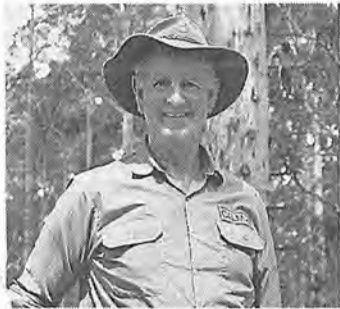


CALM NEWS

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

MARCH-APRIL 1994



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A cracking start for bluegums



Left to right, Mr Itsuo Takada, Senshukai Company, Dr Syd Shea, Premier Richard Court, Environment Minister Kevin Minson and Mr Toshiaki Fujii, Itochu Corporation, break the ceremonial sake barrel to signify the start of a new venture. Photo courtesy The Australian

A RECORD 1.9 million seedlings will be planted this year in a single tree crop project in the Albany region.

The planting is the second of a 10-year, \$60 million investment by the Albany Plantation Forest Company of Australia Pty Ltd (APFL).

APFL is a joint venture between the New Oji Paper Company, Itochu Corporation and Senshukai Company which have a combined annual turnover of \$250 billion.

The joint venturers have appointed CALM to manage the project, which is based on sharefarming with local landowners.

A formal ceremony to mark these new partnerships was held at Yerriminup Bluegum Grove near Mt Barker late last month. The ceremony included the traditional opening of a barrel of sake, to symbolise a new start.

Those attending included Premier Richard Court, Environment Minister Kevin Minson, the Japanese Consul-General, Yoshihiro Imamura, direc-

tors of the Japanese parent companies, CALM staff and farmers taking part in the project.

Mr Court said that 25 million bluegums would be planted around Albany to produce wood fibre for paper manufacture.

The seedlings would come from CALM's nursery at Manjimup.

"This is an excellent new cash crop for local landowners, which can be integrated with traditional farm production," he said.

Mr Minson said there were also enormous environmental benefits to planting trees.

"The whole region will benefit from the investment in infra-structure required when the trees begin to be harvested at the end of the 10-year planting cycle," he said.

"The harvest will then generate \$50 million a year in export income."

Premier Court said the project represented many important partnerships.

"It has also shown that we can integrate our economic and environmental goals."

LANDSCOPE takes gold

WESTERN Australia's conservation, forests and wildlife magazine, *LANDSCOPE*, has won three gold medals in Australia's most prestigious printing and design competition — the National Print Awards.

LANDSCOPE is published by the Department of Conservation and Land Management and printed in Perth by Lamb Print and is the flagship for Western Australia's nature conservation effort.

"The gold medals for excellence in design and printing is a tribute to the team associated with the magazine's production at CALM and at Lamb," Environment Minister Kevin Minson said.

The medals follow the presentation of the Alex Harris Memorial Medal and high commendations for excellence in environmental writing awarded to contributors to the magazine last year.

CALM's 1994 calendar, also printed by Lamb, was awarded a bronze medal.

This is the third year in a row in which *LANDSCOPE* has won a national print award but it is the first time three editions of the magazine each have been awarded gold in the same year.

The awards, which attract about 1500 entries each year, are presented by the Advertising Print Production Association, the Printing and Allied Trades Employers' Federation of Australia and the Graphic Arts Services Association of Australia.

Korean tree contract signed

by Caris Bailey

THE Department of Conservation and Land Management and one of Korea's leading forest product companies, Hansol Forest Products, have signed a formal agreement that will guarantee a \$30 million investment in a new industry for the Collie region.

The 10-year agreement will mean record tree planting in the Wellington catchment area, where previous land clearing has led to salinity problems.

Export income

Once harvesting begins, the pulp wood produced will earn an annual export income of \$25 million.

The agreement, signed in Perth recently, replaces a short term contract reached last year between Hansol and CALM.

Hansol Australia Pty Ltd

has appointed CALM as its agents in a project to plant 10,000 hectares of bluegums.

Hansol's investment will meet all costs of planting, which will be carried out over 10 years. The planting will be done in partnership with local landowners under CALM's sharefarming scheme.

Environment Minister Kevin Minson said that rather than alienating agricultural land to address the land degradation problems, Hansol and CALM would be working together with farmers.

"The tree crop can be integrated with traditional farming, providing an extra source of income, as well as bringing enormous environmental benefits," he said.



Mr Minson said it was a credit to all involved that Western Australia had been able to build a new industry out of addressing the area's land care problems.

CALM Executive Director Syd Shea said Western Australia had the natural conditions and the management skills to produce some of the best wood fibre in the world.

Executive Director Syd Shea and Director of Hansol Australia Mr Lyu, sign the 10-year agreement. Photo by Ernie McClintock



Every day I receive a deluge of advertisements about management books or invitations to management seminars. I rarely take up the invitations or buy the books because frankly, I believe much of what has been written about management science is "faddish".

This deluge of management "science" is a consequence of the fact that we are experiencing change at a rate which we have never before seen.

I do agree with the management gurus' proposition that "change is here to stay" and that organisations which do not respond will become extinct.

While I am sceptical of many of the new fads that have been proposed to deal with this change, one management theme that comes through constantly is the idea that our management systems must accommodate horizontal interactions within organisations and between organisations.

Two of the ways that this can be achieved is by forming strategic alliances and networks within our organisation and with external organisations.

CALM, because of the diversity of skills we need to fulfil our charter and because of the big number of constituencies we have, can particularly benefit from strategic alliances and networking.

While there are individuals and units within the Department with great talent, their firepower can be magnified ten-fold if we work together and exploit the synergisms.

We already have some successful models of this type of management. I have often cited our safety program as an example of what can be achieved by teamwork, horizontal communication and the dissolution of hierarchical barriers.

More recently we have shown in Operation Foxglove and its related activities, the benefits of linking different sections of the Department in a project.

The development of "Western Bluegums" is employing a range of skills right across the Department and is achieving outstanding success. We also have been successful in promoting nature-based tourism because we have formed strategic alliances with the private sector.

Before anyone gets excited and propose that I am no longer necessary and the hierarchy can be abandoned, I emphasise that CALM cannot abandon formal management procedures or our structure.

But the fact that we have to retain formal structures and work under precise laid down procedures does not prevent us at the same time exploiting the benefits of a more free-wheeling style of management where it is appropriate.

The changes in industrial legislation and the forthcoming changes in the Public Service Act means that can no longer use legislative constraints as an excuse for the lack of innovation in the public sector.

I urge everybody in CALM to exploit the advantages that the rapid period of change is bringing to us and to take every opportunity to exploit the synergies that abound in the Department.

Dr Syd Shea, Executive Director

Dryandra's 100-year vision

A 10-YEAR concept with a 100-year vision has been released for one of the State's most remarkable bushlands.

It is a draft management plan for the Dryandra woodland, a group of State forest blocks near Narrogin in Western Australia's western wheatbelt.

