

CALM NEWS

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DEPARTMENT OF CONSERVATION
AND LAND MANAGEMENT
WESTERN AUSTRALIA

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DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

SEPTEMBER-OCTOBER 1995



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Dr Syd Shea, CALM Executive Director; Mr Colin Barnett, Resources Development Minister; Mr Peter Foss, Environment Minister; Mr Richard Court, Premier of WA; Mr Ikuro Kuwajima, Nippon Paper Industries; Mr Noboru Kishida, Mitsui Tokyo and Mr Seiji Kawarabayashi, Mitsui Australia at the project launch.

Photo by Ross Swanborough

Back from the brink

ENVIRONMENT Minister Peter Foss recently launched the first in a series of programs designed to conserve Western Australia's biodiversity and prevent native plants and animals from becoming extinct.

He also announced an immediate injection of \$300,000 to fund programs to conserve species listed as critically endangered under the World Conservation Union (IUCN) ranking system.

This funding comes from money paid to CALM's bio-prospecting program by Victorian company Amrad for the right to use one of WA's native plants in its search for a cure to AIDS.

"The conservation of our incredibly diverse range of native plants and animals is central to conserving our ecosystems - the basis of our natural environment," Mr Foss said.

"By assessing priorities and ensuring research and management resources are allocated to those species most at risk of extinction, we can halt the process that has seen 12 species of WA native mammal and 39 species of flowering plant presumed extinct in the past 150 years."

Other elements of the overall strategy will include further conservation measures on rural land, an expanded feral predator control program and implementation of the State Government's 'New Horizons in Marine Management' policy released last year.

The threatened species review was carried out by a panel of eminent Western Australian botanists and zoologists and chaired by Dr Andrew Burbidge, Director of CALM's WA Threatened Species & Communities Unit.

The panel identified 46 species made up of 38 plants, three mammals, two birds, one reptile and two spiders as being critically endangered. A further 78 are endangered.

The study looked at 375 threatened species, and was the first joint assessment of

◆ Continued on page 2

Premier announces more bluegums for WA

WESTERN Australia leads the nation in hardwood timber plantation establishment and its position has been further strengthened with the announcement of a new \$60 million tree planting project.

Japan's Mitsui Company and Nippon Paper have appointed the Department of Conservation and Land Management to plant up to 20,000 hectares of bluegums on already cleared farmland in the Collie/Darkan region over the next 10 years.

Announcing the project recently, Premier Richard Court said another \$400 million would be spent over the 20-year harvest period, generating significant export income for the State.

"This is the third such agency agreement between

by Caris Bailey

CALM and overseas investors, who have now committed a total of \$150 million to establish bluegum plantations in the State's south-west," Mr Court said.

"The 50,000 hectares to be planted under these agreements are in addition to State-owned plantations and others established privately.

"Annual plantings in Western Australia now total about 12,000 hectares of bluegums and another 5000 hectares of other species.

"Support for plantations is growing nationally, but WA is leading the way in putting trees in the ground.

"CALM is targeting land already cleared for agriculture

for new plantations so that we can reap not only economic benefits, but significant land care benefits.

"With the wisdom of hindsight, we know that clearing native vegetation to create farms has led to rising water tables and problems with salinity and waterlogging, as well as erosion and pollution caused by excess fertiliser runoff.

"Broad-scale tree planting will prevent and even reverse these problems."

Contracts appointing CALM as project manager were signed in Perth, together with a State Agreement to protect the companies' interests in the final harvest.

Environment Minister Peter Foss and Resources Development Minister Colin Barnett also attended the signing ceremony,

together with senior company executives from Tokyo.

Mr Foss said nearly one million hectares of Western Australia's agricultural soils had been degraded by salination and a much greater area was threatened unless remedial action was taken.

"This is a massive problem that requires a solution on the same massive scale," Mr Foss said.

"The Mitsui/Nippon Paper project makes land care in the Collie/Darkan region not only affordable, but profitable.

"Altogether, 25 million trees will be planted under this project."

Mr Barnett, the Minister responsible for the State Agreement, said the project showed just how well economic and environmental

goals could be integrated.

"Our ability to attract investors of the calibre of Mitsui and Co and Nippon Paper Industries is testimony to this new forest industry begun only a few years ago by CALM," Mr Barnett said.

"Mitsui is the biggest company in the world, with more than 12,000 employees across 90 countries, generating about \$263 billion in the past financial year.

"Nippon is the biggest paper manufacturer in Japan and one of the biggest in the world.

"Both companies are already working in Western Australia and I welcome their further investment here."

The first trees in the Mitsui/Nippon Paper project will be planted under sharefarming agreements with landowners in 1996.



One of the pleasant problems that those who produce CALM News are increasingly facing is how to give equal rating to major good news stories in the paper. The reason for the delay in this edition of CALM News was because I was concerned that some of the major good news stories were not towards the front of the paper.

Four of the major news items in this edition of CALM News - a new plantation program, a major strategy to conserve native plants and animals, the opening of the Diamond Tree and the landmark agreement between CALM and the AWU - have been made possible principally because of two factors.

Firstly, the enthusiasm and commitment of people who work for CALM. This is our most important asset and it is one I am very conscious we need to nurture and encourage even more than we have done in the past, because of the huge stresses that are being placed on individuals in this organisation. In response to concerns about morale in some parts of the organisation, we have established a series of 'leadership' courses which are designed to give people a chance to get away from the pressures of their day to day job to think, and also to interact with a wide cross-section of people within the Department. These groups have already provided valuable feedback on things we can do to assist staff to maintain the enthusiasm and commitment which so many people who view the Department from the outside comment on.

The second reason we are able to announce these major projects is that we have secured independent funding for them. We may have the best people in the world working for CALM, but if we don't provide the funds for them to do the job, then we won't produce anything of any significance. We have been able to obtain the funds because under the net appropriation agreement we have negotiated with the Government, we are able to retain all of the revenue we earn. So, for example, the major expenditures involved in implementing the 'back from the brink' program have been met by using money we obtained from AMRAD, which paid us for the rights to investigate and develop a potential pharmaceutical compound from smokebush.

While net appropriation has been a boon, allowing us, for the first time, the freedom to develop major initiatives such as nature based tourism and conservation programs such as fox control, it has also brought an immense responsibility to the Department and individuals in it. We can no longer assume there will be a pot of money always available to sustain our favourite projects. No longer can we have a *laissez-faire* approach to budget management. This new system of financing requires a major change in our culture. Like all changes, it will cause pain, but the benefits are well worth it, because this system allows us to obtain the funds we require to take quite extraordinary initiatives in conserving and managing lands and wildlife in this State.

In our negotiations over the years with the Japanese companies we wanted to invest in tree planting in Western Australia, we adopted what we called the 'seeing is believing' strategy. In other words, we said: "it is pointless us telling you how good we are at growing trees, come and see for yourselves how well they are growing". Similarly, the best way I believe we can justify our approach to conservation and land management is to ask people to have a look at what's being achieved.

Over the next several months editors of CALM News are going to find the problem of giving sufficient credit to major initiatives even more serious as we announce major initiatives which are the culmination of several years of management and research efforts.

