

n late spring, the Leda Nature Reserve in Kwinana, a southern suburb of Perth, is at its most profuse. Kangaroo paws (Anigozanthos manglesii) and orchids—cow slips (Caladenia flava), common donkey orchids (Diuris corumbosa), bee orchids (D. laxiflora) and pink fairies (C. latifolia)—are in abundance. Covering 438 hectares and larger than Kings Park, the reserve is recognised for its diverse plant life, including tuart (Eucalyptus gomphocephala) forest and jarrah (E. marginata) and banksia (Banksia attentuata) woodlands. Animals such as the guenda or southern brown bandicoot (Isoodon obesulus fusciventer) and the western brush wallaby (Macropus irma) also find a haven there.

But the apparent vigour masks the fragility of a land at risk. The bushland is under threat from frequent fire, dieback and vehicle damage.

To manage the reserve and to find a balance between its conservation needs and recreational uses, a partnership has been formed between Edison Mission Energy Company, owners of a local power cogeneration plant, the Town of Kwinana and the Department of Conservation and Land Management (CALM). Using ongoing funds from Edison Mission, a committee, with community assistance, helps provide direction on how funds are spent.



Projects have included strategic fencing and gates, seed collection, a botanical survey and publication of a brochure.

#### WHY FORM PARTNERSHIPS?

In Western Australia, CALM has the task of managing a vast estate of more than 21 million hectares, comprising an extraordinarily diverse range of land and marine forms, habitats, plants and animals. CALM must balance the different needs of tourism and recreation, land management and landcare, marine

Previous page Main: A CALM officer takes a moment to reflect on the stunning views from Mt Bruce in Karijini National Park, during the assessment of suitable sites for a new trail to access the summit. With the assistance of the Commonwealth Government and industry partner Hamersley Iron, this trail is now completed. Photo - Richard Hammond Insets from top: Gilbert's potaroo. Photo -- Jiri Lochman Trevor Walley demonstrates digging for vams at Walvunga National Park. Photo - Dennis Sarson/Lochman Transparencies Common donkey orchid. Photo - Jiri Lochman

Left: Leda Nature Reserve provides a haven for the western brush wallaby (Macopus irma). The support of industry partner Edison Mission assists CALM in managing this reserve.

Photo – Wade Hughes/Lochman Transparencies

management, educational activities and the provision of information.

These responsibilities are great, greater than CALM can meet through government funding alone. There is also a heightened community awareness of the need to protect the environment and a growing desire by people from WA and beyond to visit and enjoy the parks, reserves and forests. To that end, CALM looks to conservation partners and sponsors for assistance.

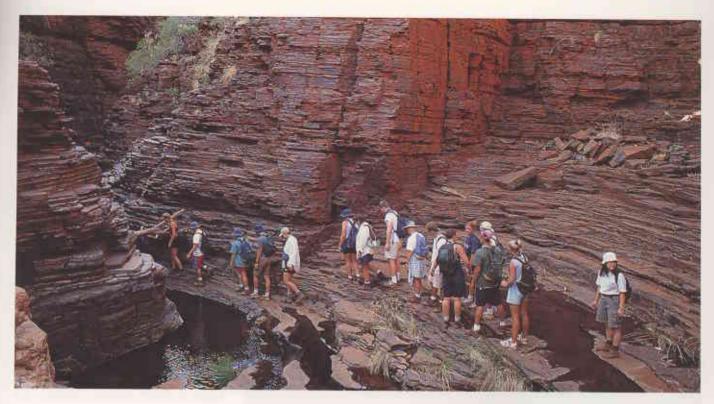
CALM is proud of its many partnerships. Here we acknowledge a number of those projects which represent an indicative sample of the work and activities for which CALM seeks support from the community.

Whatever the magnitude, the contribution—time, products, services or funding—is directed towards clear goals and is of immense value.

### ECOTOURISM—A GROWTH INDUSTRY

Current research has confirmed that ecotourism is an expanding industry; there were more than eight million visitors to the State's parks and reserves last year. CALM is committed to providing facilities that enhance the visitor's experience while minimising

Left: In spring, Western Australia's floral emblem, the red and green kangaroo paw (Anigozanthus manglesii), flowers profusely at Leda Nature Reserve. Photo – Greg Harold



the impact on the environment. Such facilities include visitor centres, shelters and toilets, car parks, picnic and camping areas, interpretation signage and trails.

