

CALM NEWS

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JANUARY—FEBRUARY 2001



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Ramsar lists more WA wetlands

THREE more of Western Australia's wetlands have been listed under the international Convention on Wetlands, commonly referred to as the Ramsar Convention.

The listings, which were officially confirmed on World Wetland Day—2 February—also included 12 additions to four existing Ramsar sites.

The new listings are the Becher Point wetlands near Rockingham, Lake Gore near Esperance and the Muir-Byenup complex east of Manjimup. The additions are to the Ord River Floodplain, the Peel-Yalgorup system, Jolibin Lake east of Narrogin, and the Vasse-Wonnerup system near Busselton.

The Convention on Wetlands is an international treaty that promotes the conservation of wetlands of international significance and the wise use of wetlands generally. The convention was first adopted in 1971 at a meeting in Ramsar, Iran.

It currently lists 1038 sites throughout the world covering

an area of more than 78 million hectares. Australia, one of the first signatories to the Convention, has 56 listed Ramsar wetlands of which 12 are in Western Australia.

CALM wetland specialist Jim Lane of CALMScience Division in Busselton (with advice and assistance from Wetlands International-Oceania), had undertaken a detailed nomination process to identify candidate wetlands.

This had involved consultation with key stakeholders and the preparation of the nomination document that contained details of the features of each of the nominated wetlands along with site maps.

The Commonwealth Government provided almost \$50,000 through the National Wetlands Program of the Natural Heritage Trust for the project.

All three of the areas being nominated are internationally significant and deserve their standing alongside other Ramsar sites both here and overseas.

Becher Point is distinctive in

that it is one of the youngest wetland systems on the Swan Coastal Plain. These wetlands were formed only during the past 4500 years and consequently have particular significance in terms of research interest in the evolution of wetlands.

Lake Gore is habitat for almost one-third of the world's population of hooded plovers and 10 per cent of the global population of banded stilts. It also is a drought refuge for many thousands of other waterbirds.

The Muir-Byenup system includes numerous lakes and swamps. This complex is also a natural diversity recovery catchment under the State Salinity Strategy.

As well as providing habitat for tens of thousands of waterbirds—more than 51,000 individual birds have been recorded in a single survey—it has almost 650 species of native plants, many of them rare.

WA now has more Ramsar-listed wetland sites than any other Australian State or Territory.



John Bartle, John McGrath and Richard Harper, "delighted to be part of a CRC chosen for such vital research". Photo by Verna Costello



CALM Director of Parks, Jim Sharp (left) and Track Care WA President Doug McKenzie prepare to sign a Memorandum of Understanding between CALM and Track Care WA. Photo by Ernie McLintock

MoU signed

FOUR-WHEEL drivers will be delighted with the signing of a Memorandum of Understanding that will allow them access to CALM-managed lands and have more involvement in the management of its tracks.

The signatories to the MoU were CALM's Director of Parks, Jim Sharp and Track Care

WA President Doug McKenzie. (Track Care is the umbrella organisation for the State's recreational four-wheel drive associations.)

The signing was witnessed by Greg Bremner, President of the WA 4WD Association, and Jan Scudamore from Tread Lightly.

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Salinity research funded

CALM is part of the Co-operative Research Centre which was recently awarded \$22.5 million by the Commonwealth Government to investigate dry land salinity management during the next seven years.

Results of the research could lift the productivity of millions of hectares of WA land by 75 per cent.

Other members of the Research Centre include the University of Western Australia, Agriculture WA, NSW Agriculture and the Commonwealth Scientific and Industrial Research Organisation (CSIRO).

The funding is part of \$325 million allocated to 19 co-operative research projects across Australia to develop commercially viable ideas. Successful candidates were from industries ranging from medical companies to technological and agricultural organisations.

CALM's Executive Director,

Dr Wally Cox, said the expertise of CALMScience researchers had been recognised in a fiercely contested research prize.

"The commercial value of this research has been estimated at \$86 million a year using their research ideas to improve the use of the land," Dr Cox said.

"It shows the level of expertise at CALMScience is among the best in the country, and will give salinity research an exciting boost."

He said flow-on benefits of projects engineered by the team would lead to social and economic advantages for towns and communities affected by the impact of salinity.

"New field-tested, economically viable perennial crops will be required if we are to achieve the scale of planting (measured in millions of hectares) necessary to arrest salinity," he said.

Farming systems suitable for land already affected by salinity will be developed.

"There could be more than three million hectares of such land, and suitable plants and management systems could lift its productivity by 75 per cent," Dr Cox said.

The CALMScience team members are Farm Forestry Unit manager, John Bartle; principal research scientist, Margaret Byrne; senior research scientist, Richard Harper and Forests and Tree Crops Group manager, John McGrath.

John Bartle said the aim of the Perth-based CRC was to develop farming systems that mimic natural ecosystems.

The team will:

- select suitable woody and herbaceous perennials;
- develop, test and demonstrate farming systems to reduce groundwater recharge;
- rehabilitate and use salt-affected land;
- develop options for farmers wanting to use the new farming systems;

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The results of the election are now known and we welcome Dr Judy Edwards MLA as the new Minister for the Environment and Heritage and Water Resources. The agencies in her portfolios include CALM, the Marine Reserves and Parks Authority, Conservation Commission, DEP, EPA, Kings Park and Botanic Gardens Authority, Zoo, Water and Rivers Commission, Swan River Trust, Office of Water Regulation, Burswood Park Board and the Heritage Council.

The Forest Products Commission is part of the Primary Industry portfolio along with Agriculture and Fisheries.

Initial briefings have already commenced on a range of issues including the key issue of old growth forests.

The new Government can be expected to provide guidance on its policy priorities in the conservation, environment and natural resource management areas and these in turn will need to be reflected in our strategic and output plans and resource allocation. Resolution of the old growth issue, the creation of new national parks and marine parks and nomination of additional World Heritage areas could be expected to be amongst the priorities.

A recent visit to the South Coast region and Albany District was an opportunity to recognise the contributions of volunteers and particularly Eileen Croxford to CALM.

Eileen, at age 88 is still active in the Albany Regional Herbarium along with many other members of the Albany branch of the WA Wildflower Society.

Volunteers are important to us in many ways but in my view the most important is that it is a reflection of the community's interest and commitment to the environment. Their particular interests vary but collectively in cooperation with CALM our volunteers are working to leave our environment in good condition for future generations.

My Albany visit also provided the opportunity to recognise the performance of Albany and Esperance District and South Coast Regional staff in achieving 12 months without a lost time injury.

Collectively, CALM employees have now achieved the best safety result since the establishment of CALM. The figure of five lost time injuries per million hours worked provides us with the next challenge which is to reduce it below three over the next 12 months.

