

CALM NEWS

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DEPARTMENT OF CONSERVATION
AND LAND MANAGEMENT
WESTERN AUSTRALIA

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DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

JANUARY—FEBRUARY 1999



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CALM-BP form tree partnership

by Mitzi Vance



Environment Minister Cheryl Edwardes is flanked by CALM Executive Director Dr Syd Shea and BP Kwinana Refinery Executive Director Peter West at the signing of the partnership between BP and CALM for a tree-planting program focusing on carbon sequestration.

CALM has entered into a history-making partnership with British Petroleum (BP) to explore the feasibility and management of tree plantations for carbon sequestration as well as landcare and biodiversity.

The partnership will see the development of the first tree planting program in Australia to offset greenhouse gas emissions.

Environment Minister Cheryl Edwardes announced the partnership in late December at a signing ceremony between BP Kwinana Refinery Executive Director Peter West and CALM Executive Director Dr Syd Shea.

Pilot study

The agreement marks the beginning of the first pilot study in Australia to examine the potential of tree plantations as carbon sinks. The plantations will be established on farmlands in partnerships with farmers.

Minister Edwardes said that since the Kyoto Protocol defined strict limits to the total quantity of greenhouse gas emissions from each country, significant international interest had developed in the establishment of tree crops to create carbon sinks to offset emissions.

"The WA Government's 'Tree Crops on Farms' program has been attracting attention from local and international companies alike," she said.

"The program is uniquely placed to implement rapid broadscale tree-planting programs capable of significant carbon sequestration."

International interest

BP's International Director of Environmental Affairs Dr Bernard Bulkin recently visited the State to view this potential first hand.

Mrs Edwardes said it was recognised 12 years ago, when the 'Tree Crops on Farms' program was initiated, that the program would contribute to offsetting greenhouse gas emissions as well as reversing land degradation.

"WA has a large land base, a major tree-planting and land rehabilitation program already under way as well as the technical and economic skills required to quantify growth and carbon sequestration rates," she said.

"More than 120,000 hectares of tree crops have been established by CALM and the private sector in the last 12 years.

Large carbon sink capacity

"These tree crops have the capacity to sequester a carbon sink of more than 200 million tonnes over the next 30 to 40 years—this is equivalent to 800 million tonnes of carbon dioxide emissions.

"CALM's 'Tree Crops on Farms' project was also designed to capitalise on the increasing domestic and international demand for wood fibre, which means the cost of sequestering carbon will be offset by the return from timber products.

"More than that, however, carbon sequestration will provide a multitude of environmental benefits for Western Australia.

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WA ahead with new joint venture

A WESTERN Australian company that successfully launched emu oil to the world's cosmetics and therapeutics industry had embarked on a new venture that will put the State to the fore as the leading supplier of another native oil—sandalwood.

CALM and Albany-based Mt Romance Australia Pty Ltd have signed a contract for the supply of up to 1000 tonnes of sandalwood a year. The value of the contract is conservatively valued at

\$40 million over 10 years.

Environment Minister Cheryl Edwardes announced details of the contract at the official opening, by Deputy Premier Hendy Cowan, of Mt Romance's new sandalwood oil factory in Albany early in March.

Mr Cowan said the venture would have major long-term benefits not only for the State's sandalwood industry and natural environment, but for regional economies such as those in Albany.

Mt Romance was awarded

the contract following a nation-wide call for expressions of interest in the production and marketing of sandalwood oil.

Mrs Edwardes said the company was selected from a very competitive range of proposals. The selection criteria addressed several points including the location of processing facilities, competitive pricing, technical and marketing expertise, and the quantity of sandalwood to be processed.

"Mt Romance has an

active research and development program that is continually identifying and creating new sandalwood-based products," she said.

"Although the main focus is on the cosmetic and therapeutic uses of sandalwood, the company's long-term aim is to become a major supplier of sandalwood oil to the international perfume and pharmaceutical industries."

The contract also opens the way for the development of a stronger domestic market for sandalwood oil

and products, not only in Western Australia, but in Australia as a whole.

Essentially this will be a 'new' market for sandalwood products which were ironically one of the first, if not the first, export of the Colony of Western Australia.

The contract represents the realisation of a policy of value adding to WA sandalwood in this State wherever possible. It also would complement our traditional markets in Asia.

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800 native animals returned 'home'

MORE than 800 native animals have been returned home to their former ranges because of fox control under the wildlife recovery program *Western Shield*.

Since the project began in 1996, native animal numbers have increased dramatically in areas of the State's South-West where successful fox control has been achieved.

Scientific research and monitoring by CALM staff of these areas where fox numbers have been

by Mitzi Vance

reduced by baiting, has shown a significant increase in native animal numbers.

Trap success rates for medium-sized mammals in Kingston block, near Manjimup, has shown numbers have increased more than seven-fold since baiting began in 1992.

Only nine per cent of traps in August 1992 yielded any native

mammals, while almost 77 per cent of traps in August 1998 held native species.

Similarly in Batalling block, near Collie, monitoring has shown an increase in woylie capture rates from 0.4 per cent (0.4 per 100 traps) in December 1990, just before fox baiting, to nearly 70 per cent in October 1998.

Monitoring at Julimar Conservation Park, near Mundaring, has shown that chuditch numbers have increased nearly five-fold since

their reintroduction in 1992. The quenda population at Dongolocking Nature Reserve in the Wheatbelt region has also had a ten-fold increase since quenda were first reintroduced in 1994.

Environment Minister Cheryl Edwardes said that other endangered native animals such as the numbat, noisy scrub-bird and ring-tailed possum were also beginning to thrive after being reintroduced in fox-baited conservation areas.

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I always look forward each year to the summaries of what happened last year. Apart from the fact that it is easy to forget the progress that has been made in the current environment, where we are receiving so much adverse criticism from some groups, it is good to be reminded about what has been achieved by everybody in the Department.

In this edition of CALM NEWS there are two very significant announcements about commercial partnerships we have made, which are of major significance to the Department.

The announcement of the joint venture with BP is a first in Australia, and is the only genuine carbon sequestration project involving the establishment of trees which currently exists in Australia.

Many people within CALM have contributed to us being in this position and I am also pleased to acknowledge the tremendous support we have had from BP staff in getting this project under way.

The announcement of the successful joint venture with Mt Romance Australia Pty Ltd is similarly very important for the Department and the State. As a consequence of Mt Romance winning the contract for sandalwood, the whole focus of this company has moved towards the development of an industry based on local sandalwood.

While our export of sandalwood to Asia will continue to be important I have always been keen to see this incredible resource have its value maximised in Western Australia.

Ironically one of the criticisms that CALM has received over the last several months has in part been related to our philosophy that we should endeavour to promote nature-based industries, both because of their value to the economy of Australia, and because we believe that we will not be able to solve our significant environmental problems by Government grants alone.

We do have major environmental problems, particularly as a consequence of clearing land for agriculture, and unless we can make the solution of these environmental problems profitable we will not succeed. There is simply not enough taxpayers' funds to provide the resources necessary to establish the amount of perennial vegetation required to stabilise the water balance in the agricultural region.

Both the carbon sequestration project and the joint venture with Mt Romance are important because both of them have the potential to provide the funds necessary to establish tree crops and trees for conservation on farmland. While the Mt Romance sandalwood initially will be supplied from natural stands we are confident that we can now establish and grow sandalwood and its associated host species on farmland.