The woodland is an "archipelago" of 17 bushland islands surrounded by a "sea" of cleared farmland. It has a rich diversity of wildlife and marks the eastern and western distribution limits for several higher rainfall and wheatbelt plant species.

It also is popular as an environmental education centre and almost 30 000 people visit the area each year.

Environment Minister Kevin Minson, along with Wagin MLA and Emergency Services Minister Bob Wiese and Avon MLA Max Trenorden, released the draft plan earlier this month at a special function in the woodland.

The plan, prepared by CALM, outlines recommendations that aim to integrate nature conservation objectives with sustainable agriculture on surrounding farmlands and the development of a nature-based tourism industry.

Dryandra is the last remaining sizeable area of woodland in the western wheatbelt following extensive clearing for agriculture in the past 40 years.

It represents the transition from the jarrah forests of the Darling Range to the more open woodlands of the lower rainfall regions and has more than 800 identified species of native plants.

Dryandra also has populations of 21 of the 46 species of native mammals that remain in the wheatbelt and 98 bird species.

The populations of



CALM Narrogin staff at the release of the Dryandra draft management plan were John Edwards, Sharon Hann, new Narrogin district manager Tim Bowra and his wife Belinda.

small marsupials, particularly numbats and woylies also show the impact fox control has on native animals.

Dryandra has more than 8000 hectares of mallet plantations that were sown as far back as the 1920s to produce bark for the tannin industry and, more recently, timber for fence posts and tool handles.

The woodland covers almost 28 000 ha of State forest vested in the Lands and Forest Commission for multiple use.

The draft plan recommends much of the area be listed as national park with smaller isolated areas designated nature reserves.

The mallet plantations and some plots of sandalwood will remain State forest.

The aim is to phase out timber harvesting except from the mallet stands.

At the same time, landowners on surrounding farmlands will be encouraged to plant suitable species such as mallet which



Environment Minister Kevin Minson (left) had the support of his parliamentary colleagues Bob Wiese, Member for Wagin, Bruce Donaldson, MLC and Max Trenorden, Member for Avon, at the launch of the Dryandra draft management plan.

not only will have landcare benefits, but also assure the supply of suitable timbers for local industry well into the next century and beyond. In this way, the nature conservation concepts of Dryandra can be integrated into sustainable

agricultural pursuits on the neighbouring farms.

The plan covers a broad range of issues including access, the spread of plant disease, fire management, tourism and recreation, other commercial uses such as bee keeping and mining,

Aboriginal and European heritage, flora and fauna, research and community relations.

The plan has been released for public comment for two months. Copies are available through CALM's Narrogin office.

STAFF NEWS

Appointments

Sharon Gilchrist, Officer, Goldfields Region

Promotions

Steve Collings, Operations Officer, Pemberton;
Kathryn Lee, Librarian, Como from Department of Agriculture; Phil Spencer, Operations Officer, Kalgoorlie.

Transfers

Mark Roddy, Park Ranger, Stirling Range National Park, from Fitzgerald River National Park; Allan Rose, Park Ranger, Cape Le Grand National Park from Stirling Range National Park.

Retirement

Tom Leftwich, Senior Technical Officer, Woodvale, from March 31, 1994.

Tree crop integration the key

COMMERCIAL tree crops integrated into existing farming operations will make a major contribution to landcare and provide another cash crop for farmers.

Department of Conservation and Land Management Executive Director Syd Shea said these tree crops would not be panaceas for all of agriculture's economic and environmental ills.

But there was a window of opportunity to establish a new and significant enterprise for the rural sector.

Dr Shea was addressing farmers at the Australian Association of Agricultural Consultants' Agcon '94 conference in Perth recently.

"Australian agriculture has had a parade of panaceas, including a minority of forestry promoters who were either charlatans or incompetents — or both," Dr Shea said.

"Tree crops still have uncertainties and consequently risks but there have been significant developments in the past 10 years that mean we can create new industries based on wood fibre and reap the landcare benefits trees provide."

Dr Shea said there had been an overall "shift in the mindset" that had made

forestry and agriculture mutually exclusive.

In the past, tree crops were regarded as unnecessary because the extensive tracts of native forests and trees were seen as things to be cleared for agricultural development.

"As well, the commercial returns from tree crops only recently have become competitive with returns from traditional farming pursuits such as grain and livestock," he said.

"But, the rapid development of land conservation districts in the past 10 or 12 years and the much greater awareness of landcare programs have given trees a new status in the environmental and economic sense."

Dr Shea said the supply of wood fibre from native forests inevitably would decline if for no other reason than the fact that in some parts of the world,

these forests were being over-exploited and cleared for agriculture.

"In future, those regions of the world that can produce wood efficiently will capture the market created by the decline in the wood produced from native forest," he said.

Dr Shea said there was increasing information available that showed tree crops, integrated into existing farming practices, could improve the farm's overall sustainable productivity.

This was known as the "agroforestry effect".

"Production from 10 hectares of mixed trees and pasture in the 800 to 900 mm rainfall belt can equal the production from 8 ha of pure plantation and 6 ha of pure pasture," he said.

"In other words, there is a 40 per cent productivity increase to be gained through integrating trees

into livestock production.

"This is because the mixture of tall, perennial, deep-rooted trees and the shallow-rooted annual legume-based pasture make better use of resources such as water, nutrients, sunlight and carbon.

"The components in this mixture are not competing with each other, rather they are working in harmony."

Dr Shea said CALM had developed the technical, legal and commercial processes that enabled farmers to integrate tree crops into their farming systems.

Integration meant the farmer stayed on the farm and agricultural production was not reduced.

These processes had been instrumental in attracting major Japanese and Korean companies to enter partnerships with WA farmers for major tree crop programs.

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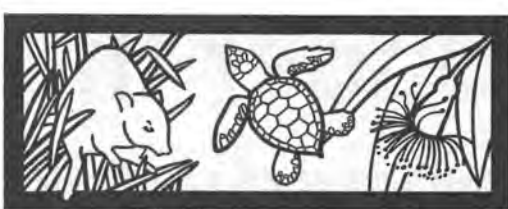
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LANDSCOPE Expeditions in 1994

PEOPLE seeking a holiday with a difference can join a scientific expedition to the Kimberley, Gibson Desert or jarrah forest.

Activities range from catching fresh water crocodiles in the remote Kimberley wilderness or documenting the wildflowers of the far north to working with endangered mammals in the south-west forests.

"Participants will work side by side with scientists from the Department of Conservation and Land Management on field-based study and research," CALM Executive Director Dr Syd Shea said.

Five LANDSCOPE Expeditions are being offered this year, following successful trips recording rainforests and bats in the Mitchell Plateau, birdwatching in Broome and monitoring endangered mammals in the Gibson Desert.

Birds and Botany of the North Kimberley in June this year will involve recording the birds and plants of the rainforests, gorges and rugged sandstone country of the far north.