Dr Syd Shea, Executive Director

New forest icon officially opens

ONE of the South West forest's landmarks was officially opened to the public recently as part of a combined forest protection and tourism initiative by CALM.

Diamond Tree—one of the renowned fire lookout trees of the karri forest—is destined to become one of the icons of the southern forest, drawing visitors from far and wide.

The tree was recommissioned as a fire lookout last season and Environment Minister Peter Foss last month officially opened it to the public at a function attended by representatives of the local community, including members of Friends of Diamond, who were instrumental in having the facility upgraded.

Diamond Tree, 10 km south of Manjimup, was first identified as a suitable lookout tree in 1939. District forester George Reynolds used 120 karri pegs to create a spiral 'stairway' to the first fork in the tree almost 50 metres above the ground.

Legendary axeman Dick Sproge lopped the crown to pave the way for a cabin built by George Reynolds and millwright and bush carpenter Laurie Jones. This was later hoisted up among the prepared branches.

The tower was used from 1941 and was a major tourist drawcard until the mid-1970s, when it was considered the tree had become unsafe. The cabin was removed for renovation in 1991 and replaced to maintain the authenticity of the tree.

Mr Foss said the Diamond Tree redevelopment was a \$150,000 project which had been provided from timber

royalties. The work included repegging the tree, refurbishing the cabin and installing new facilities at the recreation site.

The development includes new toilets, carparking and picnic and barbecue areas. A longer walk trail also is being created to complement the existing Jim Fox Adventure Trail.

Mr Foss said the integration of protection and tourism in the one facility was an innovative CALM initiative that promises a great challenge and an environmental and economic payoff.

Diamond Tree and its well-known counterpart, the Gloucester Tree, will soon be joined by a third lookout tree—the Bicentennial Tree in the Warren National Park.

This will be the last link in a three tree climb that is bound to inject further tourism dollars into the local community, as well as provide added fire protection for local residents.

Other nature-based forest tourism projects to be announced soon will demonstrate how a sensitively managed tourism industry can exist in harmony with the environment and its ecosystems.

As with the Diamond Tree redevelopment, the new projects will largely be funded by the forests themselves, via income generated through, among other things, log royalties.

Soon the South West will be dotted with forest icons that maintain the integrity and conservation values of the forests, while giving visitors a bird's eye view of its sustainable, multiple use management.



John Lloyd, ex-Manjimup District Manager, Jeanette Sturis, Friends of Diamond and Peter Foss, Environment Minister, at the opening of Diamond Tree. Photo by Nigel Higgs



Don Nicol and David Bell of Tricorp Trading, the contractors who re-pegged and refurbished Diamond Tree, with the wine they had bottled to commemorate the occasion. Photo by Penny Walsh

Back from the brink—new priorities

Continued from page 1 the State's threatened plants and animals.

It was also the first time the new IUCN category of critically endangered had been used in ranking WA wildlife. The rest of the species were classified as vulnerable, except the woylie, which was classified as conservation dependent.

"The results show that while many species are not immediately threatened,

urgent action is needed to protect a small number from imminent extinction," Mr Foss said.

Thirty of the critically endangered species occur in the Wheatbelt and the arid zone. They are often found along roadsides or in small populations within blocks of remnant vegetation.

"This reflects the enormous environmental pressures that have stemmed from widespread clearing

of native bushland," Mr Foss said.

"It reinforces the fact that the real conservation priority is in the Wheatbelt which, in terms of biodiversity, is the richest area in the State."

Mr Foss said the South West region of WA was among the most species rich areas on Earth, with about 6000 named and a further 2000 unnamed species of vascular plant.

"We are fortunate that we have several major national parks and hundreds of other conservation areas, such as nature reserves, that afford protection to many of these species," he said.

"For example, the Fitzgerald River National Park has 1750 species; the Stirling Range has 1200 and the Lesueur National Park has 821 species. Together, these three parks protect populations of about one-third of the native flowering plants of the South West.

"However, about 2000 of our native species - especially those on the heathlands - are at risk from the insidious disease, dieback, caused by the introduced pathogen, *Phytophthora cinnamomi*.

"Conservation of our threatened flora is a complex task that requires the cooperation of everyone."

Mr Foss said many of the species had been, or were currently being, researched by CALM and other conservation agencies.

Six of the species were covered by formal recovery plans or interim recovery plans. Interim recovery plans were currently being prepared for a further 11 of the species.

Twenty-one of the critically endangered plants were covered by CALM's regional or district threatened flora management programs. A further 68 species listed as endangered were either covered by these plans or plans that were being prepared.

Plaudits for Ibis Aerial Highway brochure

THE Ibis Aerial Highway brochure, jointly produced by CALM and the Kimberley Tourism Association, has recently been given national recognition by the travel industry through its trade magazine *Traveltrade*.

It came second in *Traveltrade's* domestic

"Brochure of the year" award and won plaudits from publishers in the tourism industry.

"All of those involved can feel justly proud of the achievement, as there were scores of entries in the domestic category from companies all over the nation," said Kimberley Tourism Association marketing

manager Alan Hines.

The Ibis Aerial Highway brochure was judged against 120 other entries on its cover, layout, copy, maps, photographs, essential facts, appeal and technical production. It earned 288 points out of a possible 300.

"The quality of the brochure easily matched the

quality of attractions found in the region," said Mr Hines.

The Ibis Aerial Highway links the major attractions of the Kimberley via a network of small airstrips. It is a cooperative venture between CALM, Kimberley tour operators and local government.

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Managing Editor: Ron Kawalilak

Editors: Verna Costello, Nigel Higgs

Contributing Editors: David Gough, Penny Walsh

Design, Layout and Production: Sandra Van Brugge

Published by CALM Corporate Relations Division, Cygnet Hall, (cnr) Mounts Bay Road & Hackett Drive, CRAWLEY, Western Australia 6009
Telephone: (09) 389 8644 Facsimile: (09) 389 8296

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Sad farewell to Trevor McGill

IT is with great sadness that we report the sudden passing of Trevor McGill, Manager, Records Management Section, on Wednesday, 18 October 1995.

Trevor's knowledge of CALM's record management system and his jovial attitude will be sadly missed by all at Como.

As a career public servant, Trevor began work with the Transport Commission in June 1975 as an assessor. He was transferred to the Forests Department in July 1979 as a clerk, and in April 1988 was promoted to clerk in charge, Records Section, of the then Clerical Branch.

During the formation of CALM, Trevor was part of

By Information Management Branch

the working committee set up to develop an integrated records management system. He was duly appointed Manager of CALM's Records Branch.

As a result of his skills and understanding of records management, Trevor was responsible for the implementation of Freedom of Information (FOI) legislation within CALM. It is for this work we will be greatly indebted as we tackle FOI requests in the future.

Trevor took a keen interest in planning for CALM's move into an electronic document management en-



vironment and it is particularly sad that he will not be with us as we realise this vision in the near future.

A family man, married

in 1978, Trevor is survived by his wife Kym and two daughters Bella and Jamie. Our heart felt sympathy is extended to them.

