNE, 1996**

	Note	1995-96 (\$ 000)
COST OF SERVICES		
OPERATING EXPENSES		
Salaries and wages		49 856
Superannuation	4	3 753
Interest	5	13 263
Harvesting costs		59 353
Depreciation		4 676
Administration	6	5 497
Accommodation		1 145
Other expenses	7	41 510
Total Cost of Services		<u>179 053</u>
REVENUES FROM SERVICES		
OPERATING REVENUE		
Royalties and timber sales	8	123 570
National parks and recreation		3 384
Recoupable works	9	12 697
Other	10	10 080
Profit on sale of assets	11	1 753
Total Operating Revenue		<u>151 484</u>
Net cost of services		<u>(27 569)</u>
REVENUES FROM GOVERNMENT		
Appropriations	12	34 867
Resources received free of charge	13	608
Grants - Commonwealth	14	4 823
- State	14	1 584
Interest on investments		818
Total Revenues from Government		<u>42 700</u>
Change in Financial Position as a result of operations		15 131
Increase in net assets arising from restructuring	14a	3 944
Change in Financial Position	23	<u>19 075</u>
ADMINISTERED REVENUES		
Miscellaneous royalty collections		88
Inspection fees		97
Wildlife licences and tags		212
Other fees and charges		183
Total administered revenues	14b	<u>580</u>

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT
STATEMENT OF FINANCIAL POSITION
AS AT 30 JUNE, 1996

	Note	1995-96 (\$ 000)
CURRENT ASSETS		
Cash and amounts in suspense	15	9 507
Restricted funds	16	1 409
Receivables	17	15 134
Inventories	18	3 242
Prepayments	19	207
		<u>29 499</u>
NON-CURRENT ASSETS		
Property, plant and equipment	20	<u>1 349 167</u>
Total Assets		<u><u>1 378 666</u></u>
CURRENT LIABILITIES		
Accounts payable		1 299
Accrued salaries/wages		376
Accrued superannuation		1 739
Accrued logging costs		1 450
Borrowings	21	4 594
Accrued loan interest		3 232
Employee entitlements	22	8 159
Contractors deposits	16	1 403
Withholding tax	16	6
Unearned revenue		159
		<u>22 417</u>
NON-CURRENT LIABILITIES		
Employee entitlements	22	2 107
Borrowings	21	101 697
		<u>103 804</u>
Total Liabilities		<u>126 221</u>
EQUITY		
Reserves	23	1 314 707
Accumulated Deficit	23	(62 262)
		<u>1 252 445</u>
TOTAL LIABILITIES AND EQUITY		<u><u>1 378 666</u></u>

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT
STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED 30 JUNE 1996

	1995-96 (\$ 000)
CASH FLOWS FROM OPERATING ACTIVITIES	
Payments	
Employee entitlements	(50 073)
Superannuation	(3 175)
Interest	(13 751)
Harvesting costs	(60 234)
Administration	(4 657)
Accommodation	(1 129)
Other	(43 416)
Receipts	
Royalties	61 249
Commercial operations	61 485
Recoupable projects	12 451
Other revenues	13 896
NET CASH USED IN OPERATING ACTIVITIES	(27 354)
	(Note 24)
CASH FLOWS FROM INVESTING ACTIVITIES	
Payments for the purchase of non-current assets	(10 139)
Proceeds from the sale of non-current assets	9 682
NET CASH USED IN INVESTING ACTIVITIES	(457)
CASH FLOWS FROM FINANCING ACTIVITIES	
Borrowing repayments to WA Treasury Corporation	(13 195)
Borrowing proceeds from WA Treasury Corporation	-
NET CASH USED IN FINANCING ACTIVITIES	(13 195)
CASH FLOWS FROM GOVERNMENT AND OTHER	
Receipts from appropriations	
Recurrent	25 996
Capital	8 872
Other	818
Grants receipts - Commonwealth	4 806
- State	1 830
NET CASH PROVIDED BY GOVERNMENT	42 322
Cash at the beginning of the reporting period	8 191
Net increase in cash held	1 316
Cash at the end of the reporting period	9 507
	(Note 15)

**DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT
PROGRAM SCHEDULE OF EXPENSES AND REVENUES
FOR THE YEAR ENDED 30 JUNE 1996**

	ASTRONOMICAL SERVICES (\$ 000's)	NATURE CONSERVATION (\$ 000's)	TOURISM AND RECREATION (\$ 000's)	FOREST RESOURCES (\$ 000's)	TOTAL (\$ 000's)
	1995-96	1995-96	1995-96	1995-96	1995-96
OPERATING EXPENSES					
Salaries and wages	(191)	(14 560)	(11 130)	(23 975)	(49 856)
Superannuation	(14)	(1 096)	(838)	(1 805)	(3 753)
Depreciation	0	(1 591)	(1 075)	(2 010)	(4 676)
Interest	0	(513)	(1 383)	(11 367)	(13 263)
Harvesting costs	0	0	0	(59 353)	(59 353)
Administration	(17)	(1 943)	(1 239)	(2 298)	(5 497)
Accommodation	0	(293)	(390)	(462)	(1 145)
Other	(44)	(8 690)	(10 123)	(22 653)	(41 510)
Total Cost of Services	(266)	(28 686)	(26 178)	(123 923)	(179 053)
OPERATING REVENUE					
Royalties and timber sales	0	0	0	123 570	123 570
National Parks collections	0	0	3 384	0	3 384
Recoupable works	27	159	1 983	10 528	12 697
Other	0	2 242	1 382	6 456	10 080
Profit on sale of assets	0	596	403	754	1 753
Total Operating Revenue	27	2 997	7 152	141 308	151 484
Net Cost of Services	(239)	(25 689)	(19 026)	17 385	(27 569)
REVENUES FROM GOVERNMENT					
Appropriations	268	19 800	14 799		34 867
Resources received free of charge	2	205	140	261	608
Grants - Commonwealth	0	2 664	1 687	472	4 823
- State	0	6	1 578	0	1 584
Interest on investments	0	756	13	49	818
Total Revenues From Government	270	23 431	18 217	782	42 700
Change in Financial Position as a result of operations	31	(2 258)	(809)	18 167	15 131

**DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT
PROGRAM SCHEDULE OF ASSETS AND LIABILITIES
FOR THE YEAR ENDED 30 JUNE 1996**

	ASTRONOMICAL SERVICES (\$ 000's)		NATURE CONSERVATION (\$ 000's)		TOURISM AND RECREATION (\$ 000's)		FOREST RESOURCES (\$ 000's)		TOTAL (\$ 000's)	
	1995-96	1995-96	1995-96	1995-96	1995-96	1995-96	1995-96	1995-96	1995-96	1995-96
CURRENT ASSETS										
Cash and amounts in suspense	4	8 237	261	1 005					9 507	
Restricted funds	0	0	0	1 409					1 409	
Receivables	0	14	161	14 959					15 134	
Inventories	0	0	999	2 243					3 242	
Prepayments	0	45	54	108					207	
NON CURRENT ASSETS										
Property, plant and equipment	3 944	145 260	2 14 260	985 703					1 349 167	
Total Assets	3 948	153 556	2 15 735	1 005 427					1 378 666	
CURRENT LIABILITIES										
Accounts payable	0	341	311	647					1 299	
Accrued salaries / wages	1	110	84	181					376	
Accrued superannuation	5	509	388	837					1 739	
Accrued logging costs	0	0	0	1 450					1 450	
Borrowings	0	185	511	3 898					4 594	
Accrued loan interest	0	130	359	2 743					3 232	
Employee entitlements	31	2 383	1 821	3 924					8 159	
Contractors deposits	0	0	0	1 403					1 403	
Withholding tax	0	0	0	6					6	
Unearned revenue	0	0	0	159					159	
NON CURRENT LIABILITIES										
Employee entitlements	8	615	471	1 013					2 107	
Borrowings	0	4 104	11 312	86 281					101 697	
Total Liabilities	45	8 377	15 257	102 542					126 221	

**DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT
STATEMENT OF APPROPRIATIONS AND REVENUE ESTIMATES
FOR THE YEAR ENDED 30 JUNE, 1996**