Partnerships and sponsorships have a major role in helping to provide such assets.

With assistance from the Commonwealth Government and the local mining company Hamersley Iron, such a venture was carried out on WA's second highest mountain, Mt Bruce in Karijini National Park, in the Pilbara Region. The existing walk trail was badly eroded and inaccessible to all but the very fit and agile. It was realigned and replaced with one that provides stunning views and safe walking opportunities, while limiting the environmental impact and being sensitive to the local Aboriginal people.

CALM provided planning, design, materials, transport and supervision, and was responsible for the overall standard of the trail. The Commonwealth Department of Industry, Science and Tourism provided funding through a national ecotourism grant, and the Australian Trust for Conservation Volunteers (ATCV) provided a work force of 59 people, both volunteers and paid personnel. Environment Australia assisted with a grant for Aboriginal people to construct the car park and place bollards at the base of the mountain. Hamersley Iron arranged earthworks for the car park,



constructed the first 250 metres of the walk trail and assisted with design and materials to improve a cliff section of the walk. They later contributed additional funding for maintenance by ATCV.

Inspired by the success of the Mt Bruce walk trail, Hamersley Iron co-sponsored the development of the Weano Recreation Area. Two new lookouts and a day-use area were developed with assistance from Hamersley's Aboriginal Training and Liaison section, Hamersley Exploration, the Commonwealth Government and CALM.

### HELPING CALM'S WILDLIFE EFFORTS

A vital area of CALM's work concerns research, management, rehabilitation of endangered plants Top: Assistance from the Commonwealth government and industry partner Hamersley Iron has enhanced visitor facilities in Karijini National Park. Photo – Dennis Sarson/Lochman Transparencies

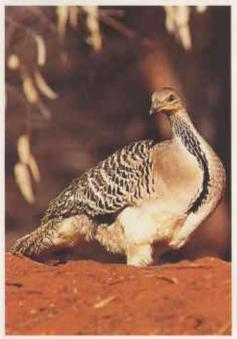
Above: Educating people through interpretation. This sign, 'Striking the Balance', at Mt Bruce informs people of the challenge in balancing conservation needs and the development of non-renewable resources.

Photo – Richard Hammond

and animals, dieback control and management, feral pest research and management, and ecological community conservation projects.

One particular success story is CALM's partnership with BankWest. Approximately \$20,000 is collected





annually through customer use of the BankWest LANDSCOPE Conservation Visa Card and is allocated to projects relating to endangered species and ecological communities. Over the past two years, CALM has been able to fund many small projects across the State. These include the fencing of Pumpkin Spring, in the Kimberley, to protect the endangered Gouldian finch; the production of colour posters of 29 species of critically endangered plants: the purchase of equipment to assist in monitoring Australia's most endangered native animal, Gilbert's potoroo; and a search for the threatened Lancelin Island skink.

Opportunities can also arise during the course of an organisation's normal business. While carrying out a largescale seismic survey in the Canning Basin area of the Great Sandy Desert, in liaison with CALM staff, Shell Australia discovered a healthy bilby population. This was particularly exciting news as CALM manages an extensive bilby captive breeding program as part of Western Shield, the feral control and threatened fauna recovery program (see *LANDSCOPE*, Spring 1998). Shell provided financial and logistical support for CALM staff to visit the area and assess the population. Several animals were captured and added to the breeding stock at Peron Peninsula, Shark Bay.

Community groups also assist in wildlife recovery. The malleefowl, a large bird known for building a remarkable incubation mound for its eggs and listed as a vulnerable species. is such an example. A national team has been formed to work towards its recovery. The Goldfields Naturalists' Club is one of the community groups and, with some funding, they combined their efforts with CALM and the World Wide Fund for Nature and Green Corps to assist in a six-month research and survey program at various sites in WA. Much of the work was conducted on CALM-managed lands, and the Group is committed to assisting in the long-term monitoring of the species.

#### A VISION FOR THE FUTURE

The success of Western Shield has demonstrated that major, coordinated initiatives can revitalise and enhance nature conservation work. Now in its third year, Western Shield represents the world's biggest campaign against feral predators, to save native animals

Top left: Funds from the BankWest LANDSCOPE Conservation Visa Card have assisted CALM in protecting the habitat of Pumpkin Spring, a haven for the endangered Gouldian finch.