If Mt Romance is successful, and they have already developed 30 new products based on sandalwood, there will be an expanding market for the sandalwood we are growing on farmland. Hopefully, the BP project is the beginning of a market for carbon which could be worth \$20 billion.

As important as these projects are to the general economy and to employment, to me their significance and related projects (for example, we are hopeful that we will be able to secure a laminated veneer lumber plant based on our maritime pine resource) is that they will enable us to prevent the further destruction of biodiversity because of creeping salination and, hopefully, provide us with the funds to restore native animals to the level of abundance that existed before the fox was introduced.

It is relatively easy to sit back and document what's going wrong with our environment and bemoan the lack of funds to do something about it. It is obviously important that we do alert the community to the problems that we face in managing our unique biota, but I believe it would be a cop-out if that's all we did. A vital part of our conservation strategy must be to create the environment for the private sector to undertake activities that are profitable and which also restore the environment.

Dr Syd Shea, Executive Director

CALM and universities join forces

THE growing number of visitors to CALM-managed places can impact on the natural environment, visitor experiences, and even local economies.

To address these impacts, Director of Parks, Recreation, Planning and Tourism Jim Sharp recently formed an innovative partnership between CALM and WA's universities—the Nature-based Tourism Research Reference Group.

The Reference Group asks field staff to identify issues, then co-ordinates student research, often under the supervision of field staff, to help CALM improve and streamline its Recreation and Tourism Program.

CALM representatives are: Park Policy & Tourism's program coordinator Wayne Schmidt and research scientist Luisa Liddicoat; CALM-Science Woodvale Research Centre group manager Keith Morris; and the writer, (Wheatbelt Region program leader for recreation, tourism and planning).

by Daryl Moncrieff

University representatives are: Dr Sue Moore and Dr David Newsome from Murdoch University's Department of Environmental Science, and Associate Professor Ross Dowling from Edith Cowan University's School of Marketing and Tourism, who is the Reference Group's chairperson. Other academic experts will be called as necessary.

In putting the group together, Jim Sharp acknowledged that CALM had already benefited enormously from research carried out by the major tertiary institutions in Western Australia.

"From a CALM perspective, university research projects can generate useful information for planning and management purposes, as well as focus on issues that might not otherwise be addressed," Jim said.

"The universities benefit too, as students and faculties are afforded the



Nature-based Tourism Research Reference Group members, Daryl Moncrieff, Luisa Liddicoat and Ross Dowling photographed at a recent Recreation and Tourism Program Workshop. Photo by Wayne Schmidt.

opportunity to work on 'real-world' projects—and gain an insight into the Department's operations."

Ross Dowling is impressed with the level of response from CALM staff in identifying potential research topics.

"So far we've had

almost 40 responses, varying from wildlife-based projects to social research and marketing.

"This places us in an excellent position to involve outside expertise."

The projects will also appear on CALM's NatureBase web page, so individuals can access

them. In this way they, as well as CALM staff, will be kept up to date on the progress of the projects.

Anyone interested in knowing more about the Reference Group or the projects may contact Luisa Liddicoat at Como on (08) 9334 0595.

CALM-BP form new partnership

(from page 1)

"Apart from the beneficial effect of reducing the concentration of carbon dioxide in the atmosphere, tree planting to sequester carbon will make a major contribution toward reversing land degradation.

"In particular it will significantly help in

restoring biodiversity where native species are planted, and reversing the salinisation of the South-West's waterways—a key part of the State's Salinity Action Plan.

"It will also generate significant employment opportunities in regional WA."

WA ahead in new joint venture

(from page 1)

CALM Executive Director Dr Syd Shea welcomed the announcement and said the contract would provide an additional incentive for farmers to incorporate sandalwood into their tree crops programs.

"CALM has developed new techniques which make it possible to grow sandalwood as a tree crop," Dr Shea said.

It is now one of the major supplementary species CALM is offering farmers who establish

maritime pines under the State Salinity Action Plan.

"Apart from its economic value, sandalwood planting contributes to the restoring of the biodiversity of the Wheatbelt because it occurred there naturally before clearing for agriculture."

It is expected that a further 50 hectares of sandalwood will be established this year on cleared farm land as part of CALM's maritime pines project.

Remembering Remembrance Day

by Greg Mair

WHO said life in Walpole was dull? Each year, the eleventh day of the eleventh month is intended to commemorate a solemn occasion—Remembrance Day, when the men and women who were killed in World Wars I and II, claim our thoughts. This time, however, it also produced a set of events that will also be remembered by CALM Walpole District staff for many years to come.

In the course of that one day, half the District staff were 70 kilometres west of the office managing a Temporary Control Area (TCA) and dealing with forest protestors.

Meanwhile, senior operations officer George Doust, who was having a brief respite from TCA duties, received advice of a fire that was deliberately lit 70 kilometres east of the office. This resulted in a wildfire of about 2,000 hectares, requiring help from farmers, bush fire brigades, CALM Albany, Manjimup and Pemberton districts' fire-fighting staff—and two bulldozers to extinguish.

Part way through the fire suppression effort, a heavily pregnant and obviously distressed CALM wife presented at

the office, in search of her husband, who happened to be away suppressing a wildfire.

In the meantime, District nature conservation officer (NCO) Freebury, was in the process of conducting Walpole District's first translocation of woylies from Perup to the Mount Lindesay area, under the Western Shield Project.

It may be a small town, but life is never dull in the 'Pole'.

Note: Congratulations to Wayne and Carolyn Aggis, who survived Remembrance Day to welcome their daughter Paige, a sister for Caitlin and Bryce.

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800 native animals returned 'home'

(from page 1)

"Already the woylie, quenda and tamar wallaby have been removed from the State's Threatened Fauna List as a result of successful conservation management under Western Shield," Mrs Edwardes said.

Mrs Edwardes said the main weapon in the fight against foxes and cats was the use in dried meat baits of the naturally occurring poison 1080, found in native plants called gas-

trolobiums or 'poison peas'.

"Though the poison baits are lethal to feral predators such as domestic dogs and cats, they are harmless to native animals, which have evolved with these plants," she said.

"Aerial baiting programs, guided by geographical positioning systems, are used to distribute the 1080 dried meat baits over 3.5 million

hectares of conservation lands throughout the State.

"Aerial baiting is conducted four times a year, with one program currently under way for March and April. This is supplemented by ground baiting of smaller reserves in the Wheatbelt region."

CALM Executive Director Dr Syd Shea said much of Western Shield's success to date had been due to the co-

operation and support of the community, and most importantly the hard work and dedication of CALM's Nature Conservation staff.

"The commitment and enthusiasm of CALM staff from the districts and regions, and CALM-Science and Wildlife Branch has been a keen factor.

"Similarly, many private landowners and Land Conservation District

Committees have helped with fox-baiting by laying baits on their own land, particularly where it is adjacent to conservation reserves.

"The support and generous sponsorship of Alcoa Australia, Cable Sands Pty Ltd and Westralian Sands for the Operation Foxglove, Coastal Storm and New Dawning components of the program, should also be acknowledged.

LETTERS . . . LETTERS

High praise

In September 1998, I visited your State for the first time when I was taking part in the Orienteering Championships.

I loved what I saw and will be returning at some stage in the future.