The *East Kimberley Wildlife and Wilderness* expedition in July, will gather biological information on flatback turtles, birds such as the rare Gouldian finch and carnivorous plants.

The volunteer researchers can also help capture and release freshwater crocodiles, but this is optional!

Monitoring Endangered Mammals in the Gibson Desert offers people the chance to explore the hidden fauna

and subtle beauty of the desert under the guidance of scientists who have worked in the arid zone for many years.

Fauna of the Battaling Forest, in November, will give participants the rare chance to see and handle secretive nocturnal animals such as chuditch, bandicoots, woylies and brushtail possums.

In the *Biological Survey of Mount Elvire* the volunteer researchers can pit trap small desert animals, record bird life and do some evening spotlighting in a remote area north-west of Kalgoorlie.

"All the expeditions will collect valuable scientific information that will ultimately be used to manage these unique areas and their wildlife," Dr Shea said. "The participants' contributions will make the study and research possible and their enthusiasm, commitment and ideas will make it all happen."

The Expeditions are being offered by CALM's LANDSCOPE magazine, in association with UWA Extension.

A brochure containing further details, costs and an application form has been produced and can be obtained by contacting Jean Collins on (09) 380 2433.

The leaflet also includes advance information on two exclusive and unusual trips to explore the Kimberley coast in 1995.

In June 1995 CALM will lead a scientific expedition that retraces the Kimberley voyages of the *Mermaid* and *Bathurst* (1819-1822).

Partners in protection

WILDLIFE at one of Perth's most internationally significant wetlands is being protected through a combination of engineering skills, corporate sector support and nature conservation expertise.

These three factors together have enabled a 9.3 km long fence to be built around Thomsons Lake Nature Reserve which is recognised under the Ramsar convention as habitat for migratory wading birds.

It is the first time an engineering solution had been used in Western Australia to conserve an area listed in the convention.

"It is a tremendous example of how a multiplicity of disciplines can be used to enhance the State's conservation effort and responsibilities," Environment Minister Kevin Minson said.

Fine example

Thomsons Lake is considered one of the finest examples of wetlands on the Swan Coastal Plain.

It has a diverse range of fringing vegetation and each year is invaded by birds from as far away as China and Siberia.

It also is habitat for the long-neck tortoise, western brush wallaby, possum, bandicoot, grey kangaroo and nine species of frog.

The idea for the fence was put forward by the then caretaker of the lake, Pauline Clay, and a working party was set up in 1991 to consider the concept.

The group included representatives of the Department of Conservation and Land Management, City of Cockburn, Yangebup Progress Association, Banjup Action Group, Alcoa Australia and The University of Western Australia.

The group liaised with Boral Cyclone which contributed to the design concept for the fence.

The fence, costing \$308 580, was built by CALM staff over a three-year period.

It was sponsored by Alcoa Australia which contributed \$50 000, the City of Cockburn \$40 000 and Homeswest \$30 000.



CALM's Perth district reserves Officer Rod Martin (left), overseer Sam Greer, Executive Director Dr Syd Shea, forest workers John Polgar and Simon Caunter, senior operations officer John McKenzie and Environment Minister Kevin Minson at the commissioning of the Thomsons Lake fence project.

The fence is the first step in managing introduced pests such as foxes, cats and rabbits.

It also will protect native flora and fauna from the impact of recreational activities such as horse riding and four-wheel-driving.

These activities have resulted in soil erosion and the introduction and spread of *Phytophthora cinnamomi* that causes dieback in jarrah, banksia and many shrubs.

Facilities such as hides for bird watching, walk trails and sign posting

also will be upgraded.

CALM will survey the reserve's flora and fauna to monitor the effectiveness of management programs such as feral animal control.

This also will provide information to guide a reintroduction

program if mammal species known in the area are not found as a result of the survey.

A fire management strategy also has been prepared to regenerate flora and provide refuges for small animals in the event of wildfires.



(From left) Peter Blankendaal, Bruno Rikli, Acting Commissioner John Spurling, Andrew Milne and Mark Spice.

\$2m boost for mallee plantings

UP TO \$2 MILLION will be spent over the next three years to help wheatbelt farmers establish eucalyptus oil-producing mallee crops.

The money, from the Department of Conservation and Land Management's Tree Planting Trust Fund, will help farmers meet the costs of seedlings for pilot commercial trials at Esperance, Woodanilling, Lake Toolibin, South Merredin, Kalannie and Cannan.

So far about 20 farmers in Esperance, Wood-

anilling and Lake Toolibin have planted a total 250 hectares of mallees in blocks and hedgerows.

A further 1250 ha will be planted this year and ultimately each of the six areas will have around 5000 ha under mallees.

Enormous potential

Euc-oil has enormous potential as an industrial solvent as existing solvents are being phased out under international conventions on protecting Earth's

ozone layer.

CALM, the Department of Agriculture, the Department of Commerce and Trade and Murdoch University, are carrying out a feasibility assessment of the industry.

CALM also is establishing an arrangement with Botanical Resources Ltd headed by Professor Alan Barton of Murdoch University who already has done much work on the chemistry of euc-oil.

CALM and the Department of Agriculture will co-ordinate oil mallee

research and development.

Environment Minister Kevin Minson said the pilot plantings were carried out under CALM's sharefarming agreements that successfully had seen a massive swing towards bluegum plantations in the higher rainfall areas.

"The reason these agreements are used is that they provide a legally secure mechanism for equity financing and a business structure that can provide orderly development and marketing," he said.

"The fact is that a small

input of equity finance to cover the costs of seedlings is a strong stimulus to farmers to plant big areas under tree crops."

CALM research is focusing on selecting mallee varieties with high oil yields and indications are that oil yields can be increased to levels that could make mallees a competitive crop in their own right within five to 10 years.

This development could enable Australia to regain world dominance in euc-oil production.

Wage accord

FOUR dieback interpreters at CALM's Bunbury office have become the first group to enter a collective public sector workplace agreement.

The agreement — which provides a 10 per cent productivity-based wage increase — follows 12 months trialling of new work arrangements under which the interpreters decide how many hours they will work on any given day.

They also decide the most effective order of work, subject to an agreed annual program.

Morale boost

The only restriction is that the number of hours worked has to average 37.5 a week over 12 months. The result has been a 33 per cent increase in the area of forest interpreted and mapped for dieback without any reduction in standards.

Forest ranger and dieback interpreter Peter Blankendaal said the formalisation of the new work arrangements into a workplace agreement had boosted morale and motivation.

Bombing helps research

PLUGGING heaters into trees and bombing pine needles at four in the morning is the basis for new silvicultural research in pine plantations near Harvey.

The aim is to measure the growth response to fertiliser applications and thinning.

CALM already knows a great deal about how trees respond to fertiliser; now plantation managers want to know when to apply it for optimum stand densities.

Dwellingup-based forest scientist and plant physiologist Stuart Crombie says CALM wants to work out the most economical way to manage plantations and maximise wood production.