I encourage all employees to work with their safety coordinators to continue to identify risks in the workplace and ways of minimising those risks.

Finally, many CALM employees have been heavily committed to fighting wildfires, many in cooperation with FESA. This summer has seen an above average incidence of fires and it is a credit to CALMfire and other CALM employees throughout the State that damage has been minimised.

Dr Wally Cox, Executive Director

MoU signed cont'd

Jim said he was delighted that a workable agreement to reduce pressures on CALM-managed lands had been reached between the parties.

"The Memorandum of Understanding sets out guidelines and regulations on the behaviour of four-wheel drivers in State forests, national parks and other CALM-managed lands," Jim said.

"Four-wheel drive enthusiasts will receive information about responsible ways to use the bush, its plants, animals and tracks, and information about closures, openings,

logging and proposed burns.

"In the past, many CALM tracks weren't designed for wide recreational use by the public, and this had created management problems when four-wheel drivers began to use them.

"We'll continue to monitor the disturbance to wildlife, physical damage to tracks, noise and dust pollution, any threat to Aboriginal and historic sites, erosion, drainage, water pollution, the aesthetics, littering, fire risk, health and hygiene, and the need for facilities," Jim said.

Trip was eye-opener

by Lee Patrick

IT will be impossible for me ever again to glance casually at a CALM reserve.

That which I have taken for granted as an easily manageable resource, now reveals an inter-weaving of intricacies and balance I had never suspected.

Being a volunteer on a field trip to Dryandra Woodlands (Dryandra and Highbury State Forests), conducted by CALM Woodvale senior technical officer Brent Johnson has changed all that.

The immediate attraction of Dryandra is the charming woodlands, undisturbed and peaceful amid fertile undulating farmland. Agriculture and conservation work together to manage this valuable Wheatbelt ecosystem.

About 28,000 visitors to the area yearly bear witness to the popularity of this reserve, only 160 kilometres from Perth.

The work of breeding, translocating and protecting native fauna at Dryandra is a credit to the vision and diligence of CALM.

The reintroduction of bilbies and the western barred bandicoot is now in progress, and I was delighted to be part of the trapping and tracking process to monitor the progress of these animals.

Life is tough for Dryandra fauna. Feral foxes, cats and rabbits not only predate but compete for food and shelter, causing damage to native plants and habitats.

Fire protection,

introduction of weeds, fertiliser drift, and vehicle accesses add to the problem. Increasing soil salinity is a problem on agricultural lands surrounding Dryandra.

The complexity of survival for the marsupials at Dryandra is portrayed in the life of the mardo. At 12 months of age, following a brief, aggressive mating period, the males die, making way for the females and future generations.

All the marsupials at Dryandra have a similar story of adaptability to environment. My admiration for them has fuelled a desire to know, see and experience more.

Subsequent voluntary work in administration at the Woodvale Research Centre has introduced me to a dedicated team of experts who are as



With camera ready, Lee takes notes on Dryandra wildlife. Photo by Paul Hotchkiss

diverse in character as the fields they represent. Their kindness and willingness to share their expertise has made being a volunteer a pleasure.

LETTERS . . . LETTERS . . . LETTERS . . . LETTERS

CBRs to Gallipoli

The following letter arrived recently from the State President of The Returned Services League of Australia Lieutenant-Colonel K J Bladen (retired):

I read with interest your article regarding the success of your Bush Ranger Programme in your September-October issue of CALM NEWS.

The RSL, too, is very involved in the cadet movement in WA, embracing all cadets, Australian Defence Forces, Police, SES and Bush Rangers.

In fact, together with the office of Youth Affairs, we are sending four cadets—plus two chaperones—to tour World War I battlefields in France and Gallipoli in April 2001, culminating in the Dawn Service at Gallipoli on ANZAC Day.

One of the four cadets selected from the 16 finalists (and 70-plus nominations) is Chenelle Davies (15) of the Como Bush Rangers. We thought that you may care to publish this in a future issue of CALM NEWS.*

The tour will help the cadets to understand why it is so important to remember those who fought in wars and made the supreme sacrifice. The cadets will also see battlefields where soldiers not much older than themselves fought and died.

This is the inaugural tour, and will possibly be conducted annually under the title 'Spirit of ANZAC Tour'.

We would be pleased to see more Bush Rangers nominating for future tours. Details for the tour in 2002 will be promulgated to all cadet units later in 2001.

*For more on Chenelle and CALM Bush Rangers at Como Senior High School, see page 7.

Grateful Albany City

I am writing to express my sincere gratitude for the extraordinary efforts that the members of your organisation demonstrated over the last couple of weeks in assisting the City of Albany during the devastating fires which occurred in our region.

I am continually amazed at the extent of assistance rendered to us by government bodies and other organisations far and wide, and appreciate what a huge task it was to assess, co-ordinate and provide support where needed most. We certainly proved that by working together we really can make a difference.

Please pass on my heartfelt thanks to all involved; I am proud and honoured to have you supporting the Albany community.

Yours sincerely,
Alison Goode JP
Mayor

Behaviour improves

I wish to congratulate CALM on the management of Lane Poole Reserve.

My family and I recently returned to Lane Poole Reserve for the first time since regulation was introduced. Prior to regulation, the obnoxious behaviour of a few spoiled the camping experience for the majority.

Regulation means that families once again enjoy camping in a very beautiful part of the State, on Perth's doorstep.

Regulation would not be possible without the dedicated CALM staff who, with limited resources, conduct themselves with the highest level of professionalism. As a public face of CALM they are without fail knowledgeable and very welcoming.

Please extend our thanks to the relevant CALM staff and please arrange for a copy of this

letter to be placed on each current member of staff's personal file.

Yours faithfully,
Craig McKie
Floreat Park.

Memorial seat

Following is a moving letter from Leonie Christian to Director of Parks, Recreation, Planning and Tourism Jim Sharp:

I have been wanting to write to you for months now, and felt this long overdue letter could wait not a moment longer.

You will recall I approached you last year regarding a memorial seat for Timothy Christian-Burch my 12-year-old son, who drowned at Matilda Bay on Xmas Day 1999. The seat, as you are probably aware, has been constructed.

The seat is a beautiful memorial to Tim, being in his favourite place, solidly built, right out there (in front of everything), in an ideal setting where you can always hear laughter along with the play of children. I can't help thinking that it is so in keeping with Tim's character.

I want to send you my heartfelt thanks for making this all possible. Many of Tim's friends and family visit this seat and remember him I know I do regularly, in the peace of the sunrise and moonlight. I know it has given us all a special place to be with our wonderful memories of Tim Also, I feel convinced this has

Salinity research funded cont'd

• hold educational programs so farmers could access and apply the research to their new ventures.