A West Australian gave me a brochure and I am taking the opportunity to subscribe to your magazine (LANDSCOPE). I

look forward to reading it. As an Environmental Studies/Biology teacher, I am pleased to have access to this type of information. I have also visited your website and it has given me some ideas for my classes next semester.

Thanking you in anticipation.

Yours truly,
Sue Hart,
Ballarat West.

CALM collaborates with volunteer fire brigades

CALM's fire management operations have been further strengthened this fire season with the introduction of several initiatives in collaboration with other fire agencies and volunteer bush fire brigades.

The moves include:

- Further upgrading of the Department's fire spotter fleet with the introduction of two new Champion Scout aircraft;
- Providing a CALM heavy-duty appliance to the South Kwinana Volunteer Bush Fire Brigade;
- Continuing Operation Firebird—the collaborative aerial fire-fighting program in the metropolitan and Hills area; and
- A strategic plan for managing bushfires in Perth's regional parks and other bushland areas.

The two Champion Scouts bring to four the number of new planes CALMfire has bought in the past two years.

The Scouts are part of an upgrading program to replace the ageing Piper Super Cubs that have given outstanding service since aerial fire surveillance was introduced in the early 1970s.

The American-made Scouts can maintain constant surveillance for up to eight hours and have proved ideal replacement for the Cubs. They are faster, have longer endurance and are more comfortable.

The new planes—named

Woylie and Bilby—join two other Scouts (Numbat and Chuditch) that were commissioned last year.

Environment Minister Cheryl Edwardes presented the keys to a new CALM heavy-duty pumper to Don Johnston, Captain of the South Kwinana Volunteer Bush Fire Brigade at a function in Perth recently.

The four-wheel drive appliance is being used by the brigade to combat wildfires that threaten bushland areas and urban developments south of the river.

CALMfire manager Rick Sneeuwjagt said the positioning of the unit with South Kwinana also meant that CALM's Perth District's fire fighting resources were better spread throughout the metropolitan area.

"Under the agreement with the Brigade, CALM will have access to the unit when necessary," Rick said.

"The move is part of CALM's strategy to work in closely with local volunteer brigades so that each of us have a better understanding of our operations. This will help make our fire response more effective and efficient."

The unit, worth \$130,000, was built by WA Fire Appliances of Narrogin to CALMfire's specifications.

Fire management plans for five regional parks within the metropolitan region are being prepared in consultation with the Fire and Emergency



Environment Minister Cheryl Edwardes hands over the keys to the CALM heavy-duty fire appliance to Don Johnston, captain of the South Kwinana Volunteer Bush Fire Brigade.

Services Authority, local government and relevant community groups. Ross Mead, from CALM's Swan Region, is responsible for co-ordinating the development of these plans that will ensure that bushfires in the parks will be suppressed in the most effective and environmentally sensitive manner.

The plans detail information on issues such as the risk of a bushfire starting, the values that would be threatened—including environmental values—the hazards such fires may present to fire fighters, and strategies for suppression.

They also include details on the availability of fire fighting resources and how long it

will take to respond to fire calls.

This information also will be dovetailed into the overall management plans CALM is preparing in conjunction with local communities for the regional parks.

CALMfire also has recently produced a booklet on fire safety procedures on the fire front.

The booklet has been distributed to all CALM personnel who are likely to be involved in fire control and prescribed burning activities.

Rick says the booklet provides the reference material for safety training programs for fire officers, crews and contractors.

Fighting fire at Woodvale

STARTLING lime green fire protection suits are de rigeur at the Woodvale research centre these days.

And its not unusual to see jets of water shooting off into the bush from various directions each morning. The reason? A fiercely contested fire training competition organised by administration officer, Rod Mell.

"The buildings at Woodvale are surrounded by bush, and every summer brings a real fire risk. We actually had a fire in 1994, and even though there was no property lost,

by Penny Walsh

it highlighted some gaps in our fire-protection measures," said Rod.

"This contest is designed to get more staff participating in fire drills and give them hands-on experience with firefighting equipment."

Twenty pairs get to test their skills with pack-sprays, a light duty pumper unit, hydrants, roof sprinklers and building perimeter sprinklers. The exercises are timed, and teams are penalised for using un-

safe or incorrect methods.

"We've been careful to make it a fair course for women as well as men. Its all about teamwork and technique," said Rod.

No doubt the WATSCU Warriors (John Blyth and Andrew Burbidge), who were leading the competition when this article was written, would agree.

But there's a long way to go, and Rod is expecting a strong challenge for the \$100 prize from some of the pairs still to compete.

"It will be interesting to see who comes out on top," he said.



Head of CALMScience's Bio-Conservation Group Keith Morris, and research assistant Joanne Varley team up to dazzle us with their mastery of fire-fighting equipment and techniques. Photo by Penny Walsh



Federal Forestry and Conservation Minister Wilson Tuckey hands over his cheque for Western Shield to CALM acting Executive Director Dr John Byrne. CALM's Director of Nature Conservation Keiran McNamara and executive assistant Sharon Eccleston look on.

Federal Minister supports Western Shield

WESTERN SHIELD—CALM's major nature conservation initiative that is bringing back 30 species of native animals from the brink of extinction—has captured the imagination of Federal Forestry and Conservation Minister, Wilson Tuckey.

Mr Tuckey recently made a small, but significant personal donation in presenting a cheque to CALM acting Executive Director John Byrne to draw public attention to CALM's work in the area of feral animal control to

reverse the decline in native fauna in WA.

Western Shield is the largest integrated broad-scale wildlife recovery operation in Australia. It now has an annual budget of \$1.5 million, funded by the WA Government and several commercial sponsorships from the private sector.

"I am advised that CALM has to partly fund feral animal control through sponsorship," Mr Tuckey said.

"Such feral animal control has resulted in spectacular increases in

indigenous fauna, both in reserves and harvested forest. The real cost of appropriate reserve maintenance is approximately \$20 per hectare. With one million hectares of reserves in WA, that costs \$20 million a year.

"I think it is time for the residents, who demand these reserves, to take an interest in how to provide this level of funding without further reducing government outlays on hospitals, schools and police.

"Western Shield has my total support in protecting

indigenous species in the South West.

"As I have stated publicly before, there is an urgent need to properly control feral animals and exotic weeds in forest reserve areas in this State."

Mr Tuckey said that with the Regional Forest Agreement process in WA coming to the point of signing, it was vital for reserve areas in the South West to have adequate resources made available to ensure that native forests were pristine and not over-run with feral cats and foxes.

1998 and all that

CALMNEWS reflects on some of the more memorable episodes in CALM life in the past year.

JANUARY

For many CALM fire crews, early January was a time to catch up on the festivities they missed while preoccupied with several big bush fires in the southern forest region. But the respite was short.

Within the first week, fires in Esperance, Canning Mills, Pinjarra and again in the Manjimup-Pemberton-Shannon-Mt Lindsay areas had crews on the go. And things didn't get any easier.

In Fitzgerald River National Park, a fire that started after lightning strikes had crews stretched as temperatures reached 47 degrees and humidity dropped to just 5 per cent. Strong southeasterlies whipped the flames across 30,000 hectares before the fire was controlled. A week later, Goldfields and Wheatbelt staff spent three days controlling a fire in the Boorabbin National Park near Southern Cross.