Fire agencies coordinate their metro resources

BUSH fire resources in and around the metropolitan area will be better coordinated this summer under a new agreement between the Department of Conservation and Land Management and the Fire and Rescue Service of WA.

The agencies have entered a partnering arrangement which opens the way for much closer cooperation and more efficient response to wildfires, particularly those in the Hills area.

CALM Executive Director Syd Shea said that while there had been a high level of cooperation between the agencies and with the volunteer bush fire brigades through the Bush Fires Board and local shires for many years, the rising number of wildfires in the metropolitan area meant there was an increasing demand being placed on fire fighting resources.

It was essential these

resources were coordinated and that each agency had a clear understanding of its roles and expertise in relation to various fire situations.

"There is no doubt that when it comes to structural fires, chemical hazards and rescue, the FRS crews are highly skilled," Dr Shea said.

"At the same time, CALM's core fire fighting force ranks among the world's best when it comes to bush fires, particularly forest fires.

"The partnering charter provides the way for all the agencies to benefit from each other's knowledge, training programs and resources."

Under the agreement, a FRS station officer has been seconded to CALM's Mundaring district office where he will spend the fire season working alongside CALM staff on a range of fire management activities including prescribed burning and wildfire control.

The officer is Ed

Bartosiak who currently is in charge of the Midland Fire Station.

At the same time, CALM officers will be visiting FRS stations at Wangara, Midland and Armadale to discuss fire fighting issues.

FRS Chief Executive Officer Chester Burton said a major problem that only recently had been rectified was the different command, control and co-ordination systems CALM and the FRS used at wildfires.

"The FRS now has adopted the Australian Inter-service Incident Management System, which is based on organisation by function," he said.

"These functions include operations, planning and logistics under the overall control of an incident controller.

"CALM and the Bush Fires Board have been using the system for several years and have found it is a critical part of their fire management activities,

especially in combating large scale fires such as those that occurred in the forests and plantations last summer.

"As well, the WAFB recognises there are important differences in the approach that has to be taken to various bush fire incidents.

"For example, the use of backburning is a complex issue that requires a lot of knowledge about bush fire behaviour, particularly the relationship between the amount of fuel available and fire intensity.

"CALM is acknowledged internationally as one of the leading agencies when it comes to understanding bush fire behaviour and the options available to fire controllers at large scale fires.

"By adopting some of CALM's techniques, the Fire and Rescue Service will be better placed to respond to the threat wildfires pose in the metropolitan area."



Jade Jackson meets the stranded seal at Underwater World. Photo by Doug Coughran

Subantarctic seal found all washed up

THE annual winter fronts not only bring rain and strong winds to our coast, but also ocean-dwelling wildlife, which is often found battered, bruised and suffering from exhaustion on our beaches.

One such waif was a yearling subantarctic fur seal rescued from Point Peron in July, pictured above with another cutie, Jade Jackson at Underwater World.

CALM officers assessed the seal's condition in response to a call from Graham Anderton, the

by Doug Coughran

manager and caretaker of the Apex Club camp, and the decision was made to take the fur seal into captive management to aid its chances of survival.

Since the closure of Atlantis Oceanarium at Two Rocks, suitable holding facilities for long-term rehabilitation have not been available. However, there is a glimmer of hope on the horizon with Underwater World

offering temporary care and expertise from their marine mammal curatorial section.

A joint effort between CALM and Underwater World is proposed, to build a marine mammal rehabilitation centre within the Underwater World complex at Hillarys.

Underwater World is in the process of seeking external sponsorship to build the centre, which in time will be the springboard from which waifs like this little seal can be rehabilitated into the wild.

Landmark agreement for CALM and AWU

A landmark industrial agreement that will have long term significance for the State's conservation estate has been negotiated between the Department of Conservation and Land Management and its Australian Workers Union staff.

The agreement is particularly important as it will provide greater security and flexibility for the workers and ensure CALM can maintain its core staff throughout the year.

This core staff of 280 employees is critical to the protection of life, property and community assets from the ravages of wildfires.

CALM Executive Director Syd Shea said AWU staff had always been a vital part of CALM's organisation and these new arrange-

by Nigel Higgs

ments were the key to enabling the Department to confront the changes that were necessary in the public sector while still providing the highest service to the community.

Environment Minister Peter Foss welcomed the agreement which he said would be a positive step for the Department and its staff. The agreement also would be positive for the environment because it would enable CALM to provide services when they were needed.

"In particular, it will make a big difference in the area of fighting wildfires," Mr Foss said.

"Western Australia has probably the best bush fire fighters in the world and they help protect lands and resources worth billions of dollars during the

fire season.

"They respond to more than 500 wildfires a year on lands managed by CALM and on private property, and without them, we could not possibly hope to combat those fires or the potential destruction they pose."

Labour Relations Minister Graham Kierath said under the new Certified Agreement, which would be registered in the Australian Industrial Relations Commission, CALM's AWU staff would receive a \$38 a week increase.

This increase included some existing allowances and would absorb the second and third \$8 a week arbitrated safety net increases which were available under last year's National Wage Case decision.

The real wage increase was seven per cent and

would be funded jointly by the State Government and from CALM's budget.

The agreement will result in productivity improvements and savings in management and accounting costs. It also will enable CALM workers to negotiate flexible working arrangements at a local level and allow CALM to earn additional revenue.

Changes to the period over which pay is calculated also will mean more efficient accounting and reporting, and the workers will receive an additional three days pay when they resign or retire.

Joint Consultative Committees at CALM work centres will oversee the implementation of the agreement and negotiate local working arrangements.

These arrangements will enable the staff to seek outside contract work including rehabilitation of minesites, tree planting on private land, roading and silvicultural works for CALM's business units.

"The new Certified Agreement means CALM's AWU staff will be more competitive when it comes to tendering for these and other contracts. This will lift the overall productivity of the Department," Mr Kierath said.

Both Mr Foss and Mr Kierath paid tribute to the staff and the Union and congratulated them for the positive manner in which they entered negotiations over the new agreement.

It now means that 530 of CALM's 1228 employees have entered workplace or certified agreements.



Human Resources Branch Manager Alan Scott and AWU staff representative John Jackway with a copy of the agreement. Photo by Don Scott

Making sense of Science and Information

CALM's Science and Information Division is divided into four Groups. Three of these are actively science based—Bio-Resources, Bio-Conservation, and Sustainable Resources—while the fourth—Science Services—delivers mainly corporate services.

This structure has been devised not so much to keep the groups separate, as to identify their different focuses and allow for cross fertilisation.

"We wanted to create something of a Department in microcosm," said Acting Director of the Division, Dr Neville Marchant.

"While each group has its own objectives, they work closely together. There are also collaborations with scientists from the CSIRO, universities and other government agencies."

Each of the four sections has a Head who is responsible for coordinating the scientific expertise within the group, and forming project teams.

Bio-Resources Group

Head of the Bio-Resources Group is Dr Neville Marchant (currently Acting Director of the Division in Jim Armstrong's absence).