"We are thrilled to be part of a CRC chosen for such important research," John said.

"We will help protect existing industries and produce new products

for emerging industries, which will have a market in five years, and be widely adopted within 15 years."

The Director of the Co-operative Research Centre is Professor of Agriculture and Deputy Executive Dean at the University of WA's Philip Cocks.

helped in our grieving process.

I can not speak highly enough of the way Alan Sands, Miles Bovell and the CALM workers brought this all together. My thanks and best wishes go to you all.

Yours truly,
Leonie Christian.

Firefighters thanked

CALM firefighters are accustomed to receiving grateful thanks, but it does nothing but good for the rest of us to be reminded of the considerable time and effort these people volunteer on our behalf:

Here's one thank-you from CALM Wildlife Research Centre manager Grant Pearson to Perth District's fire co-ordinator Mike Cantelo:

On December 27, 2000, the WA Wildlife Research Centre was again threatened by a wildfire originating from the Water Authority property on the western side of the freeway. The last time a major wildfire threatened the Centre was in November 1994.

I wish to express the sincere thanks and appre-

ciation of staff and management at Woodvale for another sterling effort by your professional crews. The very short response time and the high quality of the response is a credit to you and your officers' organisation and preparedness.

It was especially reassuring to be told that, only a few minutes after the fire had started, a heavy-duty fire unit was already on its way to Woodvale. This, coupled with subsequent backup units from CALMfire and FESA, and a solid commitment from our own staff, contributed to the eventual control of the fire before there were major losses.

I should also comment on the high level of cooperation between your crews and other agencies such as the FESA. It is commendable that such high levels of efficiency and effectiveness can be attained during the fire-control process that must seem chaotic at times.

Please convey to all your staff our gratitude for their professionalism and a job well done.

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Invitation to volunteers

CALM volunteers who enjoy campground hosting are flocking to the South West Capes District in 2001—the International Year of the Volunteer.

As a consequence, the District's Parks and Visitor Services team has benefited enormously, with smoothly operating District campsites, and a minimum of hassles.

CALM forest ranger Dave Whitelaw said that CALM volunteers co-ordinator Marg Buckland had done a sterling job, organising uniforms, badges and helpful information for the campground hosts.

"Marg and the Park Policy and Tourism team at Kensington Headquarters held an introductory Volunteer Management Course, for CALM staff in November 2000, which highlighted the different roles that CALM volunteers play and the importance of their services to many of

CALM's operations," Dave said.

"Since undertaking the course, the Parks and Visitor Services team in the Capes District has worked closely with Marg to encourage people to volunteer as CALM campground hosts in the South-West over the busy summer to Easter season," he said.

"With ever-increasing numbers of visitors to the District's seven camp sites, the capacity for staff, rangers, and maintenance workers to service campsites properly as well as handle visitors' inquiries is continually stretched.

"Several of our forest campsites on the Blackwood and Margaret Rivers don't have a full-time ranger, but CALM volunteers in uniform help ensure campsites comply with the campground rules and leave their fees in the honour boxes provided."

The Leeuwin-Naturaliste National Park ranger-in-

charge for Boranup, Glenn Willmott has involved volunteers at Conto's campground for the first time in many years.

"Several years of hard work by Leeuwin-Naturaliste National Park rangers to reduce the 'rogue element' and reverse the poor reputation of the campsite has culminated in this year's decision to invite campground hosts to Conto's," Glenn said.

"The hosts are reporting positive feedback from campers who appreciate their availability to answer questions, and that they are also able to increase awareness of other offerings in and around the South West Capes District.

To Norm and Gina Gregory, Bob Walker, Bernadette Barkley and Nomad, Jim and Anne Bradshaw, Grantley and Dawn Hutchens, and Daniel Coffey—the South West Capes staff members salute you.



CALM overseer Terry Coffey (left) with campground hosts Gina and Norm Gregory. Photo by Dave Whitelaw

Carer's room now opened

A DEDICATED emergency carer's room is now up and functioning at CALM's Operational Headquarters in Kensington.

This followed the move of staff to the Forest Products Commission, when Director of Corporate Services John Byrne seized the opportunity to allocate space, and 'nailed' resources for this worthy purpose.

The room is available for staff use when they would otherwise need to stay away from work at short notice to care for family members or other dependants, for whose care they are responsible when normal day-care arrangements have fallen through.

The facility is *not* intended to provide for regular care requirements.

When not required as a carer's room, visiting CALM staff may use the facilities as a temporary office or quiet room.

The room is on the ground floor next to the cafeteria, is

by Gavin Wibrow

accessible to those with a disability, and is fully functional, both as an internet-connected office and as a place where family members of all ages who require care can be accommodated. It has a small fridge and microwave, plus a sofa/divan and a TV/video as well as a stand-alone PC for computer games.

Anyone wishing to use the facility as a carer's room must sign the Carer's Room Agreement, although this is not required for employees using the room as a temporary office.

A working party of volunteer staff 'checked out' other facilities before fitting out the room. Members included Jennifer Paterson and Melissa D'silva (who were the driving force), Stefan Dumitro, Warwick Boardman, Greg Beange, Hema Krishnan and Gavin Wibrow.

Melissa donated the material and Jennifer made up the cur-

tains. They also searched for equipment from other CALM people and arranged new purchases. Equipment scrounged/donated or on semi-permanent loan includes computers and fax (from Stefan Dumitro) and TV/video (from Estelle de San Miguel).

Enthusiastic supporters include John Grenfell, who expedited arrangements for much of the refurbishment; John Lee who connected the computer equipment and Bob Merson who provided invaluable assistance in completing those many important little jobs in fitting out such a room.

CALMpeople Services is responsible for co-ordinating the use of the facilities and room bookings, most of which can now be done via CALMpeople Services home page on CALMweb.

The room is on a six-month trial, following which an evaluation will be conducted to see what improvements can be introduced.

Recognition for volunteers

ONCE a week 92-year-old twins Barbara and Margaret Evans carefully drive from their home in Peppermint Grove to CALM's WA Herbarium in Kensington.

Recently their journey was to Yanchep National Park to receive an Outstanding Service Award for a decade of voluntary work for CALM.

The Evans sisters joined the Herbarium's volunteer program 10 years ago to preserve and mount plant specimens on boards.

Their award was one of CALM's three Outstanding Service Awards acknowledging the dedication of volunteers.

The other recipients were Stanley Webster, whose voluntary work at the Herbarium has made him one of Australia's leading acacia authorities, and Bob and Barbara Backhouse, Herbarium reference curators, who verify the names of its

12,500 specimens.

The recipients of these and other CALM awards (covering three years) are listed as follows: 1997-98:

- Volunteer of the Year for Visitor Services (information and interpretation): Eileen Croxford.