Summer bush fires are a regular part of the CALM calendar so it was timely that 145 CALM fire crews received National Medals for their dedicated service in protecting Western Australians from wild-fires. Five CALM staff—Chris Broadbent, Terry Court, John Evans, Ron Church and Ian Marshall—between them had provided 180 years of service.

Forest protesters turned their attention to the Hilliger forest block south of Nannup, while in Collie a lone protester perched on a tree platform at the 'King Jarrah'.

The month closed with the media reporting that the karri and jarrah forests would be driven into the sea off the coast of Albany within 100 years because of the Greenhouse effect! The report quoted a CSIRO paper which, incidentally, didn't even refer to WA's south west forests.

FEBRUARY

The knowledge of the State's biological diversity was enhanced with the release of the Comprehensive Regional Assessment report, part of the Regional Forest Agreement Process. The CRA report, which mapped 27 ecosystems within the forest areas covered by the process, was considered a milestone and involved an enormous contribution by CALM staff, many consultants and other scientists.

Bushwalking is popular with visitors to the lands CALM manages and the CALM book *Bushwalks in the South West* hit the top-10 non-fiction titles in a national newspaper's literary review.

Fires featured again except this time, the emphasis was on scientific research into bush fire behaviour in a joint project by CALM and CSIRO. *Project Vesta* is a major national initiative that is attracting worldwide attention, particularly from North America and Europe. It is part of a multi-million dollar, six-year program that will help develop a standard system that land managers and planners can use to predict the intensity of bush fires and how fast they spread.

The contribution Gordon Styles made to fire management with CALM and



In one of a variety of demonstrations during hands-on learning tours at the Balga Mia Village in Yanchep National Park, Aboriginal heritage officer Kevin Hill, from CALM's Aboriginal Tourism, Education and Training Unit, shows tour operators how to make glue—Nyoongar style. Participants used the glue to make a 'taap' or serrated-blade bush knife. Photo by Verna Costello

one of its predecessors, the Forests Department, was commemorated with the commissioning of the Styles Fire Lookout Tower at Ellis Creek in the Blackwood Valley.

On the central coast, a community-based committee and the Marine Parks and Reserves Authority met to discuss a proposal for a new marine reserve at Jurien Bay.

And a small, but significant piece of Western Australian history returned when duplicates of plant specimens collected early last century were returned to CALM's Herbarium from the Herbarium of Paris, France.

MARCH

The Tree Top Walk in the Valley of the Giants near Nornalup on the south coast was confirmed as one of the State's great nature-based tourism attractions with almost 280,000 visitors to the site since it opened 18 months earlier.

The number of visitors through the nearby Walpole Tourist Bureau increased 66 per cent and several new tourist developments had been built in the coastal town, including a 35-room motel.

High quality, feature grade native hardwood timber drew an enthusiastic response from buyers

at an auction CALM held in Bunbury. The sawlogs, from species such as jarrah, wandoo, blackbutt, banksia and sheoak, had distinctive features and attracted premiums of up to \$270 a tonne.

CALM's Land for Wildlife program reached a milestone when the area of private farmland set aside for nature conservation reached 10,000 hectares.

Western Shield—the biggest nature conservation initiative ever undertaken in Australia—entered a further phase with the relocation of mala (rufous-hare wallabies) from the Tanami Desert in the Northern Territory to Dryandra Woodland near Narrogin. The animals are being used in a captive breeding program as part of a long-term plan to re-establish the species in their former range.

Interaction with whale sharks in the Ningaloo Marine Park off the North West Cape is one of the fastest growing nature-tourism experiences. To ensure the experience remains ecologically sustainable, a new strategy prepared by CALM's Marine Conservation Branch and endorsed by the Marine Parks and Reserves Authority, was released.

The war on dieback disease—caused by a fungus and often likened to a 'biological bulldozer'—was stepped up with the announcement CALM would use aircraft to spray areas of the Stirling Range National Park, Cape Arid National Park and key areas around Busselton.

The spray contains phosphite, a compound CALM researchers have found can stop the spread of the disease in susceptible native plants.

APRIL

Plans were unveiled for

an \$8 million development program for CALM's Plant Propagation Centre at Manjimup. The program will enable the Department to increase its seedling production to more than 45 million plants a year within the next four years. This compares with current production of 23 million plants a year. The biggest demand will be for maritime pine seedlings as farmers in the medium rainfall zones incorporate maritime pine tree crops into their farming operations.

In Hobart, the High Court rejects an application by local conservation groups to appeal against a State Full Court ruling in relation to forest management that had found in favour of CALM. The court action cost \$1 million.

CALM Pemberton District completed a major redevelopment of the popular Gloucester Tree and re-opened the tourist drawcard in time for Easter.

Easter also contributed to the Department's nature conservation efforts. The big national retailer, Coles-Myer, promoted Easter Bilbies as an alternative chocolate treat with some of the proceeds given to bilby conservation programs, including a captive breeding initiative CALM has begun in conjunction with June and Lloyd Butcher's Kanyana native animal centre at Gooseberry Hill on the outskirts of Perth.

Bilbies are one of the species CALM is bringing back from the brink of extinction under *Western Shield*. There was further good news when it was announced two native animals would be removed from the State's threatened species list. These were the quenda (southern brown bandicoot) and

tamar wallaby. Numbers of the species have increased dramatically as a result of feral predator control, especially fox baiting. The woylie was removed from the State and National threatened list in 1996.

CALM's expertise in forest fires was recognised when CALM manager Rick Sneeuwjagt was invited to be part of a United Nations working party to discuss strategies to deal with the Indonesian fire situation.

MAY

Western Shield and the Tree Top Walk gained further recognition when they took out two national and State awards. *Western Shield* won the national Banksia Environmental Award for flora and fauna conservation while the Tree Tops Walk was the winner of the Significant Regional Attractions Category of the annual Western Australian Tourism Awards.

Western Shield also continued on its conservation march as further populations of threatened native mammals were reintroduced into their former ranges. At Shark Bay, CALM reintroduced banded-hare wallabies, and rufous-hare wallabies on to the WA mainland, where the species had not been recorded for 80 years; and Cape Arid National Park 120 km east of Esperance once again became 'home' for chuditch after an absence of more than 50 years.

Esperance also was the focus of a new conservation initiative—a draft management plan for the Esperance Lakes Nature Reserves was released. The reserves support thousands of waterbirds including the Recherche Cape Baren goose and the freckled duck.



Quality seed control is vital to the thriving tree crops industry being developed and strongly promoted by CALM. Here, technical officer Monica Dalton shows us a petrie dish containing acacia seeds. Her husband, Manjimup Seed Centre Manager Mark Dalton is seen beside a germination cabinet. Photo by Ian Cugley, courtesy The Sunday Times

1998 and all that . . .



Collie MLA Dr Hilda Turnbull (left), Environment Minister Cheryl Edwardes, CALM Sharefarms Lower West manager Tym Duncanson and CALM Executive Director Dr Syd Shea celebrated the opening of CALM Sharefarms' new office in Collie.

MAY (continued)

Interest in the desert timbers of the Goldfields strengthened further as woodcrafters paid up to \$2000 a tonne at auction for species such as mulga, kurrajong, beefwood, corkwood, native willow, sandalwood and goldenwood.