Bio-Resources involves the systematic inventory of biological and ecological information on the State's plants and animals, as well as documentation of landscape characteristics and ecological communities.

The Group is divided into two sections: the Community Resources Section which focuses

by Penny Walsh

on documenting ecological communities across the State; and the Species Resources Section which relates to an inventory of all the plants and animals.

"Western Australia's mega-diversity makes the task of bio-inventory an enormous one, fortunately computers have saved the day," said Dr Marchant.

Information on plants, animals and their habitats is stored on computer and used when determining conservation value, developing land management techniques, and providing biological data on threatened taxa and taxa with economic value.

"CALM's herbarium, for example, serves as a massive information centre with 350,000 plant specimens in its collection. Although that sounds a lot, it isn't when you consider we are dealing with a diverse area of 2.5 million square kilometres."

Dr Marchant's introduction to the taxonomic field came as a 16 year-old assistant at the Herbarium. He went on to study Botany at UWA and worked as a Graduate Assistant teaching taxonomy, plant anatomy and morphology, and general botany.

After winning an Australian Legacy Scholarship he moved to Cambridge University as a PhD student in plant taxonomy. In his final year he applied for a botanist position back at the WA Herbarium and duly returned in 1970.

Apart from two secondments to UWA, Dr Marchant remained

there until the Herbarium became part of CALM in 1988 and he became senior botanist. The position as Head of Bio-Resources followed.

Bio-Conservation Group

Newly appointed Head of the Bio-Conservation Group is Dr Neil Burrows.

The main focus of Bio-Conservation is to provide a scientific basis for the management of the State's fauna and flora, especially rare or threatened species and communities.

The group also identifies threatening organisms and processes such as introduced predators and diseases, and determines the most effective control measures.

Principal clients of this group are the parts of CALM which effect conservation through policy and management. At a wider community level, the Group is also a major source of practical expertise in species and community conservation.

Bio-Conservation is divided into the Community Conservation Section which looks at the structure and stability of terrestrial and aquatic communities; and the Species Conservation Section which focuses specifically on threatened and other priority conservation taxa in WA.

Dr Burrows joined CALM's predecessor, the Forests Department, in 1977 as a forest research officer in Manjimup. His initial work involved researching fire behaviour and impacts in pine plantations and jarrah



Dr Neville Marchant and Dr Ian Abbott. Photo by Penny Walsh

forests.

In 1982 he became officer in charge at the Manjimup Research Centre, where his work on fire research continued, along with the administration and management of other research staff at Manjimup.

In 1988 Dr Burrows moved to the position of senior research scientist at Woodvale, where his work extended to fire in hummock grasslands. He was principal research scientist and manager of the natural products section at Como until his recent appointment as Head of Bio-Conservation.

Sustainable Resources Group

Head of Sustainable Resources is Dr Per Christensen.

The role of Sustainable Resources is to provide information that ensures the natural resources CALM is responsible for managing are used in a sustainable way with the least possible disturbance to and effect on the environment.

This includes the provision of information on growing exotic plantation trees for wood and other products, as well as to alleviate the pressure on local species.

The Group is made up of two sections: Natural Products and Tree Crops.

The Natural Products Section undertakes scientific research into the management and use of species from which natural products are derived, and provides advice to managers in these areas. It also explores the possi-

bilities for developing new products whether independently or in collaboration with other organisations.

The Tree Crops Section covers plantations that range from those where the sole aim is wood production, through to those where the goal of tree plantings is either to rehabilitate a degraded environment or prevent the degradation of an environment.

Dr Christensen began his forestry career in 1958 in Kenya where he worked in the districts and later in research. He came to WA in 1968 and began work with the Forests Department as an assistant district forest officer at Manjimup. He carried out research into Karri silviculture, dieback and forest ecology.

Between 1974 and 1977 he gained a PhD from UWA in the Biology of the Woylie and the Tamar Wallaby in Relation to Fire. He returned to Manjimup and became an inspector of research.

Dr Christensen was appointed superintendent of research a couple of years before the Forests Department became CALM. This effectively made him second in charge of forest research. He has been Head of the Sustainable Resources Group since its inception.

Science Services Group

Head of the Science Services Group is Dr Ian Abbott. This Group ensures that essential financial, computing, biometrical and publishing services are provided to support the Science and

Information Division.

The Group is also responsible for the Department's vegetation health services, which focus primarily on identification of pathogens.

Science Services takes a 'big picture' approach to much of the work that is done within the Division. It is responsible for checking there is a coordinated approach to the formulation of project proposals, as well as advising on the best use of computer resources.

Within the financial area, Science Services oversees the expenditure of between two and three million dollars worth of external grants. The group also oversees the publishing and dissemination of scientific research a technical investigations.

The Science Services Group is divided into several sections: Information Science, Biometrical Services, Financial Services, Threatened Flora Seed Centre and the Vegetation Health Service.

As well as heading the group, Dr Abbott serves as Science Adviser to the Director of Science and Information. He joined the Forests Department in 1979 as a research officer studying, among other things, the effect of fire in jarrah forest on soil and litter invertebrates.

As a forest entomologist, his work expanded to include research into the Jarrah leaf miner and other insect pests. In 1987, Dr Abbott became involved in research administration, and in 1992 he accepted the position of Science Services Group Head on an Acting basis.



Dr Neil Burrows and Dr Per Christensen. Photo by Penny Walsh

New walk trail for Mt Bruce

VISITORS to the Karijini National Park now can trek along a new trail and virtually reach the 'top' of Western Australia.

The trail winds up Mt Bruce, at 1235 metres once thought to be the State's highest landmark, until nearby Mt Meharry was measured at 1244 metres.

Environment Minister Peter Foss officially opened the trail at a function in the park recently where he also announced details of a Memorandum of Understanding between the Department of Conservation and Land Management and Hamersley Iron.

The walk comprises three stages. These are the:

- Marandoo View Walk - a 500 metre return trek to a point over looking the Marandoo iron ore mine operation. The

trail has been built to assisted wheel chair standard.

- Honey Hakea Track - a 4.5 km, two-hour return trail with views over other landmarks such as Chinamen's Hat.

- Mt Bruce Summit Route - a 9.5 km, five-hour return trail leading along the western spur of the mountain to the summit which provides spectacular 360 degree views up to 60 km away.

The trail is a joint effort by CALM, Hamersley Iron, the Australian Trust for Conservation Volunteers, the Federal Department of Tourism and the Australian Nature Conservation Agency, and follows consultation with elders from the Kurruma, Innawonga and Punjima Aboriginal people.

Previous access to the summit

was along a narrow, steep and badly eroded trail that had developed through public use. It was poorly located, impossible to maintain properly, degraded the environment and views were restricted until hikers reached the summit.

"The new trail is an outstanding feature which compares very favourably with the walk up Uluru," Mr Foss said.

"It will be one of the icons of the Pilbara, adding a new dimension to visitor experiences in Karijini where the focus previously has been down in the gorges rather than up on the peaks".

Interpretive material along the trail gives visitors an insight into the Aboriginal heritage and cultural aspects of the area as well as information

on the local flora, fauna and landforms.