- Volunteer of the Year (wildlife research and management): Tom Hammond.

- Volunteer of the Year (recreation): David Secker.

- Outstanding Service: Bob and Barbara Backhouse, Kevin and Kath Follett (who travel each year from Gol Gol, NSW to be campground hosts in the Kimberleys).

1998-99:

- Volunteer of the Year for Visitor Services (information and interpretation): Kath Napier.

- Volunteer of the Year (wildlife research and management): Sally and Harry Kirby.

- Volunteer of the Year for Visitor Services (recreation): Gwen Plunkett.

- Outstanding Service Award: Stanley Webster.

1999-2000:

- Volunteer of the Year for Visitor Services (information and interpretation): Fred and Jean Hort.

- Volunteer of the Year (wildlife research and management): Carla Tassone.

- Volunteer of the Year for Visitor Services (recreation): John and Thelma Hannaby.

- Outstanding Service Award: Barbara and Margaret Evans.

The awards were a timely reminder that we should honour the 3600 CALM volunteers who freely give time to work for love of WA's natural environment. Last year alone, they contributed 121,000 hours, and in the past 10 years, they have contributed 670,000 hours to 360 projects.



Leigh Davis—a good sport

MEDALS as 'chest furniture' are fine when the occasion calls for it. It's what's to be done with them in the meantime that bedevils their owners.

For Australian Sports Medal winner Leigh Donegan Davis (above) of the GIS Section of Information Management Branch it's not a problem—he had his medals framed along with his citation.

Leigh is project leader, Remote Sensing Applications

Group, and to many CALM people he is the man who will go to any length to help them if they need aerial photographs, or advice about photogrammetry or remote sensing.

And it is this generosity of spirit in helping others that has been recognised by the award.

The Australian Sports Medal is one of the Australian Commonwealth's Honours Awards, and was created for Services to Sport. The award

recognises Leigh's volunteer work in promoting mature-age sport, as chairman of the State Advisory Committee.

Leigh is also a member of the WA Olympic Council. For many years before this, Leigh was a keen and successful yachtsman, his contributions in this sport culminating in his Presidency of the W.A. Yachting Association.

Well done, Leigh, and congratulations.

Photo by Sue McKenna.

Fire began and ended the year as bushfires struck southern and northern regions, punctuated in winter by CALMfire's firefighters being called to the United States to extend their expertise in fighting uncontrollable wildfires raging through mountainous terrain.

It was a year characterised by change, with the Conservation and Land Management Amendment Bill 1999 and Forest Products Bill 1999 passed by State Parliament.

It set the stage for the appointment of the Conservation Commission of WA (replacing the Lands and Forest Commission and the National Parks and Nature Conservation Authority), the creation of the Forest Products Commission and the separation of CALM's commercial and conservation responsibilities in native forests.

Ecotourism developments flourished, with management plans and draft management plans being drawn up to conserve and protect popular national parks and marine areas. The Valley of the Giants Tree Top Walk won more awards while the number of people walking the Bibbulmun Track doubled.

Translocations of native animals took place in Shark Bay, Kalbarri National Park, Dwellingup, New Norcia Dryandra Woodland, Pemberton, Harvey and Walpole.

JANUARY

CALM firefighters started work in the early hours of New Year's Day as bushfires raged through forest at Denmark, Nornalup and the Southern Forests region with a subsequent announcement that two water-bombing aircraft would be based in

by Sue McKenna & Jo-ann Lee

the South-West. In the ensuing days, firefighters were kept busy controlling fires in the Midwest and Jarrahdale.

By the end of the month, conditions reached the opposite end of the scale as heavy rainfall closed Walyunga, Fitzgerald River, Stokes and Cape Arid national parks.

Two men were charged with taking hollow stems from Crown land near Coolgardie to sell as didgeridoos, resulting in a new tagging system later in the year.

A grant was given to the historic Yanchep Inn at Yanchep National Park north of Perth to enhance its tourist potential.

FEBRUARY

A new timber recycling industry was established near Mundijong to turn marri into high quality kiln-dried flooring, woodchips and fibre board.

Collaboration between CALM, Edith Cowan University and the Yadgalah Aboriginal Corporation resulted in a dugong study to identify habitats and minimise environmental impacts.

The plantation forest review was released. A block of remnant Wheatbelt native vegetation was extended to protect rare vegetation and help control salinity. Announcements were made about salinity revegetation projects in nature reserves in the Narrogin area, including the rehabilitation of sand and gravel pits.

Bushfires hit Watheroo National Park in the Midwest.

MARCH

Final entries in the tourist icon competition for the karri forest in the

Nannup region came in. The public was also asked for suggestions about how to incorporate activities such as horseriding, abseiling, mountain-bike riding, bushwalking, sightseeing and wildflower viewing at the Darling Range National Park.

On International Forestry Day, WA foresters were praised for forest conservation and timber industry support.

The State's biggest exporters of woodchips, Wesfarmers, pledged to reduce native timber woodchip exports from 630,000 tonnes to 270,000 tonnes by 2002.

APRIL

The release of 20 bilbies at Dryandra Woodland near Narrogin marked the end of the reign of the European fox following extensive fox baiting under CALM's Return to Dryandra program.

Ecotourism (worth \$75 million a year in WA and growing) took another step forward with the creation of a new accreditation system to license tour operators' activities.

A \$240,000 Regional Forests Agreement program created employment opportunities for former timber workers.

Management plans for Yellagonga Regional Park—rich in Aboriginal and European culture—and the Swan Estuary Marine Park were released.

MAY

A forest discovery centre featuring public programs and forest activities for students and adults was opened at Wellington Dam in the Bunbury-Collie region.

A \$100,000 visitor centre was officially opened at Purnululu National Park in the Kimberley while visitor facilities at Mirima National Park were improved with the



Refinements in the development of a fertility-control vaccine for use in baits was hailed as a significant breakthrough by CALM staff involved in the fight to control feral animals. Pictured in Dwellingup forest is CALM research scientist Kathy Himbeck with an echidna, one of the native species expected to thrive following the use of this vaccine. Photo by Peter Garside, courtesy Alcoa World Alumina Australia

construction of a lookout trail staircase. At Parry Lagoons Nature Reserve a bird-hide and elevated walkway were built.

Budget allocations of \$300,000 to develop Gnanagara Park near Perth and \$2 million to implement the recommendations of the Ferguson Report into forest management were announced. Another \$3.4 million was allocated for capital works, \$4.5 million for roads and facilities and \$1.3 million for fire fighting fleet replacement.

Tammar wallabies were reintroduced into State forest near Dwellingup as part of Western Shield.

An announcement was made to expand the CALM tree nursery at Manjimup, enabling 41.5 million trees to be planted on cleared farmland. The

expansion will help to battle salinity.