"By understanding how trees manage their nutrient and water supply, we can assess the number needed to produce a given amount of wood," he says.

"It's no use whacking on fertiliser if the trees run out of water and die."

CALM tree nutritionist and joint project leader of the trial John McGrath says fertiliser increases a tree's leaf area so it can photosynthesise more efficiently and grow quicker.

"Increasing leaf area also means the tree transpires more water, John says.

"Thinning trees reduces competition for the available ground water and allows the trees left standing to take up the fertiliser.

"There's optimal response in terms of wood production, stand density and fertiliser applications.

"The riddle yet to be unravelled is the relationship between wood production and water use of different species of trees."

A three-year plan to monitor 36 plots began this summer after the trees were thinned to varying densities. Ground water is monitored to a depth of

by Tammie Reid

eight metres with a neutron probe, and the water status of pine needles is measured by a Scholander pressure bomb.

Transpiration is measured using the latest and best heat pulse velocity probe—a type of heater—connected to a computer that can record in the field for up to six weeks continuously.

"The probe is a vast improvement on former manual methods that meant people sitting by trees, for hours, days or even months," Stuart says.

Busselton technical officers Bob Hingston, Beth Read, Terry Reilly and Steve Ward, and forest workman Alan Woodward were involved in the early phases of the project.

Members of the pre-dawn measurement team are Stuart Crombie, John McGrath, Dwellingup technical officer Joe Kinal and Busselton technical officers Ian Dumbrell and Keith Mungham.

"Everyone shares the task of taking these measurements and their enthusiasm is undimmed by the fact that all five are trying to sleep in one little on-site caravan."

Although the measuring has just begun, John McGrath gives some interesting observations so far:

"Radiata absorbs more soil water, so is able to photosynthesise for longer than pinaster, but it may run the risk of running out of soil water before the summer drought ends," he says.

"Pinaster appears to conserve water by having a much smaller leaf area and by its ability to close down its water loss during transpiration through the pine needles.

"There is no external funding for this project but we've had invaluable help from Pine Hauliers who



Above: Ian Dumbrell (foreground) and Stuart Crombie using Scholander pressure bombs.

Right: Stuart Crombie and a far safer bomb than the first Scholander model. Made from an old central heating boiler, it blew up when first used, nearly wiping out the USA's botanical elite scientists gathered to observe the new technique.

Photos by Tammie Reid

thinned the plots, softwood timber supply officer John Kaye who organised it, and Central Forest Region which provided funds for the fertiliser."



Turtle numbers now revised



Volunteer assistant Max Coyne examines tag on loggerhead turtle at Dirk Hartog Island. Photo by Bob Prince

ESTIMATES of numbers of the State's rarest sea turtle have been revised upwards, following turtle research in Shark Bay in January.

Researchers from the Department of Conservation and Land Management have found that Shark Bay has the largest loggerhead breeding site in WA.

They were surprised at the numbers of female loggerhead turtles beaching at Turtle Bay at the northern end of Dirk Hartog Island.

More than 430 loggerhead turtles were tagged by the researchers and CALM volunteers as they came ashore to nest.

Phenomenal

CALM researcher Dr Bob Prince, who is supervisor of the Marine Turtle Research project, says it is a phenomenal result, and shows that this rookery is a lot bigger than any other in the State.

"In 11 nights at Dirk Hartog

by Carolyn Thomson

we tagged as many turtles as we expect in two seasons at the Muiron Islands, near Exmouth, where we spend more than two months on-site," Bob said.

"We weren't even at Dirk Hartog for one complete nesting cycle.

"The nesting beaches at Dirk Hartog Island are spread over 4 km of beachfront, between the western end of Turtle Bay and around Cape Levillain to the east. We saw up to 100 animals coming ashore on good nights.

Before this trip it was estimated that only 500 to 800 females nested each year in Western Australia, predominantly between Shark Bay and the Exmouth Gulf.

The Marine Turtle Project aims to increase knowledge of marine turtle populations in WA, and of their conservation needs.

Under the boardwalk

WORK has begun on a boardwalk to protect the stromatolites in the Hamelin Pool Marine Nature Reserve, part of the Shark Bay World Heritage area.

The boardwalk is an initiative by the Department of Conservation and Land Management to conserve the region's natural resources and improve facilities for visitors.

Environment Minister Kevin Minson recently announced a contract for the 230-metre-long jarrah boardwalk worth almost \$200 000 had been let to Perth-based company Jonor Construction.

The contract followed calls for tenders last year.

CALM's district manager based at Denham, Ron Shepherd, said the boardwalk would give visitors an excellent view of the stromatolites. Information on the growth and development of these "living fossils" also would be provided.

Hamelin Bay is world-renowned for the stromatolites that are up to 1.5 metres high, 10 million times bigger than the microscopic organisms that build them.

These tiny organisms resemble the earliest forms of life on earth and are of inestimable significance to science so the conservation of this remarkable process is a priority.

The boardwalk, designed with the assistance of BHP Engineering, will

be built with negligible impact on the stromatolites.

CALM's Regional Operations Officer Nigel Sercombe is co-ordinator and reserves officer Bill Cuthbert is the on-the-ground supervisor for the project.

Ron says the jetty-like structure will tolerate the Pool's high salinity levels and the marked variations in water levels because of tides and winds.

"The boardwalk will allow visitors to view the stromatolites without degrading them," he says.

"Information boards also will be provided to enhance visitors' appreciation of the site and its natural resources."

The Shark Bay Region Plan in 1988 identified Hamelin Pool as a suitable day-use area but recommended public access be controlled.

An independent report to CALM by the former Director of the WA Geological Survey, Dr Phil Playford, last May recommended a boardwalk would be the best way of meeting this objective.

CALM also recently upgraded the car parking area and signage near the historic Hamelin Pool telegraph station, and other visitor facilities at nearby Shell Beach also are being improved.

The boardwalk is due to be finished by the end of April.

New paper out for Shark Bay

CALM has just published *Shark Bay — World Heritage Area*, an eight-page tabloid paper covering the natural history of the internationally-renowned area.

The large-format paper, funded with World Heritage money, is part of CALM's continuing program to provide information for visitors to the State's conservation estate and is the fourth such newspaper CALM has produced which deals with a specific region.

The other regions are: the Kimberley, Pilbara and Leeuwin coast.

The papers give visitors a guide to what to see and do, where to go and information about their many attractions, thereby enhancing the experience of people

visiting the areas.

Shark Bay is most noted for the dolphins at Monkey Mia, with about 100 000 people visiting every year.

About 46 000 people visit the stromatolites at Hamelin Pool.

Shark Bay — World Heritage Area covers the history of the region and management plans for the future conservation of its distinct natural values.

It also includes useful information for people using four-wheel-drive vehicles to reach some of the more remote areas such as the magnificent Zuytdorp Cliffs, Steep Point and the top of Peron Peninsula.

The paper is available, free of charge, from CALM offices and tourism outlets in the Shark Bay area.