Fifty-five volunteers, ranging from teenagers to seniors, worked in small groups for periods of two weeks to build the trail.

As well as local conservation enthusiasts, travellers from England, Ireland, Wales, Canada, France and The Netherlands were among this group.

They did everything from establishing the trail through to building steps, putting up signage, and carting generators, cement and water up and down the mountain.

Their efforts were coordinated by the Australian Trust for Conservation Volunteers, and their involvement, along with that of the big mining company, Hamersley Iron, and

State and Federal Government agencies, reflects the growing integration of economic development and the conservation effort.

The new trail will help conserve the very features that draw people to the park. These include the beautiful wildflowers and the rocky outcrops and scree slopes that are habitat for native animals such as the djoorri (a rock rat) and Rothschild's rock-wallaby.

As well, Mt Bruce includes populations of Kingsmill's mallee and Ewart's mallee which are outliers from their normal areas of distribution in the Gibson Desert, Northern Wheatbelt and Great Victoria Desert.

The Memorandum of Understanding between CALM

and Hamersley Iron covers land management issues on Juna Downs and Hamersley pastoral stations, which border the eastern and western edges of Karijini.

The document is significant as it recognises that management of surrounding lands needs to be integrated into the management practices for the park.

This will enhance the overall conservation, tourism and recreation values of the area while still providing for a variety of land uses, including mining.

It is particularly important in relation to issues that don't stop at the boundaries of the park or stations. These include fire management and feral predator and weed control.

Bonzer bollards too good to waste

GREAT ideas and inventions come from many areas in CALM.

by Tammie Reid

The latest innovation from Dwellingup is a jarrah bollard lathe, able to turn out finished products from wood that would otherwise be left to rot in the forest, or be poisoned as part of the silvicultural follow-up treatments after logging.

Dwellingup overseer Brian Smith explains:

"The idea grew out of Australian Workers' Union members' dissatisfaction with the practice of leaving behind small but sound jarrah trees after timber-harvesting operations," Brian said.

"In these operations, competing trees are removed within a radius of three metres around selected crop trees, and are left behind with other forest-floor refuse, such as fallen branches and leaves. As part of the quality

improvement process, a team from Dwellingup comprising Ian Freeman, Bill Plenderleith, Mike Tagliaferri, John Chapman, Murray Love and Alf Allen, was formed to evaluate marketable options for waste material produced during jarrah silvicultural operations.

"We already knew how to use lathes to prepare the short jarrah logs for axemen associations to use in log chop competitions," said Brian.

"Our idea involved lengthening these machines and extending the protective cage to cater for longer logs."

The team got together with John and Simon Piavanini of Collie, who designed the log-chopping lathes, and made the modifications and improvements

necessary to produce a bollard-making prototype. The machine costs about \$12,000.

"At present we are still ironing out the wrinkles in the system, and setting up an efficient production line," said Brian.

The jarrah lengths chosen for bollard-making are 1.2 metres long and 20 to 30 centimetres in diameter.

After debarking and lathing, a metal band is tightened around the end of the log to prevent splitting; the bollard edge is also planed off and the ends are painted with wax as an additional deterrent against splitting.

"We're looking into the metal band system used for power poles, as the steel band fixing system we're using now is clumsy to use and slows us down," said Brian.

"Once these problems have been solved, our production rate should improve



Forest workman Ralph Staines watches as a jarrah length is transformed into a bollard. Photo by Penny Walsh

on the 110 bollards per day we can produce now."

Making bollards is a four-man operation, with another four-man crew out in the bush supplying the timber. The lathe runs off tractor power and, according to Brian, the going is

tough on the blades, which need to be sharpened once a week.

The Dwellingup team is also looking at ways to use the bark shavings. Currently they just attract magpies hunting for shredded bardi grubs.

One possibility is to use the shavings as rehabilitation material on sand dunes. "There's a lot of interest among the forest workers here at Dwellingup, so Alf Allen and I plan to run those who are interested through some bollard lathe-training

sessions," said Brian. "Our first order is from the Southern Forest Region for 500 bollards.

If you're interested in this operation or wish to place an order, please contact Steve Raper at CALM Dwellingup, (09) 538 1078.

Staff gym open and all geared up for fitness



CALM Dwellingup staff Loyd Wren, Darren Ball and John Chapman (rear) make use of their new gym. Photo by Linda Gilbert

THE Dwellingup Gymnasium has been opened officially by CALM Executive Director Dr Syd Shea.

The gymnasium was built by CALM employees using initiative, generosity and dedication, to provide themselves and their families with a facility to improve their fitness.

The gym shell is three unused truck bays in the CALM vehicle compound. The floor is a concrete slab, poured from leftovers from another job, padded with rubber conveyor belts donated by Alcoa and then finished off with old carpets donated from family rooms and offices. The walls and doors were put together using donated and recycled building materials.

Gym equipment has been pooled from a variety of sources. The infrequently used home gym equipment from many homes has been

brought together into a facility that provides a friendly, enjoyable place to exercise—and you don't smell out the living room.

Gymnasiums provide an opportunity, not only to pump weights and bulk up, but more importantly, to exercise the body and mind in a supportive environment.

The Dwellingup gym includes a table tennis table for those who want to test their reflexes against a colleague, space to do floor exercises, useful for back care, stretching and strengthening, as well as circuit training programs set up to alternate between general aerobic and specific strengthening exercises.

Aerobic exercises include skipping, speed ball, punching bags, cycling, rowing and jogging on a mini trampoline.

Strengthening exercises

include weight training, bench presses, lateral pull downs, leg curls and extensions, squats and lunges, to name only a few.

Programs have been prepared and demonstrated. They include 'introduction to gyms', 'safety and etiquette', 'gym for first timers', 'back care', 'warm-up and stretching', and 'circuit training'.

The facility, built by CALM employees, is the only one of its type in Dwellingup and has attracted interest from others in the town—including a thief. Unfortunately, some of the equipment 'on loan' from generous staff members was taken from the gym during a daring raid shortly after it was officially opened.

The stolen gear will be replaced, and the gym is now fitted with a security system that should discourage further thefts.

Landcare award for Albany Plantation Forest Co.

THE Albany company CALM is working with to plant 25 million trees has won the 1995 Landcare Australia award for Western Australian business.

Albany Plantation Forest Company of Australia Pty Ltd (APFL) was presented with the Ansett Landcare Business Award at the recent State Landcare conference in Perth.

As a State winner, APFL is now a finalist in the national awards, which will be announced in Canberra next year.

The awards were launched in 1991 by Landcare Australia Limited as part of its charter from the Federal Government to promote a landcare ethic across Australia.

The 1995 awards were judged in 10 categories, recognising the landcare efforts of primary produc-

ers, individuals, landcare groups, schools, businesses, local government, researchers and the media.

APFL was formed in 1993 as a joint venture between three of Japan's biggest companies - New Oji Paper Company, Itochu Corporation and Senshukai Company - to establish up to 20,000 hectares of bluegum plantations in the Albany region at a cost of \$60 million.