JUNE

June saw WA's conservation cadet unit, the CALM Bush Rangers, highly commended in the Young Australian Award for Environmental Achievement in Schools. The Bush Ranger concept is part of CALM's initiative to create conservation awareness among young people.

Children were involved in ceremonies to celebrate Arbor Day by planting thousands of trees.

The creation of Wellington National Park was announced. The 4200-ha park comprises land surrounding the Wellington Dam near Collie. Arrangements were made for the return of the native mammal, the woylie, to the area.

JULY

The Goldfields Woodland National Park was officially gazetted as part

of a new 152,000-ha conservation reserve.

CALM conducted planned burns in the Gnanagara, Pinjar and Yanchep pine plantations to reduce the buildup of pine needles on the forest floor that in summer provides fuel for wildfires.

The longest total lunar eclipse for the next 1000 years happened on July 16. The moon remained completely in the Earth's shadow for 107 minutes. It was watched by many people throughout WA with expert assistance from CALM's Observatory staff.

AUGUST

Two national parks and four conservation parks were created.

They were Cane River Conservation Park, 100 km south-east of Onslow, and, in the Kimberley, the Mitchell River National Park, Lawley River National Park, Camp Creek Conservation Park, Laterite Conservation

Park and King Leopold Ranges Conservation Park.

Cane River Conservation Park includes landforms and vegetation not found in other conservation reserves in the Pilbara.

The Kimberley national parks and conservation reserves cover 540,000 ha and feature remnant rair forest, gorges and abundant wildlife. The Mitchell River National Park is the world's richest area for mangrove birds and takes in the stunningly beautiful Mitchell Falls.

A management plan for the Jurabi and Bundegi coastal parks near Exmouth and the Muiron Island Reserves off the North West Cape was announced.

Yanchep National Park's redevelopment began with the upgrading of the Yanchep Inn and the construction of new tea-rooms and a cafe.

Woylies and chuditch were released in the Kalbarri National Park as part of Western Shield.



CALM Bush Rangers continued to take on board CALM's animal and plant conservation message—much of it in a hands-on manner. Here, the Bush Rangers from Mount Lawley Senior High School are building a bats' nest, with encouragement (and a drill at the ready) from their unit leader Andrew Paul (left). They are Sarah MacFarlane, Gail Myers-Wright and Fern Burgess. Photo by Bronwyn Humphreys



Winner of the Volunteer of the Year Award for Recreation was Gwen Plunkett (right). As a CALM volunteer, she regularly 'walks' the Northern Terminus of the Bibbulmun Track, inspecting facilities for possible maintenance work. Gwen also works with the Friends of Bibbulmun Track, whose executive officer Becky Shrimpton (left) was on hand to congratulate Gwen at the award ceremony in December (see p.3). Photo by Ernie McLintock



Playing a didgeridoo is thirsty work for CALM volunteer Cedric Jacobs (left), pictured with Visitor Services officer Wayne Dekker. They were photographed at the new heart of Yanchep National Park—a Nyoongar Wangi Mia ('talking place'). It is the axis of several up-graded facilities that include new tearooms and refurbishment of the Yanchep Inn—all officially opened in September. Photo by Ernie McLintock

Rare western swamp tortoises were released into wetlands near New Norcia in an attempt to save them from extinction.

Perth Observatory opened its Millennium Dome housing a computer-controlled Meade telescope.

Six CALM forest fire managers went to the United States to help fight fires burning uncontrollably across the country. They were part of an 80-strong contingent from Australia and New Zealand, dispatched at the request of US authorities. The following month CALM's fire manager Rick Sneeuwjagt went to the US to take control of the Australasian team at the special request of senior US firefighters.

An agreement on guidelines for the development of the WA timber industry was reached, and a report on the development strategy released.

SEPTEMBER

Four CALM field officers acted as volunteers during the Olympics.

CALM officers at Wanneroo received a work safety award for working in forests 12 months without a lost time incident.

As part of the Return to Dryandra and Western Shield projects, western barred bandicoots, extinct on mainland Australia until recently, were rein-

troduced to Dryandra Woodland. Western barred bandicoots were translocated from Bernier and Dorre Islands in the World Heritage-listed Shark Bay area to Roxby Downs in a joint project with the South Australian Government.

Woylies and bilbies were released into Francois Peron National Park in the Shark Bay area under Western Shield's Project Eden initiative.

The public was asked for help to prepare a plan to minimise the impact of anchors and boat moorings in Ningaloo Marine Park in the water around Coral Bay.

A wangi mia, (Aboriginal 'talking place'), was officially opened in Yanchep National Park to focus on the park's Aboriginal cultural heritage.

CALM's fire managers returned from the US to a big Perth welcome.

OCTOBER

An indicative management plan for the Jurien Bay Marine Park was released to collect public comment about the establishment of a world-class marine conservation network off the WA coast. The Nanga pastoral lease was purchased to extend the area of the World heritage-listed Shark Bay region.

Land running along the banks of the Blackwood

River was purchased to provide a safe haven for the critically endangered white-bellied frog.

A book cataloguing every species of flora known to exist in WA was launched at Kings Park. Titled *The Western Australian Flora—A Descriptive Catalogue*, it lists plants' botanical history and flowering months as well as other useful information.

The National Parks and Nature Conservation Authority held its final meeting before the new body, the Conservation Commission of WA, took up office.

Lightning in the Stirling Ranges caused bushfires, which resulted in part of the Stirling Range National Park being closed. The fires burnt 30,000 ha, fueled by gusting northerly and westerly winds and high temperatures.

And last but not least, it was the magpie season, snake wake-up season and the season to watch out for native animals crossing busy roads.

NOVEMBER

The Conservation Commission of WA met for the first time. It is an independent body in which all conservation lands—national parks, nature reserves, conservation parks and State forests—are vested.

The endangered west-

ern bristlebird was translocated from Albany to coastal shrubland near Walpole. The translocated birds joined a group released last year to repopulate their former habitats.

Three wetlands areas were nominated for listing under an international convention on wetlands known as the Ramsar Convention. They are Becher Point near Rockingham, Lake Gore near Esperance and the Muir-Byenup complex east of Manjimup. Four existing Ramsar sites—the Ord River Floodplain, the Peel-Yalgorup system, Toolibin Lake east of Narrogin and the Vasse-Wonnerup system near Busselton—were extended.

Four-wheel-drive organisations had the opportunity to become more involved with CALM when they signed a memorandum of understanding which will see joint management and maintenance of CALM tracks.