Public involvement in the Regional Forest Agreement Process kicked up a gear with the release of an options paper that outlined the issues that needed to be considered along with a number of possible approaches to a long term agreement. The release of the paper began a six-week public consultation period during which CALM and Commonwealth officials visited several country towns for open days to discuss the RFA with local communities.

JUNE

Fifteen CALM field officers were presented with graduation certificates by Environment Minister Cheryl Edwardes at a ceremony in Bunbury. The certificates marked the successful completion of a 14-week CALM training course held over the past two years. The Keynes Memorial Award for the most outstanding recruit went to George Watson of CALM's Marine and Coastal District, and based at Fremantle, while Natasha Oke took out the Executive Director's Merit Award for the trainee who displays the best all-round performance in both theory and practical areas. The Executive Director's Scholarship for AWU staff was awarded to Taryn Linning of Dwellingup District and Peter Masters

of Esperance District. Environmental officer Kevin Crane won the Dr George Malajczuk Scholarship and will study coral reproduction at Rottneest Island as part of his honours. Stev Slavin, manager of The Hills Forest Activity Centre, Mundaring, was awarded the Seamus Mulholland Scholarship. Stev is now undertaking a Graduate Diploma in Business (Tourism).

This month also saw the launch of the Bush Rangers, a joint initiative between CALM and the Office of Youth Affairs under the State Government's 'Cadets WA' program. The overall aim of Bush Rangers is to empower young people to play an active role in conservation and understanding the need for environ-

mental management. The Bush Rangers program is heavily accented towards practical, hands-on experience in the natural environment rather than classroom lectures

Young Western Australians became further involved in nature conservation projects when a group of young trainees under the Commonwealth's Green Corp program worked with CALM Mundaring staff to recreate suitable habitat for native animals around The Hills Forest Activity Centre.

Staff from CALM's Gascoyne District, Wildlife Protection and Marine Conservation Branch collaborated in an operation at Useless Inlet in Shark Bay to rescue several dolphins that had been trapped behind a new sea



"Marine and Coastal Districts Officer George Watson running a touch pool activity for Safety Bay Primary School students at the launch of the Penguin Island Junior Ranger Kit, with Minister Cheryl Edwardes." Photo by Craig

wall, built as part of a salt extraction facility. The CALM team, with assistance from local fishermen, successfully freed eight dolphins and made plans to rescue a further four later in the year when weather conditions were more suitable.

JULY

There was further good news on the conservation front with the announcement of the rediscovery of two native plant species - Drummond grass in the Stirling Range National Park and a lasiopetalum in the Brookton area. The rediscoveries mean that since 1991, when the category was first included on the threatened flora list, the number of presumed extinct species has dropped from 53 to 23. And in other good news for the State's biodiversity, 16 fauna species were removed from the threatened list. They include eight birds, one reptile, three invertebrates and four mammals.

Woylies made a comeback on Peron Peninsula as CALM reintroduced the species as part of Project Eden, the Western

Shield program that is re-establishing native animals in Shark Bay. The release of 60 woylies brought to almost 120 the number of the small marsupials that have been reintroduced into the 1000-square-km prong in the State's only World Heritage-listed area. The reintroduction follows the translocation of mallee fowl the previous year.

Native populations of brown boronia—that sweet-smelling popular wildflower—continue to show signs of a healthy recovery as a result of a management plan CALM introduced five years previously. The plan has improved management systems for commercial pickers to maintain boronia harvesting from forest areas at sustainable levels.

AUGUST

Perth beaches have some unusual visitors - fur seals that had travelled 5000 km from the Subantarctic. CALM wildlife officers warned beachgoers to treat the animals with caution and respect as while the animals might look big and

clumsy, they could move quickly and bite if threatened.

CALM's maritime pine treecrops project was extended into the Bunbury region, an area extending from Harvey, across to Albany Highway, south to Kojonup and south west to the Frankland River near Nornalup. The first year's target of 200 hectares of maritime pines—plus a further 20 hectares of new landcare plantings—was reached. CALM Sharefarms also opened a new office in Collie to service a number of tree-planting programs in the South West.

The month also marked the second phase of one of the nation's most remarkable nature conservation stories—more noisy scrub birds were reintroduced into the jarrah forest east of the Harvey-Waroona area. The reintroduction—a project sponsored by CALM and Alcoa of Australia—is part of an initiative to re-establish colonies of the bird that was first recorded by renowned naturalist, John Gilbert, more than 150 years ago.

continued page 6



CALMfire carried out an intensive series of fire management training programs during the year. Among those who attended were (seated from left) John Winton, Esperance, John Tillman, Blackwood, Greg Broomhall, Albany, David Gross, Kununurra (standing left), Russell Bone, Moora and Geoff Young, Goldfields.



CALM Timber marketing manager Terry Jones (left) was joined by Grant Pronk who transferred from the Goldfields during the year to join the marketing team. Grant is based at CALM Timber Technology, Harvey.

1998 and all that

AUGUST (continued)

The Montebellos off the north-west coast are notable as the site of the atomic bomb tests in the 1950s. This month, the islands again were in the news, but for very different reasons. Monitoring of mala, that were reintroduced on to the islands back in June, showed the animals were doing very well, and that joeys were expected to soon emerge from their mothers' pouches. The project, part of *Western Shield*, is being assisted by Apache Energy, which operates oil, and gas fields near the islands.

Bush Books, CALM's pocket-size guides to WA's amazing native plants, animals and landforms, turned 21—editions, that is. The 21st edition was *Bugs in the Backyard* that provides an insight into the fascinating life of smaller creatures that make up the ecosystems in and around suburbia. Since their release two years previously, more than 80,000 copies of *Bush Books* have been sold, placing the series well up on the 'best sellers' list.

SEPTEMBER

The 'long distance dream' became a reality when Environment Minister Cheryl Edwardes cut the ribbon and farewelled the first 'end to enders' on the new Bibbulmun Track on Sunday, September 13.

The day will long live in the memory of the many hundreds of CALM staff and volunteers who, along with colleagues in other agencies such as the Ministry of Justice, worked for five years on the 964-km project.

The New Bibbulmun Track now extends from Kalamunda on the outskirts of Perth, through the Swan, Central and Southern forest regions to Walpole and across the south coast to Albany.

As part of the Bibbulmun Track opening celebrations, Attorney General and former Environment Minister Peter Foss dedicated a section of the track in

memory of one of the State's great environmental law experts, Graham Delaney. Mr Delaney, who passed away in March, worked closely with CALM on a range of legal issues throughout a distinguished career, during which he became Deputy Crown Solicitor. The Graham Delaney Walk and Lookout forms part of the track east of Walpole.

WA continued its hold on the title of the nation's leading tree crops State, with the biggest softwood and hardwood afforestation program ever undertaken in Australia. This winter, CALM and the private sector have planted bluegums and maritime pines on more than 20,000 hectares of cleared farmland in the South-West. The plantings brought to 120,000 hectares the area of cleared farmland that had been reforested with commercial tree crops in the past 10 years.

OCTOBER

CALMWeb—the Department's internal 'cyberspace'—was awarded a Public Relations Institute of Australia State Award for excellence in employee communications. The award recognises the innovative use of modern communications to ensure staff has immediate access to a wide range of information that helps them in their day-to-day work.