The company has appointed CALM as project manager for a term of 25 years to plant trees as commercial crops on private land in an innovative form of sharefarming that allows landowners to share the harvest profits, without changing the ownership of the land.

The trees will be harvested about 10 years after planting and the wood fibre

used to produce high quality paper.

Both APFL and CALM promote integrated tree plantations to complement rather than compete with agriculture.

CALM's unit, South Coast Sharefarms, has planted nearly 5000 hectares of bluegums for APFL since 1993, in what will be a 10 year establishment phase.

Another two plantation projects in the Collie region are being managed by CALM's Wellington Sharefarms.

APFL's Director and General Manager, Mr Tom Okada, said the company had deliberately chosen to work with landowners to plant trees in such a way to maximise their environmental benefits.

"The landcare benefits of planting trees have been

well established," Mr Okada said.

"They can prevent water tables from rising and the resulting problems of salinity and waterlogging. Trees also help control erosion, intercept fertiliser runoff which would otherwise pollute waterways and create shade and shelter for existing crops and stock.

"Of course, planting enough trees to achieve these results is an expensive proposition for individual farmers, but if the trees are a commercial crop, landcare comes with a profit."

This year for the first time, APFL introduced a scheme to plant non-commercial tree species as well as bluegums to meet different demands for tree planting. Non-commercial plantings are designed for:

- ♦ planting on saline areas where nothing else will grow;
- ♦ lowering the water table and reducing waterlogging;
- ♦ planting on non-productive ground;
- ♦ protecting creek lines and remnant vegetation;
- ♦ improving aesthetics by creating amenity strips around a plantation.

"The cost of non-commercial plantings are met by APFL and the trees remain the landowners' property," Mr Okada said.

"About 90 hectares were planted on eight properties this winter and we plan to extend the scheme next year.

"Environmental protection is a key concern for our company and I am delighted that APFL has received this recognition from Landcare Australia."



APFL's Director and General Manager Tom Okada with the 1995 Landcare Australia Award.

Australian design award for CALM solar kiln

A solar timber-drying kiln developed by the Department of Conservation and Land Management has been awarded the nation's highest design accolade - an Australian Design Award.

The kiln, designed and developed by CALM at the Wood Utilisation Research Centre (WURC) in Harvey, is a breakthrough in low-cost, energy efficient methods of downstream processing and adding value to native hardwoods and plantation timbers.

The award judges said: "This innovative, patented design provides energy efficient, environmentally-sensitive, wood-drying kilns at low capital cost."

They were particularly impressed by the innovative use of relatively low-cost technology, its modular form, simplicity of construction and the significant cost savings in the use of solar energy.

An Australian Design Mark also was awarded to CALM's Valwood process which uses short lengths of timber to produce laminated, solid wood for high value products such as fur-

niture and benchtops.

CALM Executive Director Syd Shea said the kilns could form the basis of a much expanded fine wood and furniture industry capable of employing 25,000 people throughout the South West.

WA was one of the few places in the world where large quantities of highly ornamental timber could be supplied on a sustainable basis, he said.

The development of the solar kilns stemmed from a \$4.6 million, four-year research project carried out at CALM's research centre in Harvey. The project investigated ways of processing small diameter hardwood, particularly jarrah.

The kilns resemble a large greenhouse and work on much the same principle as a sauna, with inside temperatures reaching 50°C and relative humidities around 90 per cent.

They are made of two layers of plastic supported by a metal frame. The layers are kept apart by air pressure and include an innovative patented blan-

ket system which is placed over the timber to improve drying.

The temperatures and conditions are constantly monitored and adjusted by computers. Auxiliary gas burners can be turned on automatically to help maintain internal temperatures overnight or when the outside temperature falls.

"Because the kilns use solar energy, power consumption is greatly reduced. Studies have shown the power usage can be 30 to 50 per cent less than conventional timber driers. The WURC staff are to be congratulated on their research and development achievements," Dr Shea said.

He said the hardwood resource was changing from mature logs to small regrowth and plantation logs. This meant new technologies in handling, milling, drying and processing had to be developed.

"The solar kilns also mean it now is economic to use short length and lower grade sawlogs. Previously these low grade

logs would have ended up as firewood," he said.

Dr Shea said the Timber Strategy released in 1987 was a landmark in that for the first time the WA timber industry had an incentive to add value to the hardwood resource.

"Before 1987, less than 10 per cent of the sawn jarrah timber was seasoned. Today, that level is more than 50 per cent with some individual sawmills reaching more than 80 per cent," he said.

"The research CALM has carried out into jarrah now is being applied to other species such as karri and marri and to the Goldfields hardwoods which are among the finest woods in the world for musical instruments."

Dr Shea said CALM recently had awarded a licence to the Victorian engineering company, GCD International Pty Ltd to manufacture, market and install the kilns. The licence had been awarded after tenders had been called.

More than 20 of the solar kilns are now in operation throughout Australia.



Marketing Manager of Forest Resources, Terry Jones, accepts the Australian Design Award from Dana Read, the WA design consultant for Australian Design Services, a division of Standards Australia. Photo by Bryan Smeath



David Burton and Alan Byrne go to work 'resuscitating' Kevin Crane. Photo by Stephanie Crawford

CALM divers pass rescue test

SIXTEEN CALM divers have completed a challenging Rescue Diver Course over the past twelve months.

The most recent course, conducted at Hillarys, was undertaken by Fran Stanley from the Pilbara Region, Kevin Crane from Swan Marine Operations, Warwick Roe and Brad Daw, from the Wildlife Branch, Como.

The first day of the course concentrated on Advanced and Oxygen Resuscitation, with qualifications being issued by the Royal Lifesaving Society of Australia. The remaining four days covered the internationally accredited PADI Rescue Diver Program.

On Days two and three, we were greeted with almost perfect conditions: the weather a pleasant 21°, blue skies, east-south-east 10 to 15-knot winds and a

by Alan Byrne

water temperature of 17°C. To the uninitiated these conditions might seem like a great way to spend a day, but immersed in 17°C water for four to five hours can test the toughest of divers.

We were greeted on Day four by howling southerly winds of 20 to 23 knots, which altered our earlier, somewhat calm inshore diving conditions to very unsuitable rough seas. After some contingency planning, an alternative dive location was found protecting us from both strong winds and a low water temperature.

On the final day, we returned to the cold waters of Hillarys Boat Harbour to complete inwater assessments, including a missing diver scenario.

Putting the cold water

temperature aside, the Rescue Diver Course is one of the most important and challenging diving courses in which a diver can participate.

It is the first course in which the diver's skills are extended to look out for fellow divers in what is known as the 'buddy' system.

The rescue diver course teaches the diver how to safely and correctly deal with a range of diving emergencies from tired or panicking divers, unconscious on the ocean floor, to surface divers, in water resuscitation techniques and co-ordination of full rescue scenarios.

Another important aspect of the course is that it provides the diver with 'response availability.' In other words, alternative courses of action available to the diver to deal with situations of panic

and anxiety.

Most diving research literature has indicated that panic is the overwhelming cause of the majority of injuries and fatalities in diving.