1994-95 Actual \$	SOURCE OF FUNDS	1995-96 Estimates \$	1995-96 Actual \$	Variation \$
1 193 358	Opening Balance	744 000	743 894	(106)
24 070 000	Item 135 Amount provided for recurrent services for the year	22 632 000	25 604 943	2 972 943
1 239 000	Contributions to Tree Planting Trust Fund	-	-	-
129 790	Amount authorised by other statutes	133 000	132,656	(344)
8 794 000	Item 225 Amount provided for Capital Services for the year	11 240 000	8 871 757	(2 368 243)
-	Astronomical Services		258 000	258 000
121 539 700	Retained Revenues - Section 23A Financial Administration and Audit Act	119 932 000	129 175 746	9 243 746
15 366 461	Contributions from industry and other sources.	11 367 000	24 225 088	12 858 088
3 561 317	Commonwealth recoups	2 137 000	4 873 967	2 736 967
1 944 065	Income from national and recreation parks	2 000 000	2 893 042	893 042
2 007 395	Other	1 306 000	648 000	(658 000)
179 845 086		171 491 000	197 427 093	25 936 093
EXPENDITURE				
Recurrent				
483 308	Minister's Office	375 000	219 076	(155 924)
-	Astronomical Services Program		276 896	276 896
26 246 111	Nature Conservation Program	23 008 000	28 156 911	5 148 911
118 565 138	Forest Resources Management Program	116 738 000	129 948 541	13 210 541
20 562 612	Management for Tourism and Recreation Program	18 080 000	25 296 510	7 216 510
165 857 169	Total Recurrent Expenditure	158 201 000	183 897 934	25 696 934
Capital				
-	Astronomical Services Program		21 396	21 396
87 647	Nature Conservation Program	200 000	628 755	428 755
10 057 058	Forest Resources Management Program	10 760 000	9 016 664	(1 743 336)
2 356 852	Management for Tourism and Recreation Program	1 500 000	2 507 969	1 007 969
742 466	Plant and Equipment	830 000	425 170	(404 830)
13 244 023	Total Capital Expenditure	13 290 000	12 599 954	(690 046)
179 101 192	GRAND TOTAL	171 491 000	196 497 888	25 006 888
743 894	CLOSING BALANCE	-	929 205	929 205
REVENUE				
197 393	Territorial	178 000	94 991	(83 009)
550 890	Departmental	380 000	479 560	99 560
748 283		558 000	574 551	16 551

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT, 30 JUNE 1996

NOTES TO THE FINANCIAL STATEMENTS

I. OBJECTIVES AND FUNDING

(a) Objectives and Funding

The Department of Conservation and Land Management's mission is to conserve and manage Western Australia's wildlife and the lands, waters and resources entrusted to the Department for the benefit of present and future generations.

The Department is predominantly funded by Parliamentary appropriations and retained revenues from timber sales and other activities. It provides the programmes as disclosed at Note 3. The fees charged are determined by prevailing market forces and Government policy. The financial statements encompass all Funds through which the Department controls resources to carry on its functions.

In the process of reporting on the Department as a single entity, all intra-entity transactions and balances have been eliminated.

(b) Funds Held in Trust

The Department holds monies in a trust capacity. These monies and transactions are included in the financial statements where the Department controls and uses those funds for the achievement of its objectives. The following is a summary of the transactions in the trust accounts which the Department controls:

	1995-96
	(\$'000)
Balance as at 1 July	2 004
Receipts	<u>13 110</u>
	15 114
less Payments	<u>13 705</u>
Balance as at 30 June	<u>1 409</u>

Amounts transferred between trust accounts have been eliminated in full.

NOTES TO THE FINANCIAL STATEMENTS

2. SIGNIFICANT ACCOUNTING POLICIES

(a) Basis of Accounting

The financial statements have been prepared in accordance with Treasurer's Instruction 1101A and are based on the provisions of Australian Accounting Standard AAS 29 'Financial Reporting by Government Departments' as if the relevant aspects were applicable to the department as an accounting standard.

The statements have been prepared on the accrual basis of accounting using historical cost accounting, with the exception that certain non-current physical assets have been introduced at written down current cost as at 30 June 1996. Additions to non-current physical assets since valuation are stated at cost.

This is the first year in which financial statements have been prepared on the accrual basis for audit and publication. Opening balances at 30 June 1995 have been established from available records except for certain non-current physical assets which have been included at valuation. Comparative figures are not available for the operating statement, statement of financial position and statement of cash flows.

(b) Valuation of Assets

Buildings and Plant and Equipment acquired as a result of the transfer of the Observatory have been recognised at fair value.

The valuation of land is in accordance with an independent valuation undertaken by the Valuer General's Office in Western Australia and the assets are stated at current market value.

The following assets have not been included in the Statement of Financial Position but are considered significant assets.

- Plantations and Forests - The operations of the Department include establishment and maintenance of tree plantations and forests for which future economic benefits will accrue through sale of felled trees. At present no valuation has been made of the Department's standing timber. The Department is awaiting the development of an appropriate Accounting Standard dealing with the valuation of regenerating assets. As a result, plantation and forestry expenditure have been expensed.
- Infrastructure Assets (Roads, Bridges, Drains etc) - The Department's Capitalisation Policy on infrastructure assets is under review.
- Buildings other than Observatory Buildings have not been brought into the accounts as these will be subject to valuation over the next 2 years in accordance with the transitional provisions of AAS 29
- Heritage Assets
- Intellectual and Other Property

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT, 30 JUNE 1996

2. SIGNIFICANT ACCOUNTING POLICIES CONT..**(c) Appropriations**

Appropriations whether recurrent, capital or other, are recognised as revenues in the period in which the Department gains control of the appropriated funds.

The Department gains control of appropriated funds at the time those funds are drawn down by the Department. Appropriations which are repayable by the Department to the Treasurer are recognised as liabilities.

The Department operates under a Net Appropriation Agreement. This is an agreement pursuant to Section 23A of the Financial Administration and Audit Act, between the Treasurer and the Accountable Officer of the Department for the financial year ending 30 June 1996 which provides for the retention of the following moneys received by the Department:

- Proceeds from contract of sale of forest products - Sections 88(1)(b) and 92(2) Conservation and Land Management Act
- Proceeds from sale of real property - Kemerton
- Proceeds from the disposal of equipment and other non-real property

The proceeds from sale of forest products, and disposal of property (other than real property) and equipment are to be applied in the first instance to the purposes and functions authorised by the Conservation and Land Management Act with any surpluses over and above this requirement applied to the repayment of borrowings. Proceeds from disposal of real property (Kemerton Land) are to be applied towards reducing loan liabilities.

Estimates against programs are indicators only on how the Department's Programs are to be carried out and were prepared some 15-18 months prior to the 30 June 1996.

(d) Depreciation of Non-Current Assets

Depreciation has been provided for on a straight line basis, using rates which are reviewed annually. Major depreciation periods are:

• Buildings	20-40 years
• Furniture	10 years
• Office Equipment	6-7 years
• Computer Equipment	4 years
• Aircraft	5-6 years
• Boats	5 years
• Plant and Machinery	5-10 years
• Heavy Fleet vehicles	5 years

Cars and utilities are not depreciated as experience indicates that the resale value returns an amount which approximates the purchase price.

(e) Recognition of Revenue

The Department's general policy is to recognise revenue when an invoice is issued. However revenue has been recorded in respect of Sharefarming and Sandalwood sales for which no invoice has been raised as at 30th June 1996. The reason for including these amounts as revenue for 1995-96 is due to the large amount of monies involved and the virtual certainty of receiving payment.

Other revenues such as proceeds from the sale of motor vehicles, land sales and miscellaneous revenue are recognised at the time of receipt.

(f) Leases

The Department has entered into operating lease agreements for buildings and office equipment where the lessors effectively retain all of the risks and benefits incident to ownership of the items held under the operating leases. Equal instalments of the lease payments are charged to the operating statement over the lease term as this is representative of the pattern of benefits to be derived from the leased property.

The Department had no finance lease commitments during 1995-96.

(g) Inventories

Inventories have been valued at the lower of cost and net realisable value.

(h) Provision for Doubtful Debts

The provision for doubtful debts has been estimated based on prior year's experience and examination of individual outstanding debts.

(i) Employee Entitlements*Annual and long service leave*

These entitlements are calculated at current remuneration rates. A liability for long service leave is recognised after an officer has completed four years service of a seven year long service leave term and six years service of a ten year long service leave term.

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT, 30 JUNE 1996

The provisions of Australian Accounting Standard AAS30 'Accounting for Employee Entitlements' have been complied with except for the following:

1. Discounting for long services leave liability.
2. Non vesting of sick leave.

The Department believes that the application of discount factors and ancillary changes to the non current long service leave liability is likely to have an insignificant impact on the financial results of the Department and that without the input of a qualified actuary it is not possible to establish the liability for non current long service leave and non vesting sick leave. Any attempt to comply further with AAS30 at this time would not be cost-benefit efficient.