The warmer weather brings with it a series of warnings about the hazards of living with wildlife. Magpies and snakes were on the move down south, while in the Kimberley CALM's local officers warned locals and visitors alike of the need to be alert for crocodiles.

CALM's Wheatbelt Region had cause for a special celebration—the reservation of the Tutanning Nature Reserve near Pingelly. The 'Back to Tutanning Day' was attended by many people associated with the reserve's creation in 1960. Tutanning has been the site of extensive scientific study over many years and was one of the first areas where the effectiveness of



Staff from CALM Timber Technology celebrated one of their busiest years with an informal gathering. At the function, centre manager Ian Rotherham presented researcher Judy Pitcher with a memento in recognition of her outstanding contribution to the team's work in 1998. Front (from left to right): Graeme Siemon, Peter Hill, Judi Pitcher, Emily Humble, Ian Rotherham, Karen Carter and Sue Korecki. Middle: Darryl Edmunds, Ray Doust, Brian Haines, Steve Davis and Grant Pronk. Back: Stefan Prokopszyn, Terry Jones and Peter Piper.

1080 as a fox bait was demonstrated.

Dibblers—a small native marsupial on the threatened species list—were reintroduced into a part of their former range when 26 captive bred animals were released on Escape Island at Jurien Bay. Meanwhile, nature conservation initiatives were further bolstered with the release of draft management plans for the Perup Forest and Lake Muir-Uncup wetlands as well as the Shark Bay Terrestrial Reserves.

The involvement of Aboriginal people in the conservation of the D'Entrecasteaux and Shannon National Parks was further strengthened with the signing of a Memorandum of Understanding between the Manjilup Aboriginal Corporation and CALM. The Department and the Corporation will work together to identify issues of cultural heritage and management of significant sites, places and values.

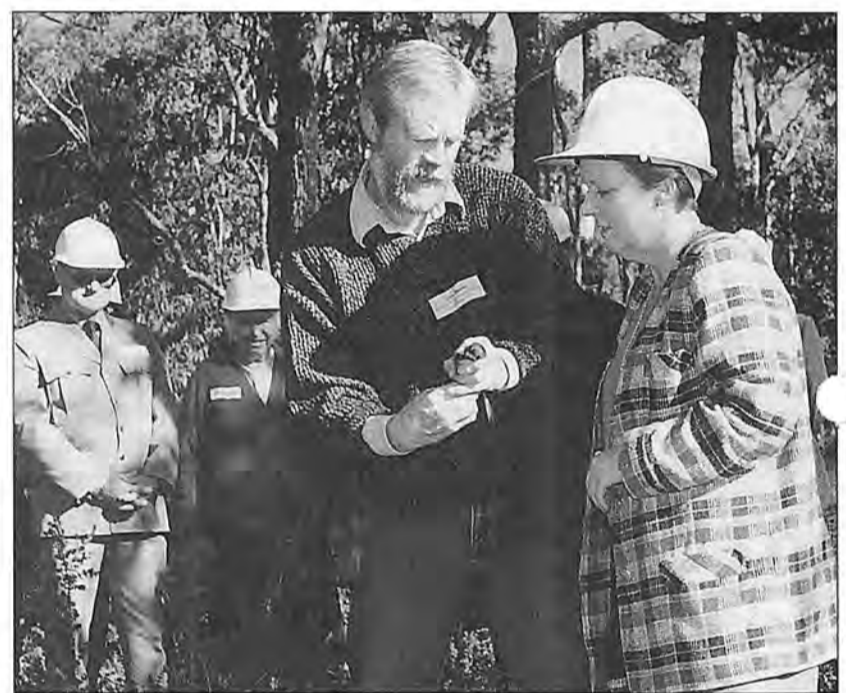
WA was identified as one of the few places in the world where rapid, broadscale tree planting

could be undertaken to sequester carbon. A major international carbon sequestration conference in Melbourne was told that WA had the capacity to sequester a carbon sink of more than 200 million tonnes over the next 30 to 40 years—equivalent to 800 million tonnes of CO₂ emissions.

NOVEMBER

The Melbourne Cup might be the race that 'stops a nation' but the first Tuesday in November also heralded the arrival of a new calf to Nicky, one of the regular dolphin visitors to Monkey Mia. The calf was the fifth to be born in the past six years to dolphins at the popular resort. Two weeks later, a second calf was born, this time to Surprise.

CALM's Perth Observatory kept sky-watchers up-to-date with news of a Leonid Meteor shower that was expected to rain at a rate of 1000 shooting stars an hour in mid-November. Observatory staff emphasised meteor storms were difficult to predict—and they were right. While not exactly a fizzer, the meteor shower



CALM south coast native conservation program leader Alan Danks explaining the unique characteristics of the Noisy scrub bird to Minister Edwardes.

was more of a 'drizzle'. Mt Lindsay near Walpole became the latest release point for native species under CALM's *Western Shield* project. Forty of the animals were released into the area as part of an overall program to re-establish woylie colonies in four areas along the south coast.

Tammar wallabies were another target species for translocation, this time into the Julimar Conservation Park east of Bindoon and the Karamia Wildlife Sanctuary between Gidgegannup and Chidlow. And at Dryandra, bilbies made a comeback as four of the animals were released into the breeding compound CALM's Narrogin district built in the woodland. The progress of the three females and one male will be monitored, providing information that will lay the groundwork for further reintroductions of the species in other parts of the State where they used to occur.

Vincent Serventy—renowned environmentalist and considered by many to be the father of conservation in Australia

—made a fleeting return to his native WA and was both 'pleasantly surprised' and 'extremely pleased' with the drive to restore the State's natural biodiversity. 'Vin', who has spent more than 50 years championing the environmental cause said *Western Shield* was 'exciting'.

"It was exciting to see this work, everything was as good as the literature and articles I had read," he said. "It is an excellent project run by a very dedicated people who use a range of ingenious methods to control feral animals."

Western Everlasting—a 'Western Shield for native flora'—was officially launched. The program will conserve the State's threatened plants by reducing the impact of threats such as dieback and weeds. Like its animal counterpart, *Western Everlasting* will involve establishing populations of threatened plants in their former range.

The launch of *Western Everlasting* was also accompanied by two more nature flora conservation initiatives.

CALM's Herbarium went into cyberspace with *FloraBase* giving people browsing the internet access to a wealth of information on the State's native flora. CALM also released a 220-page full colour guide to the 350 native flora species classified as rare. WA's Threatened Flora is also a rallying call to all who want to conserve the State's floral heritage.

A significant area of wetlands 25 km north of Bunbury was reserved for conservation when Kemerton Silica Sands handed over 198 ha of private land worth \$1 million to the Government for CALM to manage. The land, to be called Kemerton Nature Reserve, has sensitive wetland areas and will be managed by CALM to ensure their conservation and protection.

CALM and the Ministry of Justice were joint winners of the regional services category of the Premier's Awards for Public Sector Management. The award was for CALM's new Bibbulmun Track project, officially opened in September.



John Septimus Roe Bush Ranger cadets Adam Tanner, Luke Ramage and Kellie McEnaney 'get physical' with a python at the launch of the Bush Ranger Cadet Scheme, developed jointly by CALM and the Office of Youth Affairs in June. Photo by Norm Bailey

NOVEMBER (continued)

CALM fire officers brushed up on their aerial fire-fighting skills during an exercise at Wongan Hills. Two water-bombers and a helicopter were used as part of the continuing aerial fire-fighting training CALM undertakes in conjunction with the Fire and Emergency Services Authority.