Photo – Hans & Judy Beste/Lochman Transparencies

Centre left: A concerted effort between government, conservation groups, community groups and CALM is assisting the conservation of the vulnerable malleefowl (Leipoa ocellata). Photo – Sandra McKenzie

Left: During the malleefowl survey, Green Corps team members discovered a small and rather unusual malleefowl mound at Lake Magenta. Photo – Sandra McKenzie

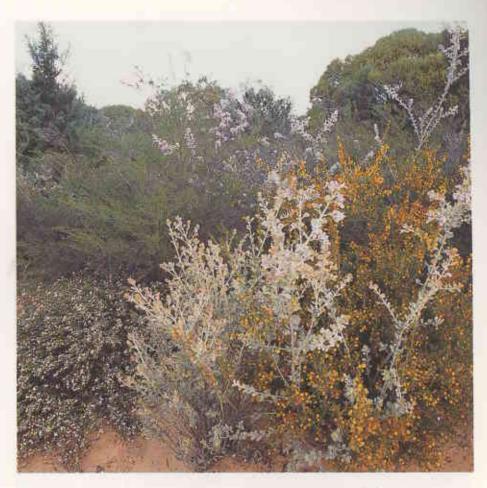


and return them to areas where they once thrived. There have been numerous successful species reintroductions. These include the tammar wallaby (Macropus eugenii) to Batalling Forest, western ring-tail possum (Pseudocherus occidentalis) to Lane Poole Conservation Park, Yalgorup National Park and Leschenault Conservation Park, the malleefowl (Leipoa ocellata) to François Peron National Park, and many others (see LANDSCOPE, Spring 1998). Corporate support has been vital to the success of the program. The principal sponsors of Western Shield are Alcoa of Australia, Cable Sands (WA) Pty Ltd and Westralian Sands Ptv Ltd. In addition. there have been numerous significant contributions from a range of corporate community partners LANDSCOPE, Winter 1996, Summer 1997-98, Spring 1998, Autumn 1998, Autumn 1999). Recently, the State Government and CALM launched a similar initiative-Western Everlasting -for the conservation of WA's threatened plant communities. Strengthened efforts will be made to control the devastating effects of dieback which are evident across the higher rainfall areas of much of WA's south-west botanical province.

CALM's work in curtailing dieback is being assisted by the Northern Sandplains Dieback Working Party Inc. Founded in 1990, it has made a major contribution to the control of the plant pathogen *Phytophthora* spp. in the region. The vegetation of the northern sandplains, known as kwongan heath, is home to a high number of susceptible plant species and sub-species that are concentrated in small areas.

Past and present members of the working party include RGC Mineral Sands Ltd, Tiwest Joint Venture, CRA Exploration Pty Ltd, Boral Energy Resources, CALM, the Department of Minerals and Energy, Agriculture WA, Main Roads WA and the Western Australian Municipal Association.

This long-term work has resulted in coordinated research and education activities directed towards the general public, government, industry and local communities. Workshops have been conducted, promotional materials produced, policies developed and



implemented and monitoring strategies established.

On another front, Rotary Clubs within the Albany Region, in cooperation with CALM, funded the production of the Dieback Speakers' Kit. Used by community members, CALM officers and members of Rotary Clubs, the kit comes with speech outlines and visual aids, including slides and a video tape. Another project, with the Rotary Club of Albany Port, the Gordon Reid Foundation and CALM, established 20 footwear cleaning stations in the region's parks to help reduce the spread of dieback, in addition to accompanying signage and the production of 10,000 copies of an information booklet.

As well as contributing to the future security of the wildlife of the region, all participants are building up community goodwill and demonstrating environmental 'best practice'.

# LANDCARE AND LAND MANAGEMENT

Landcare and land management cover a diversity of habitats from coastal dunes suffering erosion to inland areas at risk from encroaching salinity. Projects may produce and establish woody plants for land conservation,

Acacia, Pityrodia and Thryptomene are typical kwongan heath species in Zuytdorp National Park. Photo – Marie Lochman

rehabilitate land or develop programs to maintain existing sites.