First for 140 years



CALM wildlife officer Andrew Horan with a rockhopper penguin from the sub-Antarctic. Photo by Carolyn Thomson

NEW Zealand fur seals are breeding on the islands off Augusta for the first time in 140 years.

And that is just the news that CALM wildlife officer Peter Lambert and his close friend Ted Wright have been waiting for since they were the first to record three fur seals on one of the Flinders islands near Augusta in 1982.

According to Peter, the animals were wiped out from most parts of Western Australia's south coast by sealers in the 1850s.

But a wildlife survey of the islands last month revealed the fur seals are breeding.

Wildlife officer Ray Smith, who first saw two newborn pups on the island while investigating reports of a fur seal entangled in a bait strap in January,

by Carolyn Thomson

estimates that between 60 and 70 fur seals now inhabit the islands.

"This is up from the dozen or so usually seen there only a few years ago," he said.

New Zealand fur seals are found on exposed rocky coasts and offshore areas in WA, South Australia and New Zealand.

There are now an estimated 5700 fur seals in WA but the Flinders Island colony is believed to be the only breeding population west of Albany.

Ray and wildlife officer Andrew Horan also released a rockhopper penguin from the sub-Antarctic islands.

They are rarely seen in WA, but these large crested penguins sometimes lose their way and arrive weak and starving on our coast.

The rockhopper was handed over to CALM by the Fisheries Department and given to local wildlife

carers who nursed it back to health.

From Augusta it should easily be able to find the currents that will take it back to the sub-Antarctic.

Two little penguins that were rehabilitated also were returned to the ocean.



New Zealand fur seals were recorded breeding on the Flinders Islands at Augusta in February 1994 — the first time in 140 years. Photo by Ray Smith

Family Fun Festival



A festival visitor and carpet python make friends. Photo by David Gough

Volunteers save forest from fire

QUICK action from CALM's Lane Poole volunteer campground hosts Ron and Kaye Cameron saved the day and a lot of forest going up in smoke when they spotted a deliberately lit fire near the Baden-Powell camp site on the Murray River recently.

Ron radioed the Dwell-ingup CALM office and then with other campers began a bucket brigade to stop the running fire.

CALM forest workers

by Tammie Reid

Bill Plenderleith and Kevin Pratt were working nearby with the grader and armed with a pack spray and a rakeho, they worked hard to contain the fire.

Meanwhile, other CALM staff arrived, taking up pack sprays and hoses, as the fire had been lit well into the forest where the country was very steep, surrounded by pine plantations, and out of

range of fire hoses.

Fire controller Mike Tagliaferri said winds and weather were light and mild, so the fire behaviour was not fierce.

"Thanks to prompt action by Ron, Kaye and the campers, the fire reported at 11.30 am was extinguished by 12.15 pm, after burning only half a hectare," Mike said.

CALM crews spent several hours mopping up and ensuring there was no risk of re-ignition.

YANCHEP National Park's Family Fun Festival, held on Labour Day, was the culmination of several weeks' work by staff at the Park.

The festival was to celebrate the 'Year of the Family' and a wide range of activities and entertainment were available for all ages.

CALM staff were on hand to answer questions about the park and its wildlife and, where needed, joined in the events to help make the day as enjoyable as possible for the many families who had come along.

A group of young people from 'Sportsfun' organised a popular series of physical activities such as gymnastics, ball games, tug-of-war and stilt-walking as part of the Ministry of Sport and Recreation's display.

CATS Unrubbish and CALM volunteers showed children how to create craft works with gumnuts and recycled rubbish, while other children had their faces painted in all manner of garishly colourful cartoon characters or furry animal friends.

The furry animal

by David Gough

friends theme continued into the puppet show, which ran four times during the afternoon to the delight of the young, and sometimes not so young, audience.

Puppeteer Margo Seimer sang songs and told stories with Kerry the Koala, Cornelius the Crocodile, Wally the Wombat and many other bush characters.

Retro Rat (the Environmental Avenger) also made an appearance and was a big hit with the children, who followed him around.

Snakes, lizards, eagles and owls were also on hand.

A large carpet python was draped around the shoulders of anxious adults and thrill-seeking children, while tiger snakes, dugites and a gwardar were viewed in safety through glass-fronted cabinets. The eagle, with its tremendously powerful claws, sat on the gloved hand of its handler, while the owl looked on with apparent disinterest.

Those children not worn out by the games and

gymnastics could try their hands at rope walking, tree climbing and abseiling, or swing through the trees on a flying fox.

The Atlantis Bush Band provided a musical element to the day's activities and a gentle wind-down to a fun-packed and well-organised afternoon.

Visitor services officer Rod Annear said that staff

at Yanchep National Park evaluated each program or activity to assess its effectiveness and enjoyment by visitors.

"We always try to find out how we went and how we can improve things for next time," Rod said

"This time we counted smiles on faces and by our count, the day was a raging success!"

We've got your number!

BY THE time this issue of CALM NEWS has been distributed, each staff member should have received a copy of the new internal telephone directory.

The directory was compiled, with listings in two sections, by Marg Wilke and Robyn Weir of Corporate Relations Division and should help improve internal communications.

The first listing, in alphabetical order, is of all staff, and the second, also in alphabetical or-

der, is by organisational unit, showing structure, job titles and names of staff holding those titles as at time of compilation.

Every effort has been made to ensure accuracy but changes will have occurred between compilation, printing and distribution.

It is suggested that staff keep up to date by following the *Staff News*, usually on page 2 of *CALM NEWS*, and altering their directories accordingly.



Volunteers Ron and Kaye Cameron. Photo by Mike Tagliaferri



Left to right, Rob Thomas, Grant Pronk, Mark Virgo, Ian Keally and Andy Chapman. Absent team member is Sean Hazeldean. Photo by Ollie Thomas

Kalgoorlie in Balzano race

by Grant Pronk and Rob Thomas

FOLLOWING in the dusty steps of their Goldfields ancestors, a fine stand of CALM's Kalgoorlie male personnel took up the challenge of the inaugural Balzano Wheelbarrow Race.

James Balzano was a colourful prospector who lived in Kanowna, now a ghost town, 20 km north-east of Kalgoorlie.

One hot summer's day in 1893, James decided he would enjoy a swim at the local beach — at Esperance about 400 km away!

The distance didn't bother old James as he pushed his 1893 wheelbarrow loaded with essential gear: swag, panning dish, sieve, pick, water bag and white zinc.

And so another legend was born.

The modern day Balzano Wheelbarrow Race requires competitors to push an 1893-style barrow, made from bush timber with a whisky-barrel type wheel, and loaded with essential items of the day, from Kalgoorlie to Kanowna.

Competitors can be individuals, or teams of up to five, with proceeds going to the Royal Flying Doctor Service and State Emergency Service.