WA and CALM's WA Herbarium became part of the Millennium Seed Bank flora conservation project which, through the British Government's Millennium Commission, aims to collect and conserve 10 per cent of the world's seed-bearing plants, mainly from the world's drylands, by 2010. More than \$800,000 was allocated from the British Government to CALM, and the Botanic Gardens and Parks Authority to fund the WA component during the next 10 years.

The first batch of woylies was released in the Pemberton District, a former habitat before its decimation by the European fox.

CALM introduced a new tagging and certification system to combat the illegal cutting of didgeridoo stems on conservation lands.

John Forrest National

Park celebrated its centenary with celebrations marking our forebears' wisdom in setting aside land for public enjoyment. The events began a year set aside as the Centenary of WA National Parks to honour our pioneers' foresight.

The Valley of the Giants Tree Top Walk was declared the most significant regional attraction in the national tourism awards.

DECEMBER

Western Shield received a welcome boost from industry when mining giant Tiwest Joint Venture announced it would contribute \$300,000 to bait 100,000 hectares in the arid Midwest. The five-year sponsorship will control feral foxes and cats and give reintroduced native wildlife a better chance of survival.

In Harvey, 40 woylies were re-introduced into

fox-baited areas where they had once existed.

Malleefowl on Peron Peninsula—introduced as part of Project Eden—were found to be successfully breeding, with the discovery of distinctive mound nests by CALM staff.

Volunteers were acknowledged at a ceremony to mark their dedication to CALM in jobs such as herbarium curators, campground hosts, flora researchers, track coordinators, publishers and flora cataloguers. CALM has 3600 volunteers who this year clocked up more than 120,000 hours.

WILDCARE, a CALM co-ordinated service for the public to report sick, injured and orphaned native animals, was launched. Operated by volunteers, it was created so people had an easy way of getting help for animals.

In the fight against salinity, a 140,000 ha area

between Dalwallinu and Coorow was made a natural diversity recovery catchment.

The public was asked to comment on a set of draft regulations allowing people to keep reptiles and frogs as pets, with the exception of crocodiles and marine turtles.

The year ended, as it began, with fires burning across the Great Southern and South Coastal Regions. During a hot month, fires struck Two Peoples Bay, Manjimup, Kirup, Collie, Margaret River, Bickley, Moore River, Woodvale and forest near Barton's Mill Prison on the outskirts of Perth. Aerial fire-fighting operations were expanded from Perth and the South West to the Great Southern, Avon Valley and Northern Sandplains for more effective fire fighting and greater protection from inevitable summer wildfires.



Cyclones, rescuing flood-stranded native animals, capturing and relocating dangerous beasts on the loose—CALM's Kimberley staff took them all in their stride. Here, assistant operations officer Brett Lewis and wildlife officer Ben Tannock have captured a young saltwater crocodile, found in Lake Kununurra some 30 km below the Argyle Dam wall. The animal was later transferred to the Wyndham Crocodile Farm. Photo by Shad Nixon



CALM's Perth Observatory technical manager Arie Verveer was responsible for the management and much of the logistics involved in the erection of a new building (officially opened in August) to house this Meade 40-cm aperture Schmidt-Cassegrain telescope. At present this telescope is mainly used by the public to view faint celestial objects during the Observatory's very popular star-viewing nights. Photo by Ernie McLintock

Carolyn's off to Queensland

CALM marine conservation officer Carolyn Williams has left Exmouth District to take on a new job in Queensland.

During her four years in Exmouth, Carolyn was responsible for a wide range of functions associated with marine park and island management. These included supervising CALM's role in the whale shark interaction industry, and supervising the local marine turtle monitoring program.

Carolyn was instrumental in securing a new patrol vessel for Ningaloo Marine Park and significantly increased CALM's presence in the Marine Park and surrounding waters. Her ever-pleasant demeanor and professional approach to her duties made Carolyn a highly respected figure around Exmouth.

Carolyn is taking up a senior position with the Queensland National Parks and Wildlife Service, based at Airlie Beach.

She will be involved in a variety of marine conservation projects and commercial activities around the Whitsunday Islands.

She and husband Tim are well known around Exmouth, and took part in many of the town's sporting club activities. They thoroughly enjoyed being in Exmouth, and left for their new, somewhat exotic destination with some reluctance.

Tim and Carolyn showed their true spirit when their home and many of their possessions were completely destroyed by Cyclone Vance. They just 'soldiered on' in their usual cheery, uncomplaining manner.

The beaching of a pod of killer whales was another memorable incident. It created a great deal of anxiety and concern among the local community, and attracted widespread media attention.

Carolyn's tireless efforts over two days and nights helped some of those unfortunate animals return to the open sea. She has a sound knowledge of marine creatures and much empathy with them. Many a stranded turtle owes its present existence to the 'outside normal hours' efforts of Carolyn and former offsider Adam Meyer.

Carolyn will be sorely missed by her ex-colleagues in Exmouth, but they realise that staff turnover is a fact of life.

CALM will soon advertise for a replacement officer and hopefully, will be successful in finding another person with that balance of high-level knowledge of the marine environment and sound practical skills. Meanwhile, Adam Meyer will fill the position of Marine Conservation Officer in the Exmouth District.



Judy and a delicately formed, barely visible orchid (yes, it is there, in front of her knee).
Photo by Greg Durell

Orchid to bear Judy's name

BROOKTON nature enthusiast and CALM Flora volunteer Judy Williams has done it again!

She has defied the odds by finding a new species of spider orchid on a small nature reserve near Brookton.

An avid native orchid buff, Judy had been eyeing a small patch of spider orchids, convinced that they were different, and not being able to find the orchid in reference books, Judy decided it

was time to call in the experts.

Orchid enthusiasts John and Helen Start were only too pleased to help Judy with its identification, and believed that the orchid was probably a new species.

Helen and John took a flowering sample to Perth for confirmation, where CALM's orchid botanist Andrew Brown, confirmed that a new spider orchid had indeed been discovered.

The species is intended to

be named *Caladenia williamseana* ms. in honour of Judy's many years' work in flora conservation.

In 1992, Judy was the first person to spot the presumed extinct York gum nancy (*Wurmbea drummondii*), not officially seen for more than 30 years.

Her efforts have helped others to discover more populations of this plant which is now commonly recognised from Dongara to Narrogin.



Carolyn with husband Tim.

Sandalwood—a lucrative solution to salinity problem

TRIAL plantings of sandalwood (*Santalum spicatum*) to promote revegetation in the Wheatbelt, have reached their first harvest, yielding 130 trees.

CALM established the trial plantation in 1987 to demonstrate to local farmers that it is possible to plant sandalwood and see a financial return in one's lifetime.

The trial harvest took place at Northampton, on a property owned by Roy Routledge who, together with CALM's then sandalwood business unit manager Peter Jones and forester Ben Sawyer, carried out the task.