The Department has carried out an exercise based on AAS 30. The figure calculated was found to be not materially different from the methods calculated

Superannuation

The contributions made to superannuation funds are charged against net income from services.

Staff contribute to the Superannuation and Family Benefits Act Scheme (a pension scheme closed to new entrants) or the Government Employees Superannuation Act Scheme (a lump sum benefit scheme - closed to new entrants) which are both defined as benefits schemes. All other staff superannuation obligations are met under the superannuation guarantee levy. The Department is responsible for employer contributions under both lump sum schemes.

Employer contributions are paid to the Government Employees Superannuation Scheme.

The superannuation expense does not include payment of pensions to retirees as this does not constitute part of the cost of services provided by the Department in the current year.

3. PROGRAMS OF THE DEPARTMENT

The purpose and objective of each major program undertaken by the Department during the reporting period are:

Nature Conservation

To conserve indigenous plants, animals and ecological processes in natural habitats throughout the State.

Forest Resources Management

To sustain, regulate and profitably manage the forest resources entrusted to the Department in ways compatible with conservation and other management objectives.

Management for Tourism and Recreation

To identify, provide and maintain opportunities and services to the community which allows them to enjoy the wildlife, lands, waters and resources entrusted to the Department without compromising conservation and other management objectives.

Astronomical Services

To meet the demand for general and specialised up to date astronomical information and services from the public and educational community while furthering scientific research in astronomy in conjunction with other observatories and local tertiary institutions.

Information about the expenses, revenues, assets and liabilities are set out in the Program Schedules.

	1995-96 (\$'000)
4. SUPERANNUATION	
Cash expense	3 175
less : Accrued 94-95	(1 161)
add : Accrued 95-96	1 739
Total expense for the year	<u>3 753</u>
5. INTEREST	
WA Treasury Corporation	12 550
Commonwealth Department of Finance	699
Other financial institutions	14
	<u>13 263</u>
6. ADMINISTRATION	
Administration expenses for the reporting period include :	
Resources received free of charge	608
Bad debts	100
Telephones, postage, couriers	1 352
Travel expenses	1 785
Other	1 652
	<u>5 497</u>

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT, 30 JUNE 1996

1995-96 (\$'000)	1995-96 (\$'000)
7. OTHER EXPENSES	
Other expenses for the reporting period include :	
Maintenance costs	3 341
Operating lease costs	5 178
Staff costs	1 651
Materials	13 928
Services and contracts	7 826
Other	9 586
	<u>41 510</u>
8. ROYALTIES AND TIMBER SALES	
Hardwood royalties	35 662
Softwood royalties	13 644
Sandalwood	13 201
Hardwood logging	46 743
Softwood logging	14 320
	<u>123 570</u>
9. RECOUPABLE WORKS	
Sharefarming income	8 813
Other recoups	3 884
	<u>12 697</u>
10. OTHER OPERATING REVENUE	
Mining compensation	2 811
Sale of publications	588
Proceeds from nursery	3 272
Private grants	3 299
Other revenues	110
	<u>10 080</u>
11. PROFIT ON SALE OF ASSETS	
Proceeds from sale	
- Land	8 234
- Motor vehicles	3 284
	<u>11 518</u>
Carrying value of assets sold	
- Land	8 215
- Motor vehicles	1 550
	<u>9 765</u>
Net gain from sale of assets	<u>1 753</u>
12. APPROPRIATIONS	
Consolidated Fund	
Recurrent	25 863
Capital Works	8 871
Salaries and Allowances Tribunal	133
	<u>34 867</u>
13. RESOURCES RECEIVED FREE OF CHARGE	
Resources received free of charge has been determined on the basis of the following estimates provided by agencies:	
	Office of the Auditor General
	- audit services
	Treasury Department
	Department of Land Administration
	State Repository
	<u>175</u>
	<u>120</u>
	<u>312</u>
	<u>1</u>
	<u>608</u>
	<u>4 823</u>
	<u>1 064</u>
	<u>520</u>
	<u>1 584</u>
	<u>1 183</u>
	<u>2 541</u>
	<u>220</u>
	<u>3 944</u>
	<u>9 004</u>
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	<u>1 403</u>
	<u>0</u>
	<u>6</u>
	<u>1 409</u>
	<u>15 334</u>
	<u>(200)</u>
	<u>15 134</u>
	<u>999</u>
	<u>2 243</u>
	<u>3 242</u>
	<u>1 403</u>
	<u>0</u>
	<u>6</u>
	<u>1 409</u>
	<u>15 334</u>
	<u>(200)</u>
	<u>15 134</u>
	<u>999</u>
	<u>2 243</u>
	<u>3 242</u>
	<u>1 403</u>
	<u>0</u>
	<u>6</u>

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT, 30 JUNE 1996

	1995-96 (\$'000)
19. PREPAYMENTS	
Motor vehicle licence & insurance	172
Accommodation	35
	<u>207</u>
20. PROPERTY, PLANT AND EQUIPMENT	
Land - at valuation 1996 (i)	1 314 927
	<u>1 314 927</u>
Observatory buildings	2 541
Plant & Equipment - At cost	8 639
less : Accumulated depreciation	(543)
	<u>8 096</u>
Plant & Equipment - At valuation (ii)	7 394
less : Accumulated depreciation	(3 350)
	<u>4 044</u>
Vehicles at cost	20 709
less : Accumulated depreciation	(2 487)
	<u>18 222</u>
Work In Progress	
Treetop Walk	<u>1 337</u>
Total Property, Plant and Equipment	<u>1 349 167</u>

(i) Land

The Department's land was revalued during the year by the Valuer General's Office in Western Australia. The valuation was based on current market values.

(ii) Plant and equipment

Plant and equipment has been brought to account at cost. Where cost amounts were not known they have been brought to account at independent valuation.

21. BORROWINGS

Current	
Commonwealth Department of Finance	393
WA Treasury Corporation	4 166
Financial institutions	35
	<u>4 594</u>
Non-Current	
Commonwealth Department of Finance	6 352
WA Treasury Corporation	95 265
Financial institutions	80
	<u>101 697</u>

22. EMPLOYEE ENTITLEMENTS

Current	
Provision for annual leave	4 046
Provision for long service leave	4 113
	<u>8 159</u>
Non current	
Provision for long service leave	2 107
	<u>2 107</u>

23. EQUITY

Equity represents the residual interest in the net assets of the Department. The Government holds the equity interest in the Department on behalf of the community.

(a) Accumulated (Deficit)

Balance at the beginning of the year	0
Change resulting from initial application of AAS29	(81 337)
Change in net assets resulting from operations	19 075
Balance at the end of the year	<u>(62 262)</u>

(b) Reserves

Asset Revaluation Reserve	
Balance at beginning of year	0
Increase resulting from initial application of AAS 29	1 314 707
Balance at end of year	<u>1 314 707</u>

For the purposes of the initial application of AAS 29 'Financial Reporting by Government Departments' land under the control of the Department has been brought to account via an increment to the Asset Revaluation Reserve. Had this land been brought to account through the Accumulated Deficit the closing Accumulated Surplus at 30 June 1996 would have been \$ 1 252 445 and the Asset Revaluation Reserve would have been nil.

This treatment is considered appropriate as the Department has historically not been required to purchase the land it controls.

24. RECONCILIATION OF NET CASH (USED IN) OPERATING ACTIVITIES TO NET COST OF SERVICES (000's)

(a) For the purposes of the statement of cash flows, cash includes cash revenue from operating activities, cash in suspense and C.E Lane Poole Memorial Trust.	
(b) Net cash (used in) operating activities,	
Statement of Cash Flows	(27 354)
Depreciation	(4 676)
Accrued employee entitlements	217
Accrued superannuation	(578)
Accrued interest	488
Other accrued expenditure	1931
Net profit on sale of assets	1753
Other accrued revenue	650
Net Cost of Services	<u>(27 569)</u>
(Operating Statement)	<u>(27 569)</u>

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT, 30 JUNE 1996

(c) No non cash financing or investing activities have been undertaken during the financial year.

(d) There were no additional credit facilities available which were undrawn at balance date.

25. ADMINISTERED EXPENSES AND REVENUES ON BEHALF OF OTHERS.

The Department provided accounting services to the Kalgoorlie Boulder Urban Land Care Group during the year.