CALM's entry, Ian Keally, Mark Virgo, Andy Chapman and the authors, formed 'The Balzano

Dealer Team' (BDT) a highly athletic-looking bunch, bearing a striking physical resemblance to people in Jenny Craig's "before" advertisements.

The barrow was prepared, using the latest "fencing-wire and wooden axle technology".

The sophisticated lubrication system involved continuous mobile application (the pit crew running alongside) to an oil-packed wooden block with removable oil screw (patent pending). For easy access, the block was fitted to the hub on the outside of the solid wooden wheel.

Fever pitch

The tension built to fever pitch on the eve of the event, as the BDT pit crew made last minute adjustments to its barrow, and time trials were run past the depot.

The finely tuned barrow now matched the athletic prowess of its crew (slightly wobbly and unlikely to make the distance).

On the day, however, the BDT and its mean machine performed admirably, to the great surprise of all, including the team.

The start was explosive, the changeovers poetic, the running exhausting and the

finish too far from the start.

The only sour note came with an early scratching caused by a sudden and highly suspect hamstring injury sustained by Andy Chapman during the time trials.

This resulted in a late call-up for the equally fine-tuned athlete, Sean Hazeldean.

The race was a great success, with the BDT marginally pipped at the finish — a mere 40 seconds — by the Water Authority of WA.

"We was robbed," of course. WAWA's water bag sprang a huge leak that swiftly emptied its contents.

BDT believes this should have resulted not only in a disqualification but also a Royal Commission.

Throughout the next few days a very sore and sorry BDT team nursed its battle wounds and took stock of panel damage to the barrow.

The barrow now hangs in the store and the Goldfields strategic plan has been reviewed to ensure the BDT can go one better in next year's race.

An intensive training program has been drawn up and already is being strenuously avoided.

This should give the team an extra edge in this highly competitive and potentially lucrative event.

Bush course tops 1000

CALM's Outback Safety and Bushcraft Course, run in conjunction with Bob Cooper Outdoor Education, continues to attract strong demand from members of the public.

The two most recent courses, were oversubscribed. The next course begins on August 3.

Each course comprises one evening a week for four weeks at CALM's Como Training Centre, followed by a hands-on weekend bush camp. CALM employees get a discount of \$30.

An important aspect of the course is that it promotes an appreciation and respect for the natural areas.

Course coordinator Wayne Schmidt says

by David Gough

CALM is committed to providing these courses.

"They're an important part of our on-going public education program to encourage people to visit beautiful and remote parts of our State, so it's important we arm them with the knowledge, skills and attitudes they need, should something go wrong out there.

"Furthermore, the course teaches people how to use the land and its natural resources in an environmentally friendly way, by using only what is needed to survive."

Surviving unexpected life-threatening situations in remote areas is a very

real hazard.

No one is immune from risk, and no amount of pre-planning or high technology gadgets in the new 4WD can substitute for knowledge.

Whether you survive an outback emergency situation largely depends on the decisions you make in the first few hours.

Those decisions can be made much easier if you have had some training in survival.

Many early explorers, without today's technologies, survived because they implemented bushcraft skills, often learned from the Aboriginal people who have inhabited the harsh outback for thousands of years.

More than 1000 people,

including many CALM staff and volunteers, have taken part in the Outback Safety and Bushcraft Course and some have gone on to complete the Advanced and Pilbara Trek courses.

Now, Bob Cooper has announced an Aussie Bushies' Club, open to those who have completed the basic Outback Safety and Bushcraft Course.

For a small annual subscription, Bushies receive a newsletter, notice of forthcoming courses, discounts for courses and more.

For details on Outback Safety and Bushcraft Courses, and Aussie Bushies, telephone June Ellis on (09) 334 0437.

A new life for old bush carpentry skills



Steve Winfield, left, and Fred Myers rolling the log for debarking.

FOREST workers from CALM's Manjimup district and two of their Nannup co-workers got together recently to demonstrate some old bush carpentry skills.

Overseer Peter Rado, acting overseer John Steele and forest workers John McAlinden, Ian Rhodes and Mark Rado — all from Manjimup — spent two days with Nannup forest workers Fred Myers and Steve Winfield.

They went through the various techniques involved in building a post and rail fence and splitting shakes.

Shakes and shingles were both used by pioneer builders to roof their houses — shingles were mostly sawn from sheoak, while shakes were usually split from jarrah using a cleaving tool called a froe.

The aim was to share knowledge of various techniques with others within the department, to ensure the survival of these skills and to enable other districts to incorporate the techniques into historic and recreation site design.

On the first day, Peter Rado demonstrated how to make a horse trough from a jarrah log.

Apart from using a chainsaw to fell the tree, the rest of the work was done using traditional tools, including end trimming with a crosscut saw and hollowing the log with adze and axe.

The two days were productive and enjoyable. The "Nannup boys" went away happy with a horse trough in tow and a few more skills under their belts.

Inquiries on the course can be directed to me at the Manjimup district office on (097) 71 1788.

• Story and photos by Tim Foley



Preparing to flat the edge before hollowing. Peter Rado, left, offers guidance to Steve Winfield.



Tools of the trade.



The finished product — one horse trough.

Hope for embryos

CALM volunteer Pamela Smith of Roleystone believes she may have stumbled on a "first" in raising orphaned kangaroo embryos.

Pamela found a nine-week old male embryo in the pouch of a western grey kangaroo killed on a road near her home.

She said that if orphan kangaroos under 12 weeks were placed in an incubator, they generally die and if placed in a foster mother's pouch they were rejected.

"I decided the little fellow was worth my best shot so I implanted him in the pouch of Chrissy, another western grey kangaroo I'd also hand-raised," Pamela says.

"Chrissy's teats appeared not to produce milk so she was unable to suckle the embryo, but she didn't reject it.

"The 'virgin' foster mother is incubating the embryo, named Benjamin by my daughter, and I feed him three times a day instead of the recommended six, and he's thriving.

by
Verna Costello

"Benjamin's no bigger than your middle finger so I feed him on Wombaroo formula, a mixture available commercially.

"The formula is designed for much older embryos, but it seems the manufacturers don't make anything for youngsters under 12 weeks old.

"I use a bicycle valve on a syringe to siphon the formula into Benjamin's mouth; I've raised woylies and quokkas this way with great success.

"So I'm beginning to wonder if Benjamin absorbs supplementary nourishment from fluids secreted in the skin of Chrissy's pouch.

"The exciting thing about all this is that it might be possible to use kangaroo foster mothers for orphans of other animals such as the endangered woylie."

CALM ecologist Paul Brown who is based at Kelmescott district said this was a distinct possibility.



Volunteer Pamela Smith feeds Benjamin. Inset: close-up of a thriving Benjamin. Photo by Paul Brown

"Woylies are renowned for throwing out their joeys when disturbed," Paul says.

Pamela says she is always interested in exchanging ideas, particularly with other volunteers, and can be contacted on (09) 397 5885.