DECEMBER

Western Australians were stunned to discover several quokkas had been killed as a result of cruelty on Rottnest Island. CALM charged an 18-year-old youth with the death of one of the animals. He was later found guilty.

On a brighter note, *Western Shield* continued on its march towards restoring the State's biodiversity with a further release of numbats into the Mt Dale area in the jarrah-wandoo forest east of Armadale. Ten of the animals were released as part of a joint initiative between CALM and Alcoa of Australia.

Western Shield received further corporate sponsorship when Westralian Sands announced it would provide \$120,000 over three years for feral predator control on

100,000 hectares of native forest in the Capel-Nannup-Margaret River area. Western Power also joined CALM in reintroducing 40 woylies into the forests around Muja power station at Collie.

New management initiatives were announced for several caves in the Leeuwin-Naturaliste National Park. The initiatives were for the Calgardup and Giants caves and enable people to go on self-guided tours of the subterranean wonderlands.

An Environmental Protection Authority report—along with a response from CALM—was released by the Environment Minister. The report questioned sustainable logging levels in the jarrah forest and was referred by the Minister to an independent arbiter for advice.

CALM's publishing 'flagship', *LANDSCOPE*, was recognised when it was awarded the prestigious Alex Harris Memorial Award for Excellence in Science and Environmental Reporting. The award, sponsored by CSIRO, ANZAAS and The West Australian, is in memory of the late Mrs Alex Harris, who was a respected science journalist at The West

Australian for 30 years. The judges selected *LANDSCOPE* for its continual high standard and well written articles.

The Avon Valley National Park reminded us of what lay ahead this summer as 300 hectares were burned out in a wildfire. The fire burned through country that had not seen flames for 14 years, but was brought under control when it reached a lower fuel area that had been burned in a fire four years previously.

Lightning storms in the week before Christmas had CALM fire crews out again as 18 bushfires were detected across the South West. CALM spotters were still picking up 'smokes' on Boxing Day as a result of the storms.

CALM's management plans for regional parks were further strengthened with the release of a fire management plan. The plan covers response initiatives and draws on CALM Wildfire Threat Analysis, used to help protect forest communities from wildfires. CALM also donated a heavy-duty fire pumper to the South Kwinana Volunteer Bush Fire Brigade as part of the regional park protection strategy.



"Kanyana Volunteer Alice Peaveley showing Applecross Primary School students Betbet, a bilby—one of the species the school is helping to conserve through the Western Shield Action Pack." Photo by Ernie McLintock



Porongurup ranger-in-charge Mike Paxman (left) and tourism and recreation regional leader Terry Passmore, staffing one of CALM's displays at the Albany Agricultural Show.

Coastal clean up celebrates International Volunteers Day

VOLUNTEERS from Peaceful Bay and Perth, and even as far afield as Queensland and Germany, helped CALM staff carry out a Park Clean-up Day in the Mandalay Beach and Banksia Camp area of D'Entrecasteaux National Park, early in December.

The Clean Up Day was organised as part of Coast Care Week, and to help celebrate International Volunteer Day.

The volunteers, many of whom are members of the Walpole Nornalup National Parks Association, met the staff at Crystal Springs, where ranger-in-charge Carl Beck briefed them.

Breaking up into small groups, they collected rubbish along the edges of Mandalay Road and the four-wheel-drive tracks in the area as well as along the beaches.

After the clean-up, the participants enjoyed a well-earned barbecue lunch at Banksia Camp, where cold drinks were a welcome treat after the hard work and hot weather.

Carl said he was most impressed with the efforts of the volunteers and staff, as well as being pleasantly surprised at the low levels of rubbish found

over a fairly extensive area. "This reduction in rubbish, compared to that found on earlier cleanups, reflects a dramatic improvement in visitors' behaviour," Carl said.

"They have moved from indifference to a willingness to actively care for the park, and this points to the success of our public education programs.

"These programs are carried out by CALM staff and volunteers at key park entry points over peak periods such as Easter, Christmas, New Year and other public holidays."

Further clean up days will be held at other areas of the parks over summer, and Visitor Information Stations will again be running at key entry points to the parks over long weekends and other peak times.

"We will continue to encourage visitors to take their rubbish home, protect the vegetation by staying on tracks and roads (not on vegetation or in the dunes), and not to light campfires or bring pets into national parks," Carl said.

Anyone who would like to help at future clean up days or the Visitor Information Stations can contact Carl on 9840 1027.

Friday 13th a lucky day for Albany

FRIDAY November 13 created nervous anticipation among CALM people trying with 'studied nonchalance' not to appear superstitious.

They were staffing the South Coastal Region's display stall at the two-day Albany Agricultural Show and, as it turned out, a heavy downpour at 4.00 p.m. was the worst they encountered—quite typical of Show Day in Albany.

Notwithstanding the unpredictable weather, about 700 visitors took the opportunity to find out about CALM's activities, and a study of facial expressions, tones of voice, and body language revealed that they were much impressed

by Laura Beck

with what they saw and heard. This was particularly evident, when Terry Hales (temporary ranger-in-charge at Two People's Bay) shared first-aid-in-the-bush stories with two young lads, about eight years old.

The tales must have been rivetting, because their eyes were almost as big and round as the CALM logo at the top of our display board.

Another attraction had visitors and other stallholders commenting favourably on the range of sights and sounds floating out from our display—

courtesy of CALM's CD-ROM *Wild about WA*.

Land for Wildlife officer Sylvia Leighton's tape of frog croaks actually harmonised surprisingly well with whale songs and other soothing wildlife sounds from our computer. A 'strange harmony of contrasts' indeed.

The bush books and the locally produced Albany walks publication sold well, and we were able to provide the public with an enormous range of information.

The plan to staff the stalls with two CALM people of differing work backgrounds was highly effective. It minimised distraction by enabling

one to write receipts for publications, and demonstrate how to access the *Wild about WA* CD ROM, while the other answered questions about *Western Shield* progress, the timing of prescribed burning, mammal identifications, and so on.

All who took part, or helped in various ways, including those who transported and set up equipment and display material are to be congratulated.

The attendance at such local shows is an excellent opportunity for CALM districts to showcase the Department's positive achievements, encourage team spirit, and generate revenue at a District level.

Sun 'n' Stars 99

A great deal of fun was had by all at CALM's 'Sun 'n' Stars Festival 99'.

With a crowd of about 4000 people passing through the gate, Yanchep National Park Staff did a sterling job showcasing all that Yanchep has to offer, culminating in a sensational night of stargazing with the Observatory. On hand to help were CALM staff from several different divisions and projects.

To read more about the happenings on the day—look out for the feature spread in the next edition of *CALMNEWS*.



Walking at Walpole a welcome escape

AFTER two long, intense days at the successful State Trails Conference held recently in Albany, delegates enjoyed a welcome 'escape' for a spot of recreational sightseeing.

Five conference delegates, all seasoned walkers, eagerly took up the option to experience 20 kilometres of the Bibbulmun Track.

Among them were Tasmanian Wilderness World Heritage Area planning officer Ann Wessing, and WA Bushwalking Federation's Fiona Noble—both presenters at the Conference.