The Department does not control the operations of this organisation but acts only as an agent.

	\$
Opening Balance	78 347
Administered revenues	<u>92 517</u>
	170 864
Administered expenses	<u>170 864</u>
Closing Balance	<u>0</u>
Administered assets and liabilities	
<p>Administered assets and liabilities are not controlled by the Department, but are administered by it on behalf of the above organisations.</p>	
Total Administered Assets	<u>0</u>

26. COMMITMENTS FOR CAPITAL EXPENDITURE

At the reporting date, the Department had not entered into any contract for capital expenditures.

27. CONTINGENT OBLIGATIONS

Various claims for damages have been lodged against the Department. The Department has denied liability and the Corporate Executive is of the opinion that no loss will be incurred.

	1995-96
	(\$'000)

28. RESOURCES PROVIDED FREE OF CHARGE

During the year the following resources were provided to other agencies free of charge for functions outside the normal operations of the Department.

Police Department (Herbarium)	40
Other	<u>27</u>
	<u>67</u>

29. REMUNERATION AND RETIREMENT BENEFITS OF SENIOR OFFICERS**Remuneration of Senior Officers**

The number of Senior Officers whose total of fees, salaries and other benefits received or due and receivable for the financial year, falls within the following bands:

	1995-96
\$	
70 000 - 80 000	2
80 000 - 90 000	6
90 000 - 100 000	1
130 000 - 140 000	1

The total remuneration of senior officers is : \$ 861 927

Retirement Benefits

In respect of Senior Officers the following amounts were paid for the financial year.

Contributions to Government Employee Superannuation Act scheme \$91 166

At 30 June 1996 nine employees of the Department were members of the Superannuation and Family Benefits Act scheme.

No Senior Officers were members of the Superannuation and Family Benefits Act scheme.

30. SUPPLEMENTARY FINANCIAL INFORMATION

	1995-96
	\$
* Losses of public moneys and public or other property.	
Irrecoverable amounts	20 523
Other	2 203
General (includes thefts reported to Police, lost property and stock taking deficiencies)	<u>7 745</u>
	<u>30 471</u>

* Public and other property, revenue and other debts due to the state written off in accordance with Section 45 of the Financial Administration and Audit Act 1985.

Approved by the Executive Director	19 393
Approved by the Hon. Minister	<u>11 078</u>
	<u>30 471</u>

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT, 30 JUNE 1996

31. EVENTS OCCURRING AFTER BALANCE

DATE	(\$'000)
------	----------

The following significant events occurred after balance date.

In line with Government policy to privatise its vehicle fleet, a partial sale of the Department's light vehicles occurred on 5 July 1996.	3 952
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Accelerated debt repayment on 15 July 1996	12 252
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32. EXPLANATORY STATEMENT

The Statement of Appropriations and Revenue Estimates discloses appropriations and other statutes expenditure estimates, the actual expenditure made and revenue estimates and payments into Consolidated Fund, all on a cash basis.

The following explanations are provided in accordance with Treasurer's Instruction 945 :

As mentioned in Note 2, the Department operates under a Net Appropriation Agreement whereby monies received under the agreement are retained as a source of funds for its operation.

The increase in retained revenue over the estimates is due primarily to land and building sales of almost \$6.5 million. These proceeds were applied to the reduction of the Department's outstanding debt. The other \$2.7 million extra revenue was due to slightly better market conditions than expected at the time the budget was framed.

The contribution from Industry and Other Sources comprise :

Recoupable Works	\$15 857 634
Commissioner of Main Roads	\$1 309 178
Saleable Publications	\$579 106
Nursery Sales	\$3 262 067
Interest & Other	\$413 650
Mining Compensation	\$2 803 453

Generally these moneys are for works of a recoupable nature and the extent of the work involved is not easily predictable. Consequently large variations can occur between the estimates and the actual amount received.

Commonwealth Recoups are grants provided by the Commonwealth Government mainly for wildlife and other research projects. Opportunities for these grants arise during the year and amounts involved are not easily predicted. They do not bear any comparison in dollar terms to previous years.

The increased revenue is reflected in the Department's expenditure program. It also enabled the Department to reduce its outstanding loan liability by \$8.8 million more than budgeted.

Responsibility for the Perth Observatory (Astronomical Services Program) was transferred from the Department of State Services to the Department on 26 January 1996. Expenditure on this Program from 1 July 1995 to 30 June 1996 was \$383 453 whilst revenue paid to Consolidated Fund for the same period was \$28 270.



Opinion of the Auditor General

To the Parliament of Western Australia

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT FINANCIAL STATEMENTS FOR THE YEAR ENDED JUNE 30, 1996

Scope

I have audited the accounts and financial statements of the Department of Conservation and Land Management for the year ended June 30, 1996 under the provisions of the Financial Administration and Audit Act 1985. The Department has submitted for audit accrual based financial statements in accordance with the Treasurer's Instructions.

The Executive Director is responsible for keeping proper accounts and maintaining adequate systems of internal control, preparing and presenting the financial statements, and complying with the Act and other relevant written law. The primary responsibility for the detection, investigation and prevention of irregularities rests with the Executive Director.

My audit was performed in accordance with section 79 of the Act to form an opinion based on a reasonable level of assurance. The audit procedures included examining, on a test basis, the controls exercised by the Department to ensure financial regularity in accordance with legislative provisions, evidence to provide reasonable assurance that the amounts and other disclosures in the financial statements are free of material misstatement and the evaluation of accounting policies and significant accounting estimates. These procedures have been undertaken to form an opinion as to whether, in all material respects, the financial statements are presented fairly in accordance with applicable Accounting Standards and other mandatory professional reporting requirements (Urgent Issues Group Consensus Views) as modified by the Treasurer's Instructions.

Western Australian State public sector departments are continuing a major financial reform requiring a move from cash based to accrual based financial reporting. Australian Accounting Standard 29 (AAS 29) "Financial Reporting by Government Departments" provides the framework that now guides departmental reporting arrangements to assure effective financial reporting by June 30, 1997. Transitional provisions exist in AAS 29 to assist in its implementation. This Accounting Standard has still to be formally applied to State departments, although the Treasurer's Instructions require the application of certain provisions of the Standard where accrual based financial statements are prepared by departments. The initial implementation of accrual based financial reporting has created certain difficulties in relation to various accounting matters, in particular:

In supporting the implementation of accrual based financial reporting and, ultimately accrual accounting, I have taken the transitional nature of the financial reform process into consideration in forming my audit opinion. Users of the financial statements are advised to consider the implications of the transitional arrangements when interpreting these financial statements.

**Department of Conservation and Land Management
Financial statements for the year ended June 30, 1996**

The audit opinion expressed below has been formed on the above basis.

Audit Opinion

In my opinion,

- (i) the controls exercised by the Department of Conservation and Land Management provide reasonable assurance that the receipt, expenditure and investment of moneys and the acquisition and disposal of property and the incurring of liabilities have been in accordance with legislative provisions; and
- (ii) the Operating Statement, Statement of Financial Position, Statement of Cash Flows, Program Schedules and Summary of Consolidated Fund Appropriations and Revenue Estimates and the Notes to and forming part of the financial statements are based on proper accounts and present fairly in accordance with applicable Accounting Standards and other mandatory professional reporting requirements as modified by the Treasurer's Instructions, the transactions for the year ended June 30, 1996 and the financial position at that date.