Spotter pilots his son

Story and photo
by Tammie Reid

SPOTTER pilot John "Woodie" Woodward pictured below is about to take off with son Jamie, who had just completed a week's work experience with CALM before starting Year 11 at Pinjarra High School.

Jamie's leanings are towards flying and he hopes to be selected for the Royal Australian Air Force after successfully completing year 12.

Computers are another

of his interests and, again, Jamie seems to be a mirror of his father, as John has a knack with computers that is invaluable to Dwellingup district staff.

John manages to get the best use out of both soft and hardware, without losing patience with the machine or the operator.

He is the number one

pilot for the Swan region and in the past 15 years has become a symbol of reliability in the air, instilling confidence in fire crews and office staff, who wait on his reports.

His ability to interpret ground conditions from the air is impeccable.

Woodie's job as senior pilot involves scanning the forests in summer on the alert for smoke to report, drawing up rosters, training new operators and, more

recently, testing the Eagle, soon to replace the slower but ever reliable Piper Cub spotter.

He also represents the pilots on the Enterprise Bargaining Committee.

In winter, John unassumingly takes on all sorts of fiddly, technical tasks and gets results, a legacy, perhaps, of his training in industrial chemistry.

Without a doubt, John is a valued member of the Dwellingup district team.



Linda to keep us fit

MEET Linda Gilbert, CALM's new health and fitness co-ordinator.

Linda is a Bachelor of Physical Education and forms part of the Risk Management section of the Human Resources branch.

She will be working with regional and district staff throughout Western Australia to raise fitness levels and encourage people to enjoy a healthy lifestyle.

Linda has made her mark already with Swan region where she worked part-time on a 12-month program, addressing low levels of fitness, the physical demands of CALM work, and stress.

Results of the program showed an overall improvement in coronary heart disease risk factors, an increase in physical fitness, decrease in percentage of body fat and

lower blood pressure.

Work practices were modified to support and reinforce a healthy work environment.

Job guidelines now specifically allow time for stretching and warming up before tasks involving heavy physical work.

The program paid particular attention to firefighters so food supplied during bush fires has been improved to provide balanced nutritional meals.

Minimum levels of physical fitness, based on task analysis of firefighting, have been recommended and encouraged among front line firefighters.

Initially, it is likely Linda will concentrate on regions and districts throughout the South West, building on the work begun at the 10 health and fitness seminars held in

1992-93.

Linda says that 540 staff took part in these seminars, many of whom reported positive results in their general health and fitness.

Beginning with May CALM NEWS, Linda will have a regular column that will cover nutrition, flexibility and strengthening exercises, skin cancer prevention, back care, smoking, and stress management. The emphasis will be on enjoying a new, healthy lifestyle.

"Finding a physical activity that's fun for the individual is the key. If you don't enjoy it, chances are you'll give up sooner," Linda says.

"For the same reason, food should be enjoyable to eat, and I can help with this, too."

Staff will not have to wait for Linda to visit their branch, region or district — they can contact her by phone on (09) 334 0397 or fax (09) 334 0478.

• Story and photo by Verna Costello



Linda Gilbert.

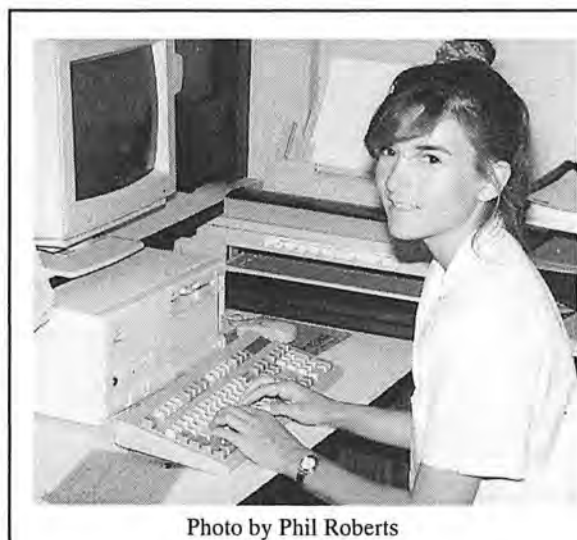


Photo by Phil Roberts

Welcome Alanna

MEET Alanna Chant, a Jobskills Trainee who recently joined CALM's Geraldton District office to assist with clerical duties and planning work associated mainly with the Shark Bay World Heritage Area.

Alanna has a Bachelor of Science degree from Murdoch University but like many recent graduates was having difficulty finding work in her chosen profession.

Undeterred she took on a computer course with Skillshare and became a

clerical Jobskills Trainee with the Midwest Training Group.

I heard about Alanna while looking for a part-time clerical-technical assistant, so with some reorganising by the Midwest Training Group, her traineeship was transferred to CALM.

Alanna is proving to be a great asset to the Geraldton office but unfortunately her traineeship ceases in June.

Meanwhile, Geraldton staff are exposing her to many facets of CALM's work which should enhance her prospects for future employment.

Tall trees and tall tales about Drafty

CALM recreation maintenance officer Colin Hunter is a legend down at Pemberton.

Colin is better known as 'Drafty', because in his younger days he was said to be as strong as a draught horse.

He has put in a massive 38 years' service with CALM and the former Forests Department, starting in 1955 as a bulldozer driver, scrub rolling for regeneration burns and fire-fighting.

As well as Pemberton, he has been based at Northcliffe, Shannon and Nannup.

These days you can find him at the Gloucester Tree, Warren National Park or Shannon National Park — where he is a favourite with tourists.

"I go around 18 sites,

by Carolyn Thomson

sometimes twice a day. My truck has clocked up 202 000 km in four years," he said.

Drafty makes sure the campsites are clean and have enough firewood, takes care of the toilets and makes sure everyone does the right thing.

He gets thank you notes left on picnic tables and Christmas cards from New Zealand, Malaysia and Canada.

"It's a great life — I love it. It's a healthy lifestyle and I love the bush. I also get to meet a lot of interesting people," he says.

Drafty knows how to spin a good yarn and the tourists love it.

"If they ask how many people have fallen off the tree I say it was quiet this week — only about 47!"

The book *Tall Trees and Tall Tales* by John Morris and Roger Underwood tells the following story about Drafty.

"Once when tidying up at Gloucester Tree, Drafty was approached by an American tourist. 'Say pal,' said the American, 'How in the Hell did they get that little cabin up into the branches of that tree?'"

'Easy,' replied Drafty, straight faced. 'They built it when the tree was a little sapling, and then simply waited for the tree to grow.'"

Get him talking about the old days and the tales are seemingly never ending... you can't get him to stop.

"We used to live on marron — they were two-foot long in those days," he says.

"If we had a fire we might be going for three or four days all day and night — we wouldn't go home until we put the fire out.

"And if we had a tin of camp pie and a couple of cracker biscuits we thought we were Christmas."

Drafty says the worst fire he ever saw was at Dwellingup in 1961.

"It went for nine days and I've never seen anything like it. The whole town was burned and there were dead cattle everywhere," he said.