Others included Blackwood Valley llama farmers Margaret and Adrian Clarke, Trailswest project officer Helen Cloghan, and CALM's South Coast regional manager John Watson.

The walk followed the track from Mutton Bird, near Torbay Inlet, to Little Grove, along Frenchman's Bay Road in Albany

by Martin Lloyd

Although quite a warm day, those taking part thoroughly enjoyed the walk, with first-timers highly impressed with the Bibbulmun's alignment and construction.

Recreation options chosen by other delegates included visits to the Tree Top Walk and the Albany Boardwalk; a four-kilometre canoe trip, and a 15-kilometre mountain-bike ride.

A highlight of the canoe event was the entertaining display provided—as though on cue—by dolphins playfully flipping fish out of the water and high into the air at King George Sound.

All in all, it was a great day to enjoy (and show off) some of the South Coastal Region's popular recreation facilities in just a few of its impressive beauty spots.



Conference participants: front left to right, Helen Cloghan, Ann Wessing, Fiona Noble and Margaret Clarke. Rear: Adrian Clarke and Martin Lloyd. Photo by John Watson



Tony Friend and Tony Start say their farewells to Woodvale. Photo by Penny Walsh

Two Tonys on the move

WOODVALE Research Centre has recently lost the services of a couple of Tonys—Friend and Start.

Tony Friend was the first to depart, early in January. After 18 years based at Woodvale, he has moved to Albany where he will supervise the potoroo program at Two People's Bay.

Tony will also work on the reintroduction of numbats to the Stirlings, and conduct dibbler research on the south coast.

"I'm really happy with the move. CALM's south coast staff have been very welcoming, and I'm looking forward to working with them," said Tony.

"It will be good to be part of a collaborative effort between CALMScience and the South Coast Region and Albany District."

The majority of Tony's time will be spent on the potoroo program. There is still much to learn about this mysterious mammal, rediscovered at Two

by Penny Walsh

Peoples Bay Nature Reserve in 1994, after not having been officially recorded since 1879.

"The species is perilously close to extinction. There's only one known population, probably less than 100 strong," said Tony.

Tony will also continue monitoring the reintroduction of bandicoots to Mt Barker.

"There is a lot to do in the region, and the people are really keen," he said.

Tony Start has headed north to Kununurra where he will work with the Co-operative Research Centre for the Sustainable Development of Tropical Savannas.

Co-operative Research Centres bring together researchers from universities, government agencies and CSIRO to work on common problems. In this case, Tony's work will revolve around

the riparian zone of the Ord River.

"We will be looking at the fringing vegetation along the river—what lives there, what grows there, and what factors affect it. For example, feral animals, weeds, tourist developments, stock, fires and dam construction.

"Riparian zones are usually low-lying environments rich in nutrients, which makes them hotspots for biodiversity and disturbance."

Tony will work from CALM's Kununurra office with technical officer Tricia Handasyde. Tricia has been seconded from Agriculture WA in Kununurra.

Having previously lived in Karratha for 10 years, and been a frequent visitor to the Kimberley for more than 20 years, Tony says he is looking forward to his official return in March, and working closely with CALM's Regional staff.

Chuditch education campaign

FOLLOWING the tale of the long-trekking chuditch sighted near Salmon Gums in the September-October 1998 issue of CALM NEWS, there have been more reports of chuditch in the South West.

In fact, they've also been spotted at Herne Hill, Guilderton and in the Wheatbelt.

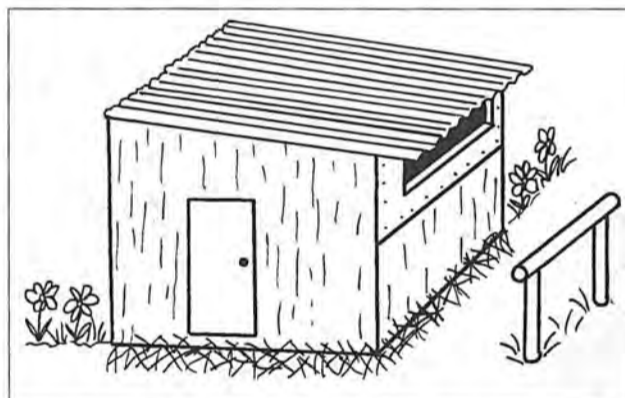
It has reached the stage where head of CALM-Science's Biodiversity Conservation Group, Keith Morris, thinks it would be prudent to issue guidelines to local communities about 'living with chuditch'.

"They are fantastic creatures, but their carnivorous ways are causing concern in the community, particularly among chicken owners. Some chuditch have been known to kill several chickens in a night," he said.

"What we plan to do is alert people to the fact they'll be seeing more chuditch in the future—a great sign of a recovering ecosystem—and give people information that will help ensure a peaceful coexistence.

"After all, the law is on the chuditch's side. It is a threatened species, and injuring or killing one could lead to a \$10,000 fine," he said.

Chuditch are mainly active at night and their distinctive white



spots make them easy to recognise. They are fast and efficient; able to climb, dig and jump, and they eat small reptiles, birds, insects and small mammals.

Chicken owners need to keep chuditch in mind when they are building or refurbishing their chook pens. CALM suggests they consider the following design, commissioned by the Tasmanian Threatened Species Network, which seems to foil the carnivorous Tassie devils and quolls.

The walls of this shed need to be 2 metres or higher, with tightly fitting vertical palings or corrugated iron.

The construction should be sturdy, with a roof of iron or wire mesh, and no gaps. A raised entry (1.75m) with tin around it will prevent cats from climbing in. A half-way perch

allows access for chooks, but not chuditch. The built-in opening means that adult chooks can enter at anytime, so there is no need to put them in at night. The structure should be on a secure floor or dug well into the ground. Mesh on the side, buried at least 0.5m deep, will prevent foxes digging in.

The shed is not recommended for baby chickens because they can't use the perch and will be vulnerable to birds of prey. Baby chickens require a fully enclosed house. The shed is also not recommended for ducks.

As part of CALM's ongoing chuditch monitoring program, people outside forest areas who have close encounters with chuditch are asked to report their sightings to Brent Johnson (08) 9405 5100.

CALMScience seminars

IT looks as if 1999 is to be the 'Year of the Seminar', when CALMScience researchers, together with scientists from universities, government agencies and the CSIRO will run seminars at which each of several speakers gives a different perspective on a chosen theme.

The first, early in March, was on species conservation genetics and featured Peter Spencer from Perth Zoo as well as David Coates and Margaret Byrne from CALM's WA Herbarium.

On Tuesday April 6, speak-

ers from CALM and the Western Australian Museum will focus on the Carnarvon Basin Survey. On Tuesday May 4, there will be a seminar on aquatic invertebrate conservation featuring CALM scientist Stuart Halse. The seminars will be held at the CSIRO auditorium from 1.00pm and 5.00pm.

The Biological Information Group will also hold a seminar series. The first, on databasing and presenting taxonomic information, runs from March 22-25 at the WA Museum.

The second will look at vouchering conservation activities and be held on Wednesday April 14 from 9.00 am to noon at the WA Herbarium. CALM contacts: Neville Marchant and Ken Atkins.

In May, Ben Richardson will organise a seminar on using FloraBase as a daily information resource. It will be held on Wednesday May 12 from 9.00 am to noon at CALM's WA Herbarium.

Stay tuned for more information on seminars later in the year.