D D R PEARSON
AUDITOR GENERAL
September 19, 1996

Appendices

1995-1996

- | | |
|--|--|
| 1. Trend in the Area of Native Forest Harvested | 10. Number of Wildfires and Areas by Land Categories |
| 2. Areas of Even-Aged Karri Regeneration | 11. Purpose for Prescribed Burning by Forest Region |
| 3. Area of State-Owned Coniferous Plantations | 12. Number of Prescribed Burns Conducted in Native Forests |
| 4. Area of State-Owned Broadleaved Plantations | 13. Area and Number of Wildfires within the Three Forest Regions |
| 5. Trends in Log Production | 14. Licences Issued |
| 6. Trend in Chiplog Production | 15. Summary of Damage Licences Issued |
| 7. Trends in the Production and Use of Sawn Timber | 16. Offences Under the Wildlife Conservation Act and Regulations |
| 8. Trend for WA Overseas Imports & Exports of Forest Produce | 17. Publications |
| 9. Area of Prescribed Burns 1989-90 to 1995-96 | |

APPENDIX I TREND IN THE AREA OF NATIVE FOREST HARVESTED

	Jarrah Forest	Jarrah/Wandoo Forest	Karri Forest	
	ha	ha	Clearfelled or cut to seed trees ha	Thinned ha
1976-77	32 320	1 170	2 610	-
1977-78	26 020	740	4 450	-
1978-79	25 540	530	2 710	-
1979-80	25 150	860	2 110	60
1980-81	22 930	1 440	2 080	180
1981-82	24 680	610	2 180	320
1982-83	23 740	330	990	190
1983-84	21 540	580	1 490	260
1984-85	20 010	1 440	2 360	500
1985-86	22 640	650	1 590	340
1986	19 340	1 150	1 090	490
1987	17 180	1 380	1 310	700
1988	23 400	490	1 180	840
1989	15 130	200	1 510	910
1990	12 960	100	1 560	340
1991	10 910	-	1 920	230
1992	13 990	30	1 540	310
1993	14 250	40	1 630	80
1994	14 050	50	1 440	-
1995	17 830	30	2 410	-

APPENDIX 2 AREAS OF EVEN-AGED KARRI REGENERATION

Year of Regeneration Area (ha)	Multiple Use Forest		Conservation Forest		Totals	
	Annual Total (ha)	Cumulative Area (ha)	Annual Total (ha)	Cumulative Area (ha)	Annual Total (ha)	Cumulative (ha)
Before 1900	60	60	1 200	1 200	1 260	1 260
1900-09	-	60	-	1 200	-	1 260
1910-19	140	200	30	1 230	170	1 430
1920-29	170	370	50	1 280	220	1 650
1930-39	5 800	6 170	460	1 740	6 260	7 910
1940-49	710	6 880	460	2 200	1 170	9 080
1950-59	560	7 440	160	2 360	720	9 800
1960-65	230	7 670	-	2 360	230	10 030
1966	160	7 830	-	2 360	160	10 190
1967	210	8 040	80	2 440	290	10 480
1968	690	8 730	130	2 570	820	11 300
1969	1 290	10 020	310	2 880	1 600	12 900
1970	80	10 100	-	2 880	80	12 980
1971	80	10 180	10	2 890	90	13 070
1972	1 110	11 290	1 380	4 270	2 490	15 560
1973	190	11 480	-	4 270	190	15 750
1974	140	11 620	30	4 300	170	15 920
1975	630	12 250	430	4 730	1 060	16 980
1976	1 770	14 020	50	4 780	1 820	18 800
1977	1 630	15 650	220	5 000	1 850	20 650
1978	1 630	17 280	310	5 310	1 940	22 590
1979	1 920	19 200	310	5 620	2 230	24 820
1980	2 090	21 290	120	5 740	2 210	27 030
1981	2 950	24 240	300	6 040	3 250	30 280
1982	2 310	26 550	150	6 190	2 460	32 740
1983	1 930	28 480	370	6 560	2 300	35 040
1984	1 750	30 230	470	7 030	2 220	37 260
1985	2 400	32 630	-	7 030	2 400	39 660
1986	1 910	34 540	-	7 030	1 910	41 570
1987	1 110	35 650	-	7 030	1 110	42 680
1988	1 460	37 110	-	7 030	1 460	44 140
1989	1 110	38 220	-	7 030	1 110	45 250
1990	1 300	39 520	-	7 030	1 300	46 550
1991	1 270	40 790	-	7 030	1 270	47 820
1992	1 400	42 190	-	7 030	1 400	49 220
1993	1 930	44 120	-	7 030	1 930	51 150
1994	2 300	46 420	-	7 030	2 300	53 450
1995	1 530	47 950	-	7 030	1 530	54 980
Totals	47 950	47 950	7 030	7 030	54 980	54 980

APPENDIX 3 AREA OF STATE-OWNED CONIFEROUS PLANTATIONS AS AT 31-12-95

Planting Year	Pinus Radiata			Pinaster & Other Species			All Species	
	First Rotation (ha)	Replanted Areas (ha)	Cumulative Total (ha)	First Rotation (ha)	Replanted Areas (ha)	Cumulative Total (ha)	Year Total (ha)	Cumulative Total (ha)
<1959	469	-	469	3 612	7	3 619	4 088	4 088
1959	74	-	543	296	-	3 915	370	4 458
1960	252	-	795	301	-	4 216	553	5 011
1961	177	-	972	431	-	4 647	608	5 619
1962	207	-	1 179	391	-	5 038	598	6 217
1963	381	-	1 560	299	-	5 337	680	6 897
1964	435	-	1 995	566	9	5 912	1 010	7 907
1965	383	-	2 378	422	-	6 334	805	8 712
1966	479	-	2 857	716	-	7 050	1 195	9 907
1967	767	-	3 624	931	-	7 981	1 698	11 605
1968	753	-	4 377	1 261	-	9 242	2 014	13 619
1969	979	-	5 356	1 571	2	10 815	2 552	16 171
1970	1 009	-	6 365	1 293	-	12 108	2 302	18 473
1971	953	-	7 318	844	-	12 952	1 797	20 270
1972	1 040	-	8 358	663	-	13 615	1 703	21 973
1973	1 231	32	9 621	515	-	14 130	1 778	23 751
1974	1 339	-	10 960	299	-	14 429	1 638	25 389
1975	1 282	-	12 242	1 235	-	15 664	2 517	27 906
1976	1 492	-	13 734	1 132	-	16 796	2 624	30 530
1977	1 351	4	15 089	863	-	17 759	2 218	32 748
1978	1 971	11	17 071	498	-	18 157	2 480	35 228
1979	1 412	356	18 839	556	-	18 713	2 324	37 552
1980	1 511	12	20 362	912	-	19 625	2 435	39 987
1981	1 370	114	21 846	883	6	20 514	2 373	42 360
1982	1 489	76	23 411	597	6	21 117	2 168	44 528
1983	1 338	48	24 797	694	-	21 811	2 080	46 608
1984	1 882	3	26 682	514	8	22 333	2 407	49 015
1985	1 747	124	28 553	519	2	22 854	2 392	51 407
1986	1 103	-	29 656	612	-	23 466	1 715	53 122
1987	1 492 (727)	152	31 300 (727)	788	82	24 336	2 514 (727)	55 636 (727)
1988	1 850 (1 400)	119	33 269 (2 127)	174	-	24 510	2 142 (1 400)	57 779 (2 127)
1989	945 (365)	465	34 679 (2 492)	-	28	24 538	1 438 (365)	59 217 (2 492)
1990	920 (764)	368	35 967 (3 256)	-	6	24 544	1 294 (764)	60 511 (3 256)
1991	1 118 (1 042)	534	37 619 (4 298)	5	16	24 565	1 673 (1 042)	62 184 (4 298)
1992	1 784 (1 777)	569	39 972 (6 075)	-	327	24 892	2 680 (1 777)	64 864 (6 075)
1993	765 (698)	936	41 673 (6 773)	-	542	25 434	2 243 (698)	67 107 (6 773)
1994	391 (391)	704	42 768 (7 164)	-	461	25 895	1 556 (391)	68 663 (7 164)
1995	79 (79)	1 132	43 979 (7 243)	266(266)	154	26 315(266)	1 631 (345)	70 294 (7 509)
TOTAL	38 220 (7 243)	5 759	43 979 (7 243)	24 659(266)	1 656	26 315(266)	70 294 (7 509)	70 294 (7 509)

Areas shown in brackets have been established under sharefarm agreements. They are included in the totals.

APPENDIX 4 AREA OF STATE-MANAGED BROADLEAVED PLANTATIONS AS AT 31-12-95

PLANTING YEAR	CALM-OWNED		CALM-MANAGED		TOTAL			
	E. globulus (ha)	Other Eucs. (ha)	Owned by other Govt.	Privately owned	Year Total		Cumulative Total	
			E. globulus (ha)	E. globulus (ha)	E. globulus (ha)	Other Eucs. (ha)	E. globulus (ha)	Other (ha)
<1987	55	6 505			55	6 505	55	6 505
1987	-	68			-	68	55	6 579
1988	1 555 (1 551)	29			1 555	29	1 610	6 602
1989	2 982 (2 965)	19 (14)	70		3 052	19	4 662	6 621
1990	743 (687)	24			743	24	5 405	6 645
1991	683 (679)	89		81	764	89	6 169	6 734
1992	1 009 (1 000)	1		63	1 072	1	7 241	6 735
1993	350 (325)	-	52	1 429	1 831	-	8 972	6 735
1994	79 79	-	246	1 764	2 089	-	11 061	6 735
1995	3	-	-	3 550	3 553	-	14 614	6 735
Total	7 459 (6 286)	6 735 (14)	368	6 887	14 714	6 735	14 714	6 735

Plantation areas have been adjusted to account for areas harvested, replanting and renegotiations of plantation boundaries.
Areas in brackets have been established under shareform agreements. They are included in the total.