One of the biggest barriers in persuading farmers to plant sandalwood on a large scale as a crop is the misconception that it takes a long time to grow.

In the semi-arid pastoral regions, sandalwood requires 50 to 100 years to reach commercial size, but given the right conditions in the medium rainfall areas of the Wheatbelt, sandalwood can reach the same size within 20 years.

Sandalwood is a root hemiparasite, meaning it can produce its own photosynthetic products but is dependent on host trees for some of its nutrients and water.

It needs to grow next to suitable host trees. Fine feeder roots attach to host roots through a cup-shaped organ called a haustorium. The haus-

by Pat Ryan
& Jon Brand

torium can be up to two centimetres in length, and a single tree can produce hundreds of haustoria.

At the Northampton site, CALM planted jam (*Acacia acuminata*) seedlings in 1987, then seeded sandalwood next to each jam sapling in 1988 and 1989.

The sandalwood seed germinated quite readily and most germinants survived and prospered. However, the sandalwood to host ratio (1:1) was too high, which caused most of the jams to die between age five and 10 years. An individual sandalwood tree requires at least two to three host trees to ensure good host survival.

Due to the low number of remaining host trees, it was decided that most of the sandalwood trees should be harvested to determine the amount of commercial wood at age 12 years.

The exciting aspect of the Northampton trial was that the sandalwood had produced heartwood and oil at an early age and was already a marketable product.

The 0.8-hectare plot produced 520 kg of commercial timber, worth approximately \$1200. Given the correct host ratio, the returns from future sandalwood plantations are expected to be far greater.



Peter Jones (near ute) and Ben Sawyer survey one of their loads of sandalwood. Photo by Jon Brand

Bluff Knoll fire no match for CALM stalwarts

A LOT of hard work goes on continuously and without fuss to maintain facilities used by visitors to our national parks and reserves.

Albany District parks manager Martin Lloyd tells how over a three-week period following the highly destructive Stirling Range wildfire, the Bluff Knoll footpath was transformed by a band of CALM stalwarts.

"They slogged away, some days with little or no protection from the searing heat," Martin said.

"From day one, I expected the task to be onerous for all concerned, but was astonished to find the CALM crew firing along with bucketloads of enthusiasm and energy, regardless of the conditions.

"At each of my site visits, I found, not only commitment and pride, but good humour—not easy for most mortals to main-

tain when carrying tools and materials up a steep mountain.

"Using handtools, they laid waterbars and reinforced large sections of the path that had been badly damaged and lay exposed.

"Starting at 6.00 a.m., they worked well beyond the normal eight-hour day."

Commitment

Martin said that without their effort and commitment, the Bluff Knoll footpath would not have been open to the public by the 11 December deadline.

"They can be justifiably satisfied that their hard work went a long way indeed to protect and enhance one of this State's most valuable and popular public assets," Martin said.

"Already, our rangers are receiving positive feedback from visitors.

"Well done, guys—and thanks."



Taking a short break before resuming their toil are, clockwise from left foreground Peter Richardson, Stephen Keen, Geoff Harnett, Martin Lloyd, Allan Clarke and Bill Beach. Centre: David Adams (kneeling) and, seated with hat in hand, Dave Pickett. Photo by John Watson



CBRs visit Gallipoli

CALM Bush Ranger Chenelle Davies (above), is one of four West Australian cadets selected by The Returned & Services League of Australia and the Office of Youth Affairs to visit World War I battle sites in France and Gallipoli in April (see Letters, page 2).

A captioned photograph of another of the finalists—CALM Bush Ranger unit leader Lisa Rogowsky—appeared on page 4 of CALM NEWS July–August, 2000 issue.

Like Chenelle, Lisa is with the CALM Bush Rangers at Como Senior High School, which, according to CALM Bush Rangers co-ordinator Bronwyn Humphreys is a highly active unit, with both Lisa and Chenelle involved in all aspects of its activities.

"Last year, the unit was involved in the construction of a native garden walk at the school," Bronwyn said.

"The rangers also worked with Wilson Wetland Action Group, and planting at Kings Park-Mt Eliza Escarpment Rehabilitation, as well as collecting for Legacy Badge Day.

"In addition, the unit took part in several camps including the inaugural Swan Regional Camp, making traditional tools with CALM's Aboriginal Unit, also caving, marine community monitoring, and orienteering; Merribrook Adventure Camp, which included teamwork activities and leadership challenges; and Rottneest Island Marine Conservation Camp.

"Only four cadets and two adults will be going on this wonderful trip to World War I battle sites in France and Gallipoli—and CALM Bush Rangers represent one-third of the contingent! It's a great honour and an experience they'll almost certainly value for the rest of their lives."

Women in CALM No. 6

WHO can name the CALM woman who was once a jockey and rode with the Imperial Ethiopian Jockey Club?

Would you have said it was Elizabeth (Liz) Moore?

But this community education officer is full of surprises. She has a passion for giraffes, for example, and once worked in community education at Perth Zoo, "where I had the chance to get close to a giraffe again". (The mind boggles! Did she hug its knees?)

Liz was raised in Kenya, where she says she enjoyed a 'wild childhood'.

"Our house had no electricity, and I rarely wore shoes," Liz says.

"I spent my formative years in the forests and plains at the base of Mt Kenya, amid an abundance of wildlife.

"But in the last 10 years I was there, I saw the impact of the human population explosion destroying the land and its wildlife, and this influenced me to study and seek work in nature conservation.

"Living and camping in the Northern Frontier of Kenya and studying for a Master of Science on the ecology of the reticulated giraffe was a fascinating start to this work."

After working on the Cockburn Sound environmental study in the late 1970s, Liz found that having children diverted her from work in Environmental Science to that of Environmental Education (hence her stint with Perth Zoo).

"I wanted to find a way that my children could become aware of the natural environment and the importance of conserving it," she said.

Liz began part-time contract work with CALM in 1993, leading excursions for the Exploring The Hills Forest environmental education programs in Mundaring.

Since then she has developed new programs, prepared resources, and run professional development training for

teachers. She also manages a team of contractors who lead nature-based activities for children from early childhood to Year 12.

Liz continues to manage the Exploring The Hills Forest Programs, State-wide Western Shield schools pro-

grams and is developing others for Wellington Discovery Forest.

She was project leader for the development of the CALM Bush Ranger manuals—a challenge in a tight time frame.

Liz lives with husband

Peter Moore, and their two daughters: Kate (21) and Carissa (19). Among her other

off-duty interests, Liz lists travel to the third world, "it reminds me of the imbalances in this world and the need for all of us to curb our consumption levels," Liz said.



Liz Moore. Photo by Verna Costello

CBRs win accreditation

TWELVE CALM Bush Rangers and five Instructors from four schools have successfully completed a nationally accredited Fire Awareness course.