One success story has been the transfer of 198 hectares of wetland to the State for management by CALM. Near the City of Bunbury, the land was formerly owned by mining company Kemerton Silica Sands (KSS). The sensitive wetlands and lakes are a vital addition to CALM-managed lands, as more than two-thirds of lakes on the Swan Coastal Plain have been destroyed or severely degraded. The conservation of the area's genetic diversity has been ensured and KSS will carry out their mining operations in adjacent, less sensitive land. Sons of Gwalia, the parent company of KSS, will also assist CALM, as their own environmental monitoring program had already made a significant contribution to the knowledge of the area. Management guidelines will cover surface and ground water management, fire management and the control of weeds and feral animals. The hand-over demonstrates a clear commitment to the environment by industry, and



demonstrates how multiple land-use can be achieved on a properly managed, cooperative basis. On completion of the mining, KSS will rehabilitate the area, which will also be managed by CALM.

On a much smaller scale, practical contributions to landcare projects have included donations by Kalgoorlie Consolidated Goldmines (who supplied disused conveyor belting for some proposed track stabilisation) and Cockburn Cement (who made donations from their stocks).

Whatever the size and scale of the project, contributions of time, expertise, materials and grants enhance existing programs and launch initiatives that would otherwise not go ahead.

# TACKLING GREENHOUSE GAS EMISSIONS

Earlier this year, CALM entered into a history-making partnership with British Petroleum (BP) to explore the feasibility and management of tree plantations to create carbon sinks as an offset to the company's greenhouse gas emissions. This is the first pilot project of its kind in Australia, and will implement broad-scale tree-planting on maritime pine and landcare species on farmlands in partnership with

Left: Marine management is one facet of CALM's responsibilities where it looks to partners for assistance. Here, scientific research is being conducted in the Jurien Bay waters, the major breeding area of the Australian sea lion.

Below: Support from Australian Geographic will help with researching the feeding behaviour of Australian sea lions. Photos – Eva Boogaard/Lochman Transparencies

farmers—half a million trees have already been planted. A key benefit of the project is its contribution towards slowing the expansion of lands and waterways affected by salinity and maintaining the remnant biodiversity in an already depleted landscape.

#### MARINE MANAGEMENT

As with most other programs, marine management is about a balance, a balance between conservation of plants and animals and their habitats, and human use of that environment. Seagrass, coral reefs and mangroves, and large and small marine creatures, fall within the ambit of this responsibility. Social research, marine education and extension are also an integral part of the program.

An ongoing commitment by the Esperance Port Authority provides CALM with exclusive use of a boat to visit and monitor nearby islands. The use of an Authority boatshed is also available as a holding area for injured and sick animals.

A recent CALM initiative, research into the feeding behaviour of WA's two native seal species—the Australian sea lion and the New Zealand fur seal-has enlisted the support of Australian Geographic magazine. The project is extensive, but a critical feature is a portable gas anaesthetic machine. The seals will be captured and restrained for attachment of transmitters and data loggers. The machine is vital to the safety of the animals, and Australian Geographic has made a significant contribution towards its cost. The value, however, will reach beyond the current project; the machine will be a tool in dealing with sick and injured wild seals.

Assistance is also being sought from the Commonwealth Government, the fishing industry and other nongovernment funding agencies and stakeholders.





# ACTIVITY PROGRAMS AND INFORMATION

Environmental educational activity programs play an important part in promoting community awareness and in encouraging people to be involved in experiences that teach about nature.

CALM's Hills Forest Activity Centre and its Aboriginal Tourism, Education and Training Unit, working in collaboration with the Education Department of Western Australia, Healthway and the Aboriginal community, have developed a hands-on. interactive excursion. Initiated in 1996, the program complements Aboriginal Studies curriculum materials being used in the State's secondary schools. The resulting Aboriginal Culture Excursion. the ACE program, was so successful that additional funding was needed to subsidise growing transport costs. Healthway, as part of its 'Respect Yourself, Respect Your Culture' program, agreed to provide such assistance. The program is now being used by Aboriginal people as a training ground for Aboriginal excursion leaders wanting to work in education and tourism.