APPENDIX 5 TRENDS IN LOG PRODUCTION

Year Ended 30 June	HARDWOOD			SOFTWOOD			TOTAL		
	Crown Land (m ³)	Private Property (m ³)	Total (m ³)	Crown Land (m ³)	Private Property (m ³)	Total (m ³)	Crown Land (m ³)	Private Property (m ³)	Total (m ³)
1829-1916*									18 783 700
1917-1969							46 841 700	15 844 500	62 686 200
1970	1 040 100	174 170	1 214 270	81 280	1 500	82 780	1 121 380	175 670	1 297 050
1971	1 058 910	160 400	1 219 310	86 250	1 590	87 840	1 145 160	161 990	1 307 150
1972	1 005 480	105 680	1 111 160	90 760	1 310	92 070	1 096 240	106 990	1 203 230
1973	959 940	101 980	1 061 920	100 420	1 010	101 430	1 060 360	102 990	1 163 350
1974	961 070	90 710	1 051 780	123 390	1 170	124 560	1 084 460	91 880	1 176 340
1975	967 270	87 890	1 055 160	129 090	60	129 150	1 096 360	87 950	1 184 310
1976	1 089 100	111 760	1 200 860	105 570	-	105 570	1 194 670	111 760	1 306 430
1977	1 308 630	106 520	1 415 150	120 860	330	121 190	1 429 490	106 850	1 536 340
1978	1 319 910	118 030	1 437 940	125 550	1 680	127 230	1 445 460	119 710	1 565 170
1979	1 312 570	123 540	1 436 110	176 940	6 130	183 070	1 489 510	129 670	1 619 180
1980	1 390 660	160 240	1 550 900	191 360	4 830	196 190	1 582 020	165 070	1 747 090
1981	1 391 960	158 980	1 550 940	201 550	2 990	204 540	1 593 510	161 970	1 755 480
1982	1 218 750	112 990	1 331 740	173 480	14 830	188 310	1 392 230	127 820	1 520 050
1983	1 049 180	97 290	1 146 470	176 620	5 650	182 270	1 225 800	102 940	1 328 740
1984	1 134 760	131 360	1 266 120	198 280	3 560	201 840	1 333 040	134 920	1 467 960
1985	1 290 010	169 930	1 459 940	225 950	18 040	243 990	1 515 960	187 970	1 703 930
1986	1 331 830	127 010	1 458 840	247 640	29 120	276 760	1 579 470	156 130	1 735 600
1987	1 338 700	158 860	1 497 560	266 770	24 830	291 600	1 605 470	183 690	1 789 160
1988	1 427 620	174 520	1 602 140	302 450	31 160	333 610	1 730 070	205 680	1 935 750
1989	1 432 530	135 380	1 567 910	318 530	56 750	375 280	1 751 060	192 130	1 943 190
1990	1 319 250	80 560	1 399 810	312 520	105 860	418 380	1 631 770	186 420	1 818 190
1991	1 170 230	116 580	1 286 810	301 250	85 640	386 890	1 471 480	202 220	1 673 700
1992	1 247 730	120 560	1 368 290	363 420	85 410	448 830	1 611 150	205 970	1 817 120
1993	1 258 250	116 070	1 374 320	412 540	94 660	507 200	1 670 790	210 730	1 881 520
1994	1 261 130	88 940	1 350 070	509 390	115 220	624 610	1 770 520	204 160	1 974 680
1995	1 406 840	102 340	1 509 180	578 850	146 710	725 560	1 985 690	249 050	2 234 740
1996	1 359 230	134 300	1 493 530	564 290	211 150	775 440	1 923 520	345 450	2 268 970

* Estimated

**APPENDIX 6
TREND IN CHIPLOG PRODUCTION FROM NATIVE AND PLANTATION FORESTS**

Year Ended 30 June	CROWN LAND							Total Private Property (m ²)	Combined Crown land & Private Property (m ²)	Percentage Private Property to Total (%)
	Sawmill (t)	Residue Branchwood (t)	Subtotal (t)	Marri (m ²)	Bolewood + Branchwood Karri (m ²)	Other (m ²)	Total Crown land (m ²)			
1994	1 711 215	68 278	1 779 493	6 667 278	2 164 279	5 150	8 836 707	9 856 811	10.3	
1995	82 684	5 690	88 374	405 111	164 949		570 060	644 455	11.5	
1996	91 410	10 251	101 661	505 655	166 919	2 076	674 650	766 869	12.0	
	72 666	34 498	107 164	492 484	161 206	13 519	667 209	786 313	15.1	
Total	1 957 975	118 717	2 076 692	8 070 528	2 657 353	20 745	10 748 626	12 054 448	10.8	

* 1976 to 1993 inclusive

Note: In 1995-96 5.5% of the total chipwood volume was produced from plantation forests.

APPENDIX 7 TRENDS IN THE PRODUCTION AND USE OF SAWN TIMBER

Year Ended 30 June	Sawn Production		Total (m ³)	Overseas Timber Exports (m ³)	Apparent Local Use (m ³)
	Hardwood (m ³)	Softwood (m ³)			
1970	425 295	16 893	442 188	96 275	345 914
1971	420 777	21 595	442 372	79 437	362 935
1972	379 006	21 733	400 739	101 191	299 548
1973	375 135	23 283	398 418	111 547	286 871
1974	374 899	26 534	410 433	98 200	303 233
1975	368 844	27 086	395 930	100 127	295 803
1976	383 010	16 258	399 268	94 136	305 132
1977	369 151	16 685	385 836	77 352	308 484
1978	347 111	18 669	365 780	58 833	306 947
1979	331 135	18 145	349 280	66 420	282 860
1980	331 411	21 400	352 811	71 955	280 856
1981	330 863	22 954	353 817	65 109	288 708
1982	320 915	22 190	343 105	48 448	294 657
1983	252 124	13 216	265 340	41 789	223 551
1984	258 861	14 723	273 584	N/A	N/A
1985	291 683	21 632	313 315	22 112	291 203
1986	295 160	33 816	328 976	21 497	307 479
1987	280 146	36 512	316 658	9 547	307 111
1988	270 723	47 929	318 652	9 356	309 296
1989	289 665	53 240	342 905	12 965	329 940
1990	265 587	56 962	322 549	20 035	302 514
1991	222 125	41 264	263 389	13 220	250 169
1992	216 673	42 703	259 376	19 936	239 440
1993	230 945	65 564	296 509	16 644	279 865
1994	256 112	86 657	342 769	18 119	324 650
1995	264 390	124 070	388 460	20 346	368 114

Source of export statistics: Australian Bureau of Statistics

APPENDIX 8 TRENDS FOR W.A. OVERSEAS IMPORTS AND EXPORTS OF FOREST PRODUCE

Year Ended 30 June	Timber and Wood Manufacture		Essential Oils and Tannin	
	Imports (\$)	Exports (\$)	Imports (\$)	Exports (\$)
1970	10 968 170	9 568 246	447 015	317 553
1971	6 761 806	6 914 644	279 188	343 512
1972	5 578 819	8 809 273	371 749	348 762
1973	8 326 939	9 640 753	592 249	337 736
1974	11 738 861	11 136 170	691 723	433 627
1975	14 053 751	9 212 370	1 107 743	479 019
1976	19 960 421	10 816 236	504 846	214 918
1977	24 857 792	10 355 198	642 962	45 767
1978	24 039 952	13 434 413	913 289	41 422
1979	18 200 508	18 682 636	614 676	61 525
1980	26 801 716	12 857 407	643 045	255
1981	28 691 997	13 746 212	512 254	2 361
1982	26 068 548	11 270 550	572 629	NIL
1983	23 738 070	9 930 788	342 276	300
1984	N/A	N/A	N/A	N/A
1985	37 871 360	7 524 771	460 064	2 099
1986	37 858 904	7 875 694	403 522	318
1987	47 950 173	5 164 413	559 085	N/A
1988	52 762 401	6 386 708	N/A	N/A
1989	38 419 979	7 335 552	630 776	N/A
1990	41 600 052	9 674 191	476 152	N/A
1991	25 301 336	8 915 635	379 765	N/A
1992	29 877 000	15 417 000	681 000	N/A
1993	35 873 000	14 391 000	658 000	N/A
1994	44 095 000	20 091 000	858 000	N/A
1995	41 193 000	22 875 000	740 000	1 400