Emphasis during the course was on the observable signs depicting an increase in apprehension and the development to a full panic reaction. Once a panic situation begins during diving, the individual feels a loss of control. It is the responsibility of the rescue diver not only to recognise the signs of anxiety and panic, but to take control and respond to the unforeseen circumstances.

The Rescue Diver Course is mandatory for all divers who aspire to become CALM Diver Supervisors, as outlined in the 'Safe Work in CALM Scientific Diving Code, August 1994.'

Put this in your glovebox

CALM has released a new booklet, *Exploring Arid Lands*, to meet a rapidly increasing demand from national park rangers, regional and interpretation staff, and tourists.

The booklet continues the educational series that includes *Exploring Granite Rocks* and *Exploring Coastal Wetlands*, and is aimed at tourists and high school students interested in our deserts.

It is an inexpensive, conveniently sized publication that can be slipped easily into the glove box when one is travelling across the Nullarbor Plain, along the Gunbarrel Highway or down the Canning Stock Route.

It also provides biological information for people living and working in remote settlements and mining leases.

Exploring Arid Lands was prepared by Judith Harvey, following a two-year stint as CALM's information officer for the Pilbara Region.

The delightful illustrations were created by Lorita Schmitz who is based at Karakamia Wildlife Sanctuary at Chidlow.

The major desert types

are described and form a background for selected descriptions of how a variety of plants and animals (including insects) adapt to hot dry days, cold nights and infrequent storms.

There is a section on 'when the wet comes' which is relevant at present, and some discussion on the

impact of people on the arid environments.

Copies, at \$2.50 each, can be ordered from CALM Stores Branch, with sales credited to Account Code 948 481 41. For further information, please contact Judith Harvey at Woodvale on (09) 405 5116, or Gil Field on (09) 334 0580.

Exploring Arid Lands



WANTED: Back Issues of CALM News

Lisa Wright, Librarian at Woodvale Research Centre, is missing the following issues of CALM News and would like to hear from anyone who still has copies of the following early issues: 1(3), 1(4), 1(6), 1(7), 1(8), 2(11), 2(19) and 3(30).

If you can help complete the set in Departmental Archives, please call Lisa at Woodvale on (09) 405 5132.

Counting the Karri

by Robert Troeth

SOME would say that it doesn't get much better than feeling a drop of fresh rain rolling down the back of your neck as you plant karri seedling number 2000 for the day.

To others this might seem a bit over the top, but it doesn't fall far short of the kind of experience that was enjoyed by crews who took part in the Southern Forest Region karri regeneration program.

The overall planting statistics for the region made the experience even more satisfying.

This year, Manjimup, Pemberton and Walpole districts planted approximately four million karri seedlings over a total area of 1896 hectares.

In the Walpole District, a crew of 10 planters consistently achieved its 20,000 per day target.

Each worker planted 2000 seedlings a day using pottiputkis—tube-shaped planters which dig holes and then drop seedlings into them. All that is required is a light tamping of the foot on the soil around the seedling, and then it is on to the next hole—and not an aching back in sight.

In 1995, the Walpole crew planted three times more seedlings than usual. This was mainly because of the large amount of infill

planting required in areas where natural regeneration had not met expectations after a series of hot summers and dry winters, or where natural seed had a low viability.

Planting involved the use of many local resources. For example, West Manjimup Propagation Centre supplied the seedlings, and about 45 local people were employed to do the planting region wide for three months.

In 25 years time, many of the seedlings planted in 1995 will be ready for their first thinning and sawlogs will start to become available.

It is no wonder the crews look forward to the planting season each year.



Lanny Beleakley holds a pottiputki tree planter at a Karri regeneration site near Walpole. Photo by Robert Troeth



A dalgyte, similar to those which have been frequenting the Calvert Range. Photo by Babs & Bert Wells

Dalgyte surprise for crew at Calvert Range

WOODVALE Science and Information staff made a chance discovery while on a trip to the Calvert Range—they found convincing evidence of the rare and endangered dalgyte (or bilby) more commonly known as the 'rabbit-eared bandicoot.'

Principal research scientist Jack Kinnear said the discovery came about while checking results of the ground and aerial baiting of foxes and feral cats carried out last year.

"It was pleasing to find that our baiting had been highly successful; sightings were nil and other signs such as paw prints were few," Jack said.

"We attributed this to an

increased frequency of baiting, up from two to four baitings per year.

"The baiting is part of a project, funded by CRA Exploration Pty Ltd, that aims to promote a population recovery of the western desert black-flanked rock-wallabies.

"The short-term objective is to restore the population to a higher density, and then translocate a sufficient number of the rock-wallabies to a more accessible island safe haven near Karratha, where the population can be managed more cost-effectively.

"In the long-term, this population would serve as a source for their re-introduction to former desert

sites, should biological control of the fox be achieved."

The party that took part in the survey included senior technical officers Phil 'Red-line' Fuller and Mike Onus, with Aboriginal guide Rod Samson from the Jigalong Community.

"As for the dalgyte/bilby/rabbit-eared bandicoot discovery, we sighted fresh tracks while looking for feral predator signs, and later, Mike Onus discovered some active burrows," Jack said.

"It's possible that the dalgytes have increased as a result of our baitings, and it would be a nice bonus for the project if they continued to increase along with the rock-wallabies.

"We plan to extend our aerial baiting to provide more predator control beyond their area.

"All in all, it was a successful trip with few hassles. Even some formidable sand dunes were crossed with normal tyre pressures."

The Calvert Range lies east of the Durba Hills on the Canning Stock Route and, it seems, the range is attracting more remote-area tours every year. A conspicuous population of rock-wallabies would further enhance the appeal of this rocky desert oasis.

"We are quietly hopeful that we will make a significant contribution to achieving this goal," Jack said.

Dual-purpose plantation at Popanyinning

by Greg Durell

The establishment of a eucalypt plantation near Popanyinning, 30 km north of Narrogin, is expected to solve two problems simultaneously—reduce waterlogging that threatens a small population of the rare matchstick banksia (*Banksia menziesii*), and provide food for koalas.

The plantation, jointly funded through the Matchstick Banksia Recovery Plan by the Australian Nature Conservation Agency (ANCA), the Graham family, and CALM, is on the 220-hectare Lazeaway Holiday Farm and Wildlife Park. Owners Bev and Gary Graham are keen to help protect a population of the declared rare matchstick banksia discovered on their property in 1990.

The matchstick banksia population occurs within a small remnant of natural vegetation on the farm. This population is the largest of eleven known populations occurring on deep yellow sands from near Popanyinning to east of Quairading.

Only 500 matchstick

banksia plants are presently known to exist in the wild. All the populations remain under threat from damage unless some action is taken to protect them from rabbits, excess ground water, wind erosion, and human impact.

At Lazeaway, one of the most obvious problems causing the decline in the health of the matchstick banksia is the excessive ground water, causing water logging.

The remnant bushland containing the plant population is at the lowest point in the landscape.

Because the surrounding land is cleared, and there are no trees or woody vegetation to intercept winter rains, the water soaks into the ground and quickly moves downhill through the soils that are well drained and reasonably dry.