"The other big fire was at Boorara. Since then, there hasn't been anything even half the size of those two." Or perhaps one of Drafty's tall tales.



CALM's 'Drafty' Hunter is a favourite with visitors to the Gloucester Tree. Photo by Carolyn Thomson

Cruel barb finishes 'lion

A MATURE Australian sea lion bull found afloat off Swanbourne is believed to have died of massive haemorrhaging caused by a piece of stingray spine.

Wildlife officer Trevor Walley and I examined the sea lion and found it had been in excellent condition, with the cause of death obscure.

A post-mortem revealed the tail spine, a bony, serrated barb 11 cm long, had punctured the wall of the stomach and diaphragm and pierced the heart.

The spine had worked its way through the stomach wall and the

by Peter Lambert

diaphragm, then into the heart, causing massive haemorrhage and death.

The stomach contained undigested stingray fin parts and an octopus, indicating a fairly sudden death.

The condition of the animal's teeth — a broken canine and worn down incisors — indicated it was an ageing sea lion.

Although there were no marks identifying the animal as one known to CALM officers, it is likely that it had long been a resident of waters and islands off the Perth

metropolitan coast and one which had probably made many trips to the breeding islands north of Jurien.

CALM officers are grateful for the co-operation and enthusiasm of people like Jim Todd, who sighted the sea lion from his charter vessel *Toucan*, and radioed Whitford's Sea Rescue Centre, and Jean Hall who relayed the message to CALM.

Their prompt action helped our staff to gain valuable information on the cause of the animal's death.

Apparently this is not the only case where a sea lion has died from a similar cause. An earlier case is known where a fish spine

had penetrated the oesophagus of the animal while feeding.

Its stomach contents revealed fin parts and the spine that were probably those of the southern eagle ray, commonly found off the WA coast.

Only fin extremities were located in the sea lion's stomach, some giving the appearance of having been cut with a knife.

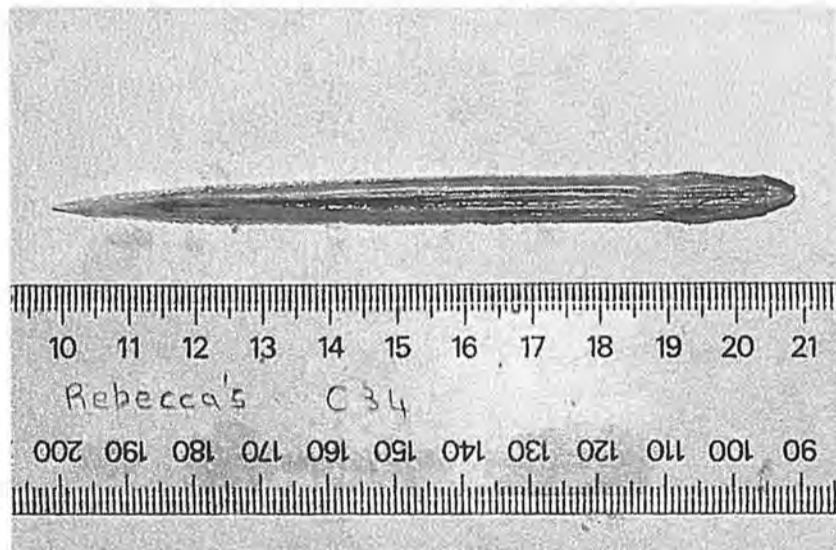
This led us to believe that discarded parts of fish had been cut up and thrown away or fed directly to the animal.

Chief wildlife officer Dave Mell said well-meaning people may believe they're doing fish-eating creatures a kindness, but hand-feeding sea lions may lead them to associate people with being fed with fish.

"This can lead them to try taking baited hooks or snatching fish from dinghies or nets and can even become a danger to people themselves," Dave said.

"For instance, a case came to our notice some time ago of a sea lion trying to launch itself into a dinghy.

"People can still enjoy seeing sea lions; they just need to respect their natural behaviour and habits."



The deadly portion of stingray spine. Photo by Peter Lambert

Arboretum is the place to be

THERE is no better place to be on a hot day in Kalgoorlie than CALM's Arboretum.

The cool green grass and tall shady trees make it a popular recreation spot for local people and tourists, and an educational resource for students and naturalists who are also frequent visitors.

Established in 1954 by now-retired foresters Bill Brennan and Robert Donovan, the Arboretum was used to test both native and exotic trees for their adaptability to the semi-arid Goldfields environment.

by Grant Pronk

The seed produced from the trees was exported to 52 countries with similar semi-arid climates. These included Israel, Morocco and Pakistan.

Huge plantations of eucalypts were established in these countries which greatly increased demand for the Kalgoorlie seed.

The demand was so great that the 3000 ounces of seed (potentially 30 million trees) sent to Como seed depot each year was not sufficient to satisfy the market.

About 60 eucalyptus species have been planted during the past 40 years with varying rates of success.

Shrubs were also planted in the arboretum and included melaleucas, casuarinas (cristata), eremophilas and santalums.

The Arboretum's water supply is dependant on open road run-off from the surrounding suburban roads, making efficient water harvesting of paramount importance.

Numerous grassed mounds and depressions have been strategically placed throughout the

Arboretum to direct water from the road run-offs to the areas in need, with surplus water being channelled into a dam located within the Arboretum.

CALM Kalgoorlie's operations officer Phil Spencer has improved the water flow by installing PVC piping and fine tuning the existing water-harvesting system.

A recent downpour has vindicated Phil's water harvesting skills, and the Arboretum now collects and disperses a much-increased volume of water.

Crows bow out before Robert's Big Thomo

CROWS visiting CALM Kalgoorlie's recreation sites have been put on a strict diet. No longer will the black marauders sit on rubbish bins scattering litter in search of a feed.

This problem is widespread at many parks and reserves and with a number of CALM Kalgoorlie recreational reserves more than 100 km from the office, daily clean up visits are unrealistic.

After submitting a Northern Territory crow guard design to a local engineering company and finding the cost of manu-

by Grant Pronk

facture too high, CALM staff looked for cheaper alternatives.

The crow guard had to meet several criteria: ease of use, durability, low-cost manufacture, be reasonably pleasing to the eye, and totally effective.

Environmental office Rob Thomas came up with a design to fit the criteria — The Big Thomo.

Using waste metal stored at the yard and a few inexpensive fittings, making the new guard was a doddle, and manufacturing

costs were slashed to minimum.

The first prototype, skilfully crafted by forest worker Mark Virgo, was considered a great success — a Big Thomo Crow Guard could be completely made up and installed in just over three hours.

At less than half the cost of a guard made by an outside company, this had to be a goer.

Several Big Thomos are now installed at CALM's Arboretum, with early indications showing them to be highly effective in fighting the destructive habits of our friend the crow.



Rob Thomas, left, and Mark Virgo with The Big Thomo Crow Guard. Photo by Grant Pronk