Another innovative project is the Dryandra Woodland Radio Drive Trail. This spectacular and characteristic wandoo woodland is near the Wheatbelt town of Narrogin. In 1994, CALM received National Forest Ecotourism funding for the development of an interpretative drive trail through the area to explain the ongoing relationship of people to the woodland. To enhance the project further, CALM subsequently



Above left: Noel Nannup, of CALM's Aboriginal Tourism, Education and Training Unit, demonstrates Nyoongar bush skills as part of the Healthwaysponsored ACE Program.

Above: Members of CALM's Aboriginal Tourism, Education and Training Unit with teachers from St Mary's Anglican Girls' School who participated in the Healthway-sponsored ACE Program. Photos – Liz Moore/CALM

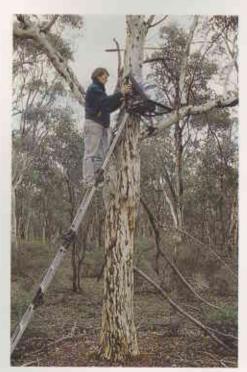
Right: Australia's first solar-powered radio drive trail, in the Dryandra Woodland near Narrogin, was developed with the assistance of Advanced Promotions.

Photo – Daryl Moncrieff/CALM

acquired the sponsorship of Advanced Promotions, a Perth-based audio promotion company, who donated some of the equipment and expertise to develop Australia's first solar-powered radio trail. Solar transmitters broadcast short, digitally recorded messages, complete with sound effects, from six vantage points along the 25-kilometre trail. Advanced Promotions was excited to be at the forefront of such an innovation and services the equipment when necessary.

### PARTNERSHIPS—A WINNING FORMULA

The benefits of working as partners are broad and personal. There is particular pleasure in exchanging ideas, sharing expertise and developing innovative projects. Whatever the involvement, the goals are the same. Increased community awareness and a shared purpose into the future play a



vital part in building a rich, thriving and secure natural environment. CALM is proud of its many collaborative achievements and, with ongoing commitment from its partners, can be optimistic for the future of nature conservation in Western Australia.

Suzanne Curry is CALM's External Funding Coordinator, She can be contacted on (08) 9334-0567 or email (suzannec@calm.wa.gov.au).

Margaret Kierath is a freelance writer with an interest in the environment:

The authors wish to thank the CALM staff who contributed to this article.



What does the future hold for our karri forest? Research provides some interesting insights. See page 18.



# COPF

**VOLUME FOURTEEN NUMBER 4, WINTER 1999** 





The photographic exellence of WA team Babs and Bert Wells was driven by a love of the job. See page 10.





Many WA women have played important roles in the conservation of our natural resources. Some of them feature in our story on page 41.



**GROWING GNANGARA PARK** 

TAKE YOUR PARTNERS

DOING WHAT COMES NATURALLY

CARIS BAILEY......35

TAMMIE REID, SUZANNE CURRY & MANDY CLEWS .....41

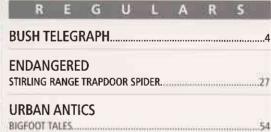
SUZANNE CURRY......47



'Growing Gnangara Park', on page 35, continues the story of WA's largest proposed outer suburban native parkland.



Partnerships are important. Many private sector businesses and individuals are active partners in protecting our natural







Executive Editor: Ron Kawalilak Managing Editor: Ray Bailey Editor: David Gough

Story Editors: Mandy Clews, Verna Costello, Louise Johnson, Mitzi Vance, Penny Walsh

Scientific/technical advice: Andrew Burbidge, Greg Keighery, Ian Abbott, Neil Burrows, Paul Jones and staff of CALMScience Division Design and production: Tiffany Aberin, Maria Duthie, Sue Marais

Illustration: Gooitzen van der Meer, Ian Dickinson

Marketing: Estelle de San Miguel = (08) 9334 0296 Fax: (08) 9334 0498 Subscription enquiries: # (08) 9334 0481 or (08) 9334 0437

Colour Separation by Colourbox Digital Printed in Western Australia by Lamb Print

© ISSN 0815-4465. All material copyright. No part of the contents of the publication may be reproduced without consent of the publishers.

Visit LANDSCOPE online on our award-winning Internet site NatureBase at http://www.calm.wa.gov.au



Published by Dr S Shea, Executive Director Department of Conservation and Land Management, Dick Perry Avenue, Como, Western Australia