This is the second time CALMfire has offered this course, which was held at the Dwellingup Training Centre.

The Bush Rangers successfully completed a written exam and a practical burn around the Dwellingup Forest Heritage Centre. They made fire breaks, lit the fires, monitored the burn and then mopped up.

Another important component of the course that the rangers completed was a biodiversity study of Dwellingup

by Bronwyn Humphreys

ecosystems with varying fire histories.

CALM Bush Rangers and their instructors completing the course were Simon Martin and Phil Cooper and instructor Terry Yates from Rossmoyne SHS; Ricky Pitcher, Whitney Boardman and Colin Hansen, and instructors Glenda and Paul Huisman from Roleystone SHS; Tony Flinn, Brendon Anthony from Newton Moore SHS; Louisa Coppens and Matthew Walsh, and instructor Israel Austin from Ursula Frayne Catholic College; Ben Marson, Jasmine Hastie and Leah Moore and instructor

Carleen Edwards from John Septimus Roe Anglican Community School.

The Dwellingup District fire fighters' mobile canteen, affectionately dubbed 'Dwellfed', was also put to good use, and CALM health and fitness instructor Linda Gilbert set the rangers a series of activities to demonstrate the importance of managing fire fighters' health.

The CALM Bush Rangers would like to thank Linda, as well as senior fire training officer Ross Meade, CALMfire principal fire training officer David Rawet, and Dwellingup District forest ranger (now Katanning reserves officer) Kris Narducci for making the course possible.



CALM Bush Ranger Louisa Coppens from the Ursula Frayne Catholic College Unit obviously enjoys the heat! Photo by Bronwyn Humphreys



John amid the 42 balloons. Photo by Sue McKenna

A hot air greeting for John

TO say that John Hunter's 'flabber was gasted' when he showed up at the office on Friday December 15, would be a gross understatement.

Inflated the evening before by the powerful lungs of several colleagues, 42 balloons—one for each year of service with the Government—filled and overflowed from John's office, and met him at the door as he arrived to begin another day's toil.

John is public affairs officer with the Strategic Development and Corporate Affairs Division, located at 'the other Crawley office' in Cygnet Hall (popularly known as The Boatshed).

He joined the Public Works Department as a junior clerk in 1958, cutting his teeth on duties relating to mechanical and plant engineering programs such as construction of the first Narrows Bridge and the Ord River Dam.

In 1972, John joined the WA Fisheries and Wildlife Department as assistant public relations officer, and in 1979, he moved to the National Parks Authority as its publicity and publications officer. He was among those who transferred when that Department was absorbed by CALM in 1985.

We probably could have filled all eight pages

of CALM NEWS with the humorous, and sometimes bizarre occurrences John has witnessed or experienced first hand. Here are some examples:

One of John's current tasks is to respond to emails arriving via NatureBase. One was from the owner of an 'Arts and Nature' company in Dubai, United Arab Emirates, asking if we would sell or rent live penguins to him for a month-long 'event' in July.

Another emailed message was from a man in Haifa, Israel, pleading for someone to look for his son who was motorbiking solo in the Kimberley—and his parents had not heard from him for two weeks. John promptly contacted the Police, and the young man was soon located via records at backpackers' hostels. He had been so besotted with the country, he forgot his regular 'phone home' duties.

One of John's hairiest experiences occurred when a resident tramp was soaked by Matilda Bay sprinklers. Armed with a broken bottle, the enraged man attacked a national park ranger, and John, with three burley 'coppers', gave pursuit. The culprit was caught as he clung to a Swan River pylon—after sinking a rescue boat *and* its crew. The crew had to swim to shore, dragging their quarry behind them.

Turtle-tagging on Muiron

A SMALL team of CALM volunteers, supported by the Department's marine reserves officer Adam Meyer and operations officer Arvid Hogstrom, has been engaged in an annual turtle-tagging program.

Volunteers David Waayers and Patsy Wootton came from Perth while Michelle O'Mara and Peter (Sal) Salinovich travelled down from Karratha to join the program.

Much of the tagging program has focused on the Muiron Islands, as there are very small numbers of turtles nesting on our mainland beaches this year.

Scientists had predicted a smaller number of turtles this year and this is thought to be related to higher seawater temperatures and the poor physical condition of potential breeding animals.

The volunteers were trans-

ported to their camp on South Muiron Island on Jeff Bubb's charter vessel *Ocean Quest*, backed up by CALM's patrol vessel *Ningaloo One*.

Very hot conditions prevailed during daylight hours, with heavy falls of rain occurring mostly at night. Needless to say, the volunteers and CALM officers experienced damp and uncomfortable conditions throughout the tagging program, but witnessed some spectacular lightning shows.

A typical night of tagging saw the volunteers patrolling the beaches two hours before high tide and continuing the search until two hours after high tide.

The beaches on the Muiron Islands are important loggerhead turtle nesting sites and they were the species mostly tagged this nesting season.

Of the forty-three turtles

tagged, thirty-five were loggerheads and the remainder were green turtles. The relatively small number of 'greens' made it easier for the loggerheads to find suitable nesting sites.

Twenty-eight of the total had not been tagged previously and the other fifteen were returning migrants.

The volunteers also explored much of the South Muiron Island, taking notes on the indigenous wildlife, including many lizards, migratory birds and ospreys.

They even made friends with a small python, and helped two groups of turtle hatchlings to avoid predators as they made their way to the sea.

In spite of the sometimes difficult living conditions, the volunteer tagging team emerged in great spirits, and expressed an eagerness to take part in the program again.



CALM volunteers Patsy Wootton and Michelle O'Mara inserting a tag during their stay on South Muiron Island.

Norm's garden a memorial

NORM Maxwell was not the sort of person to leave a job half completed. So when he died before he could finish the new garden beds at CALM's Pemberton office, his colleagues decided they would take over the job and create a memorial garden.

Norm died unexpectedly from an asthma attack just over 12 months ago. He had worked for CALM and the Forests Department since 1964, with a short break working at the timber mill in Pimelea.

He left work on a Friday afternoon with plans to finish the edging around the new beds on the following Monday, but died on the Saturday.

Tom Lindley, who worked with Norm since the mid-1960s, took over the job of establishing the flower beds and maintaining the garden, with help from Phil Keeble and others.

Many of the staff helped plan the memorial garden and a collection raised money to buy a plaque and rose bushes.

"Norm's garden" is now marked with a brass plaque strategically located to stop people cutting across the corner of the flower bed on their way to the back door of the office—a habit that particularly annoyed Norm.

The garden was dedicated on 5 February by CALM staff and members of Norm's family.



Norm Maxwell, a well liked and respected colleague, fondly remembered by all his workmates at Pemberton.