Over the past five years, the excess underground water has been syphoned from a soak into the nearby

Hotham River.

This has been a successful way of managing the water when it reaches ground level. However, the syphon requires frequent checking to ensure it is still functioning.

It is expected that the eucalypt plantation will intercept this underground water before it has a chance to reach the banksia population.

As the trees become established and grow bigger, it is hoped they will take up most of the water rather than it being wastefully syphoned away.

About 2000 trees of six different species of eucalypt have been planted on the site. These are manna gum, (*Eucalyptus viminalis*) Sydney blue gum, (*E. saligna*) forest red gum, (*E. tereticornis*) flooded gum, (*E. rudis*) swamp mahogany, (*E. robusta*) and river gum (*E. camaldulensis*)

Gary said that he and Bev were thrilled to have had the opportunity to grow trees that would benefit their farm and also help protect the banksias.



The planting team: Rear left to right, Andrew Doig (partly hidden) Greg Durell and Martin Clarke. Front left to right, Gary Graham, Trevor Graham, Howard Robinson, Bev Graham, Judy Williams, and Teena Gould. Photo by Brian Macmahon

They are hoping to establish a colony of koalas in their wildlife park, but before they can be granted a permit to do so, they must

be able to ensure they have an adequate supply of gum leaves to feed the animals. "We're hoping to harvest sufficient leaf material

from the plantation to support two koalas in two or three years' time," Gary said.

"Each animal eats up to

one kilogram of leaves a day, but considerably more leaves need to be harvested daily because koalas can be fussy eaters."

CALM builds a better bibbulmun

Story and photos by Penny Walsh



Environment Minister Peter Foss and John Day MLA, Member for Darling Range, award certificates of appreciation at the opening of stage one.

IN 1993, the Building a Better Bibbulmun Track Project was launched to upgrade, realign and extend the Bibbulmun Track. In August 1995, the first section—65km from Kalamunda to Brookton Highway—was officially opened by Environment Minister Peter Foss.

He said the upgrade was more than just cosmetic, and by the end of 1997 more than \$1 million would have been injected into the extended 840 km track that will stretch from the outskirts of Perth down to Albany.

"On the way, it will pass through some of the South West's most beautiful natural attractions, and the variety of terrain will provide a dramatically improved wilderness experience."

A great deal of this improvement will result from realignment work carried out by CALM staff along the way. The

'new' Bibbulmun will retain less than 20 per cent of the existing track.

There will also be new campsites, sleeping shelters, toilets, picnic tables, barbecues, route markers and other facilities installed to make it easier for more people to use the track.

During his speech at the opening, Mr Foss paid tribute to the initiative of CALM and its network of supporters, including government departments and corporate sponsors, who are committed to producing a world-class walking track.

"The wide range of parties involved in the project is proof that initiatives like the Building a Better Bibbulmun Track Project can really serve to unify communities and departments."

He said updating the track reinforced the trend towards nature-based tourism and the responsible management of natural resources to

facilitate recreation as well as conservation.

Some of the issues that were considered during preparation and construction phases of the project included erosion and dieback, access to towns and facilities, the track surface, water supply and camping areas, and alternative land uses such as timber production and bauxite mining.

"The 'new' Bibbulmun Track will meet the needs of users now and far into the future. Those to benefit will not just be walkers, but all those who have worked together to produce the first part of what is going to be one of the world's great long distance wilderness walks," Mr Foss said.

The northern section of the track, through to the Blackwood River, should be completed by the end of 1996. The southern (final) section is planned for completion by the end of 1997.

New map for walkers

A map specially designed for Bibbulmun walkers has been produced by CALM to accompany the first section of 'new' track, and it was launched when Environment Minister Peter Foss declared the first stage open.

The map represents a departure from CALM's usual format, with track notes, background information and profiles specially included for the benefit of walkers.

The new design presented an interesting challenge for Information Management Branch staff Ray Lawrie, Mark Laming and Team Manager Roy Fieldgate.

Ray was the cartographer in charge and he said recently that while most of the data for the map was similar to that of CALM's standard 1:50,000 series,

the new Bibbulmun map required different treatment.

"This time the information was all weighted towards the track, making that the focus and the main feature. Elements of the design were borrowed from maps of the Appalachian Trail in America, while others were a personal CALM mapping touch."

A lot of legwork was necessary before the map could hit the stands, however, including Project Coordinator Jesse Brampton and Phil Poole from IMB lugging a GPS unit 20 km by foot and 45 km by motorbike along the length of track.

Warwick Boardman then had to write software that would allow the GPS information to be processed and added to the graphic data base.

"The final product came

straight off the computer and went directly to the printer. There was no manual cartography work at all," Ray said.

Initial feedback has been very positive, and signs are that the first print run of 2,500 will quickly sell out.

"Given that it was the first of its kind, I think the response to this map has been really good, but there are certainly refinements we can make. I have already got two or three pages of amendments to make to the reprint of this first one."

By the end of the "Building a Better Bibbulmun Project" there could be as many as eight maps covering different sections of the track. Ray said that the design process would be getting just about perfect around the time the last one was produced!



Cartographers Ray Lawrie and Mark Laming at the release of the new CALM map.



Mundaring's Max Bending, Pat Foley and Jamie Ridley at the Waalegh campsite.

Mundaring makes a start

CALM staff at Mundaring spent more than six months working on track and shelter construction for the first section of the new Bibbulmun Track.

In the early stage of the project, when crews from Wooroloo and Bandyup Prisons were involved, Nibs Morganti was the key District representative. However, once CALM's Mundaring forest workers took over the job, Nibs was joined by tourism & recreation officers Jamie Ridley and Dennis McDonald, Overseer Max Bending and Pat Foley.

The first step was to mark the new alignment, which Jesse Brampton and Jamie Ridley did. Then the crews followed behind using a small Kubota tractor to establish the path.

"The guys were respon-

sible for slashing a trail, putting in steps and erosion control barriers, erecting signposts and installing tent pads, toilet facilities and the shelters that were pre-fabricated by Wooroloo and Bandyup prisoners," said Jamie.

"While most of them already had plenty of experience in manual walk trail construction, none of them had worked with a Kubota tractor before. I think they were pretty impressed with its performance," he said.

The Kubota was something of an unknown quantity—it had seldom been used by CALM before. However, it proved to be a real bonus, saving the crew lots of time and energy.

"The job took more than six months and no work was carried out in wet soil conditions, to ensure there

was no spread of Dieback," said Jamie.

"All in all, it has been really interesting and a rewarding exercise to be involved in. And I have been absolutely staggered by the response to this first stage. There have been about 10 enquiry calls coming in every day about the 'new Bibbulmun'."

Mundaring District's role in the project isn't over yet. It still has a section of track to establish through Jarrahdale, and two campsites to install between Brookton and Albany Highways. CALM staff in Collie and Albany are also working on their own sections of the track.

"It's a bit like a relay. Most districts will have between 60 and 100 km of track to establish. It's a real joint effort," said Jamie.