Source: Australian Bureau of Statistics

**APPENDIX 9
AREA OF PRESCRIBED BURNS 1993-94 TO 1995-96**

	1993-94	1994-95	1995-96
Indigenous Vegetation - Hand Burning (ha)			
State forest			
▪ handburns	10 990	9 413	25 961
▪ slash and regeneration	12 790	**	**
▪ clearing burns	460	-	-
National parks	8 340	5 579	28 611
Nature reserves	1 240	235	7 048
Other Crown land and private property	260	-	3 580
Total	34 080	15 227	65 200
Indigenous Vegetation - Aerial Burning (ha)			
State forest	142 340	133 597	126 825
National parks	34 570	37 386	38 023
Nature reserves	32 980	15 579	91 830
Other Crown land and private property	2 180	23 881	-
Total	212 070	210 443	256 678
Indigenous Vegetation - Silviculture Burning (ha) **			
▪ Jarrah	-	26 801	32 212
▪ Karri	-	1 516	2 144
▪ Wandoo	-	1 300	-
Total	-	29 617	34 356
Softwood Plantation - Hand Burning (ha)			
State forest			
▪ winter burning	2 180	5 313	6 909
▪ second rotation clearing burns	-	246	66
Total	2 180	5 559	6 975
Grand Total	248 330	260 846	363 209

**APPENDIX 10
WILDFIRES 1993-94 TO 1995-96
NUMBER AND AREA BY LAND CATEGORY
NUMBER AND PERCENT BY CAUSE**

	Number			Area Burnt (ha)		
	1993-94	1994-95	1995-96	1993-94	1994-95	1995-96
State forest						
▪ native hardwood	197	198	121	4 470	10 461	2 978
▪ softwood plantation	67	73	96	140	1 160	349
National parks	69	65	45	37 690	17 977	184 199
Nature reserves	25	26	23	38 570	44 036	65 900
Other Crown lands	71	90	66	101 430	21 018	143 638
Private property	118	131	83	16 900	7 040	3 835
Total	547	583	434	199 200	101 692	400 899
CAUSES						
	Number			Per cent		
	1993-94	1994-95	1995-96	1993-94	1994-95	1995-96
Deliberately/illegally lit	246	220	145	45	38	33
Escapes—CALM burns	27	22	22	5	4	5
Escapes—other burning	51	49	47	9	8	11
Accidental—timber industry	10	7	4	3	1	1
Accidental—other industries	23	39	21	4	7	5
Accidental—recreationists	35	33	26	6	5	6
Lightning	51	75	50	9	13	12
Unknown	75	107	83	14	18	19
Other causes	25	31	36	5	6	8
Total	543	583	434	100	100	100

APPENDIX 11 PURPOSES FOR PRESCRIBED BURNING BY FOREST REGION FOR 1995-96

Dominant purpose	Region	Autumn	Winter	Spring	Summer	Years since last burnt
Fuel reduction*	Swan	7 950	-	52 796	-	5-13
	Central Forest	3 737	-	40 488	1 131	5-10
	Southern Forest	13 953	-	22 990	13 321	6-15
		25 640	-	116 274	14 452	
Silviculture **	Swan	60	-	15 900	-	N/A
	Central Forest	205	-	9 651	1 400	N/A
	Southern Forest	1 465	-	4 018	1 657	N/A
		1 730	-	29 569	3 057	
Nature *** Conservation	Swan	70	-	3 000	-	5-9
	Central Forest	-	-	128	1 100	5-8
	Southern Forest	-	-	-	-	-
		70	-	3 128	1 100	-
Tourism and Recreation	Swan	65	-	1 280	-	6-13
	Central Forest	3 108	-	3 000	-	10
	Southern Forest	90	-	18 065	13 130	6-27
Total (ha)		3 263	-	22 345	13 130	
Grand Total (ha)		30 703	-	171 316	31 739	

Notes

- Fuel reduction burning also protects nature conservation values.
- ** Years since last burnt applies to jarrah silviculture only.
- *** Nature conservation burning also provides community protection benefits.

Data supplied pursuant to the Minister's Statement (24.12.92) under the Environmental Protection Act (1986) that the proposed amendments to the 1987 Forest Regional Management Plan and Timber Strategy may proceed.

APPENDIX 12 NUMBER OF PRESCRIBED BURNS CONDUCTED IN NATIVE FORESTS WITHIN FOREST REGIONS IN EACH SEASON FOR VARIOUS PURPOSES—1995-96

Dominant purpose	Region	Spring		Summer		Autumn		No. of escapes
		Aero	Hand	Aero	Hand	Aero	Hand	
Fuel reduction*	Swan	12	12	-	-	1	2	7
	Central Forest	14	7	1	1	-	9	2
	Southern Forest	7	8	2	6	8	5	3
		33	27	3	7	9	16	12
Silviculture	Swan	3	-	-	-	-	1	-
	Central Forest	5	2	1	-	-	2	-
	Southern Forest	4	13	3	18	-	27	-
		12	15	4	18	-	30	-
Nature Conservation	Swan	1	-	-	-	-	1	-
	Central Forest	-	1	1	-	-	-	-
	Southern Forest	-	-	-	-	-	-	-
		1	1	1	-	-	1	-
Tourism and Recreation	Swan	1	2	-	-	-	2	-
	Central Forest	1	-	-	-	1	1	-
	Southern Forest	4	7	-	1	-	1	1
		6	9	-	-	1	4	1
Total		52	52	8	25	10	51	13
Aero Burns (% by season)		74		12		14		
Hand Burns (% by season)			41		19		40	

* Fuel reduction burning also protects nature conservation values.

Data supplied pursuant to the Minister's Statement (24.12.92) under the Environmental Protection Act (1986) that the proposed amendments to the 1987 Forest Regional Management Plan and Timber Strategy may proceed.

APPENDIX 13 AREA AND NUMBER OF WILDFIRES WITHIN THE THREE FOREST REGIONS—1995–96

Region		State forest native hardwood	State forest softwood plantation	National parks	Nature reserves	Crown lands and private property	Total
Swan	Area (ha)	1 105	337	450	78	2 430	4 400
	Number	81	86	23	6	75	271
Central Forest	Area (ha)	580	11	1 970	630	354	3 545
	Number	28	9	1	2	27	67
Southern Forest	Area (ha)	1 293	1	152	-	710	2 156
	Number	12	1	1	-	9	23
Totals	Area (ha)	2 978	349	2 572	708	3 494	10 101
	Number	121	96	25	8	111	361

APPENDIX 14 WILDLIFE LICENCES ISSUED IN 1995–96

Fauna Licences		Licences Issued	Fauna Licences (Cont.)	Licences Issued
SCIENTIFIC			CROCODILES	
Scientific Collection (Reg 17)		309	Crocodile Farming (Reg 14)	3
Bird/Bat Banding (Reg 23)		159	Processing (Reg 7)	4
EDUCATION & PUBLIC (to take) (Reg 15)		173	KANGAROO	
EDUCATION & PUBLIC (to hold) (Reg 16)		156	Take Kangaroos for sale (Reg 6)	208
AVIAN FAUNA			Deal in carcases (Reg 8)	29
Keep & breed in captivity (Reg 12)		3 854	Skin Dealing (Reg 10)	19
Deal (Reg 13)		64	Processing (Reg 7)	24
Breed for Commercial Purposes (Reg 14)		3	EXPORTS INTERSTATE	
Trap (Reg 11)		5	Skins of fauna (or other dead fauna)	196
Species Trapped Commercially	Number		Fauna (live) other than emus	256
Twenty-eight Parrot	856		Fauna (live emus)	18
Red-capped Parrot	642			470
Western Rosella	521		EXPORT OVERSEAS	
FAUNA			Skins of fauna (or other dead fauna) from WA	304
Keep in Captivity (Reg 12A)		154	Emu eggs or products (personal items) from WA	43
EMUS			Fauna (avian) from WA (live)	10
Emu Farming (Reg 14)		62		357
Dealing (Reg 8)		3	IMPORTS INTERSTATE	
Dealing (Emu eggshells Reg 13)		19	Skins of fauna (or other dead fauna) into WA	5
Skin Dealing (Reg 10)		4	Australian fauna (live)	537
Processing (Reg 7)		11	Live exotic birds and other animals	313
				855
			Flora Licences	
			COMMERCIAL PURPOSES	792
			COMMERCIAL PRODUCERS	492
			SCIENTIFIC/PREScribed PURPOSES	829
			PERMITS TO TAKE DECL. RARE FLORA	91
				2 204

APPENDIX 15 SUMMARY OF DAMAGE LICENCES ISSUED IN 1995-96

No. of Licences Issued		Total No. of Each Species Authorised to be Taken	No. of Licences Issued		Total No. of Each Species Authorised to be Taken
WATERFOWL			OTHER AVIAN FAUNA		
Wood Duck	21	640	Australian Raven	22	400
Black Duck	4	195	Long-billed Corella	1	Scare only
Grey Teal	1	Scare only	Galah	14	1 600
Sacred Ibis	2	Scare only	Little Corella	21	1 458
White Ibis (trap/relocate)	1	50	Night Heron (trap/relocate)	1	50
Coromorant	2	7	Silvereye	0	0
			Silver Gull	13	6 800
EMUS	15	543	Twenty Eight Parrot	12	1 285
DANGEROUS FAUNA			Welcome Swallow (trap/relocate)	5	51
Magpie	74	89	Western King Parrot	2	30
Saltwater Crocodile	27	30	White-tailed Black		
Butcher Bird	1	1	Cockatoo	5	Scare only
MAMMALS					
Australian Sea-lion	1	Scare Only			
Long-haired Rat	3	No set quota			

APPENDIX 16 OFFENCES UNDER THE WILDLIFE CONSERVATION ACT AND REGULATIONS

Charges	Reported Offences	Convictions	Fine \$	Cost \$	Dismissed	Letter of Warning	No Further Pending Action	
WILDLIFE CONSERVATION ACT								
Use of illegal devices in taking fauna.	6	0	0	0	0	0	0	6
Illegal taking or possession of protected fauna.	65	18	7 200	1 460.50	0	3	20	24
Illegal importation, selling or taking for sale of fauna.	19	1	200	295	0	9	1	8
Offences relating to the taking or possession of rare or threatened fauna.	16	0	0	0	0	1	1	14
Illegal taking of protected flora.	15	9	4 050	1 503	0	26	7	53
Offences relating to the sale of protected flora.	28	1	200	0	0	11	2	14
Taking declared rare flora without the Minister's consent.	2	0	0	0	0	0	0	2
Offences against wildlife officers.	10	0	0	0	0	0	0	10
Failing to comply with licence conditions.	10	1	0	0	0	3	1	5
WILDLIFE CONSERVATION REGULATIONS								
Offences relating to the possession, control and disposal of avian fauna.	21	2	100	0	0	11	1	7
Offences relating to activities on Nature Reserves.	7	0	0	0	0	5	1	1
TOTALS	279	32	11 750	3 258.50	0	69	34	144

APPENDIX 17 PUBLICATIONS PRODUCED IN 1995-96

GENERAL

Annual Report of the Department of Conservation and Land Management 1994-95
CALM Book News (leaflet, 4 issues)
 CALM Internal Telephone Directory 1996
CALM News (newspaper, 7 issues)
CALM Science Vol 2 No 1 (journal)
 Canning River Regional Park—Draft Management Plan
 Christmas Book Catalogue 95
 Disability Service Plan
 Dryandra Woodland—Management Plan No 30
 Dryandra Woodland—Management Plan No 30 Public Submissions
 Karijini National Park—Draft Management Plan 1995
LANDSCOPE advertising insert (numerous)
LANDSCOPE Calendar 1996
LANDSCOPE Expeditions 1996 (leaflet)
LANDSCOPE Magazine (4 issues)
 Lane Poole Award Application 96
 Lesueur National Park and Coomaloo Nature Reserve—Management Plan
 Nambung National Park—Draft Management Plan
 National Parks and Nature Conservation Authority Annual Report 94-95
People in CALM Places (booklet)
 Purnululu National Park—Management Plan No 33
 Purnululu National Park—Management Plan No 33: Public Submissions
 Sharing the Dreaming (poster)
 Science and Information Technical Report 1985-1995
 Swan Estuary Marine Park and Adjacent Nature Reserves—Draft Management Plan
 Training and Development Manual '95
 Two Peoples Bay Nature Reserve—Management Plan No 32
 Two Peoples Bay Nature Reserve—Management Plan No 32: Public Submissions
 Wanjarri Nature Reserve Management Plan No 35
 Wanjarri Nature Reserve Management Plan No 35—Public Submissions

NATURE CONSERVATION

Broome and Beyond (book)
Common Birds in South-West Forests—Bush Book
Common Birds in the Backyard—Bush Book
Common Birds of the Kimberley—Bush Book
Common Plants of the Kimberley—Bush Book
Common Trees of the South West—Bush Book
Common Wildflowers of the South-West Forests—Bush Book
Common Wildflowers of the Mid-West—Bush Book
 Dryandra Ecology Course (leaflet)
Hazardous Animals of North-Western Australia—Bush Book
 Help Save the Mallee Fowl (leaflet)
 Lake Toolibin (leaflet)
 Magpies (leaflet)
Mammals of North-Western Australia—Bush Book

Mammals of the South West—Bush Book
Nuytsia Vol 10 No 2 (journal)
Nuytsia Vol 10 No 3 (journal)
 Operation Foxglove (Leaflet)
 Operation Western Shield (leaflet)
 Operation Western Shield (poster)
 Orange-bellied and White-bellied Frogs—Wildlife Management Program No 19
 Project Eden Newsletter April 96
 Return to Eden (leaflet)
 Roadside Conservation Committee (leaflet)
 Rose Mallee Recovery Plan
 Western Shield Action Pack (education kit)
Whales and Dolphins of WA—Bush Book
 Wongan Hills Trigger Plant Recovery Plan
 Woylie Recovery Plan—Wildlife Management Program No 16

TOURISM AND RECREATION

Avon Descent Public Information 1996 (leaflet)
 Bibbulmun Track, Kalamunda-Brookton Highway (map)
Book that Bird (booklet)
 Canning River Regional Park (leaflet)
 Discovering Penguin Island and Shoalwater Bay Islands Marine Park (booklet)
Dive and Snorkel Sites in WA (book)
 Dryandra Woodland Visitors Guide (leaflet)
 Esperance National Parks (leaflet)
Exploring Wheatbelt Woodlands (book)
 Forest Adventure Experience—Spring 95 (leaflet)
 Gascoyne Hinterland (leaflet)
 Geikie Gorge National Park (leaflet)
 Geology of Winjana Gorge (leaflet)
 Go Bush—Spring 95 (leaflet)
 Go Lightly Four Wheel Drive (leaflet)
 Go Bush Gets Adventurous (leaflet)
 Go Bush—Native Animal Encounters (leaflet)
Guide to Running Activity Programs (kit)
 Hills Forest Sights and Sounds of the Night (leaflet)
 John Forrest National Park (leaflet)
Karri Country (newspaper)
Kimberley Parks (newspaper)
 Mt Augustus National Park (leaflet)
 Mt Bruce Walk Trail (leaflet)
 National Parks of the Gascoyne (leaflet)
 Parks of the Coral Coast (leaflet)
Pilbara Parks (newspaper)
 Range to Reef (folder)
 Stirling Range and Porongurups National Parks (leaflet)
 The Forest Walk '95 (leaflet)
The Goldfields (newspaper)
 The Kimberley Parks and Reserves 1996 Recreation Guide (leaflet)
 The Tree Tower Experience (leaflet)
 The Tree Tower Passport (leaflet)
 Visitor Interpretation Manual (kit)
 Welcome to the Forest Walk (leaflet)

FOREST RESOURCES

Arbor Day Poster 1996
 A Seasoned Performance (leaflet)
 Catchment Carer's Trail (education kit)
Deferred Forest Assessment for Western Australia (booklet)
 Domestic Firewood, Craftwood and Minor Forest Products in the South West - CALM Briefing Paper 2/91
Facts about WA Forests (newspaper)
 Guidelines on Management of Sandalwood on Private Property—CALM Briefing Paper 1/95
 Looking Beyond the Obvious (leaflet)
 Pine Sharefarms (leaflet)
 Seed Price List 95-96
 The Forest Heritage Centre Dwellingup (leaflet)
 Winter Firewood (leaflet)

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