



TRACK ATTACK: Executive Director Dr Syd Shea proudly accepts a plaque commemorating the 5th Military District's adventure training walk along the Bibbulmun Track in November. Presenting him with the plaque were Brigadier Bob Fisher (left) and Lt Col Dan McDaniel. Dr Shea presented army walkers with personalised certificates for their efforts. Lt Col Dan McDaniel was the only walker to complete the entire distance from Kalamunda to Walpole.

Marine parks steal the limelight

Marine parks stole the limelight in November with the launch of the Ningaloo Marine Park management plan and the announcement of proposed parks at Shark Bay, Swan Estuary and Shoalwater Islands.

Executive Director Syd Shea released the plan for Ningaloo waters on behalf of CALM Minister Ian Taylor at Exmouth.

WA Premier Peter Dowding then released details of the three proposed marine parks, which are now available for public submission.

NINGALOO

Ningaloo Marine Park encompasses the most extensive coral reef in such close proximity to the coast in Australia.

It was created in 1987 along with the Marmion Marine Park and stretches from north of Exmouth 260km down toward Carnarvon, covering 4300 square kilometres of State and Federal waters.

Minister Ian Taylor said a major part of the plan's successful development was due to the considerable effort made by Ningaloo Marine Park Advisory Committee and the Exmouth community.

The plan will allow recreational and commercial use of the area to continue with minimum conflict and without degrading the park's natural resources.

Eight sanctuary zones will comprise about 20 per cent of the reef's total area and mean all marine life and reef within them remain untouched.

However, commercial

operations for tourists' observation of marine life would be permitted, the remaining reef area designated for recreation use.

The rest of the marine park's waters are for commercial and recreation use.

Mr Taylor said one of the major concerns at Ningaloo was the attack from the Drupella snail which has devastated some areas.

"With the provision of Federal funding under the Australian National Parks and Wildlife Service States' Assistance package, another fulltime research programme can start," he said.

"This is in addition to two other research projects — one at the University of WA and the other at CALM."

Ningaloo Marine Park is home to many species of marine life including populations of dugongs, green and hawksbill turtles, whale sharks and humpback whales.

PROPOSED

Proposals to protect three other important WA marine areas are open for public comment and submission until early February.

Areas proposed for marine park status are Shark Bay, Alfred Cove, Milyu Point and Pelican Point in the Swan River, and the Shoalwater Islands, extending from south of Garden

Island to Becher Point in Warnbro Sound.

WA Premier Peter Dowding said the Government aimed to establish a system of marine conservation reserves and marine parks along the State's coast.

The same principles of reserving areas for conservation and others for recreation while allowing some commercial activities in Ningaloo Marine Park would apply with Shark Bay and the Shoalwater Islands proposals.

The Swan River areas are tidal mudflats and seagrass beds which would be reserved for conservation.

A Penguin Island excursion led by Rockingham MLA Mike Barnett was held to explain the marine park concept to local media.

CALM representatives were Director of Nature Conservation Barry Wilson, Metropolitan regional manager Drew Haswell, Marine and Islands manager Greg Pobar and planner Richard May.

Also on the island were metropolitan ranger Jim Maher, Marmion Marine Park technical officer Peter Dans and Penguin Island ranger Gerry Deegan.

Wildlife within the three areas to be protected include transequatorial wading birds, the Australian sea lion, Bridled Terns, Little Penguins, dugongs, dolphins and whale sharks.

Premier hands over whale rescue trailer

WA Premier Peter Dowding last month handed over two mobile whale rescue trailers to CALM at a special beach ceremony in Bunbury.

The trailers will help overcome problems evident in past strandings — the lack of proper rescue and medical equipment.

Mr Dowding said the Government had provided \$20,000 to supply and equip the aluminium trailers.

"This equipment should be helpful in reducing the morbidity rate among the mammals in event of future strandings," he said.

The trailers are equipped with specially designed slings for lifting and carrying whales, communication equipment, transport padding, buckets, shovels and other vital rescue equipment.

Between 1962 and 1989 there have been 14 mass strandings of whales and

dolphins on the South Coast.

"The three rescues since 1986 have demonstrated the value of quick mobilisation," Mr Dowding said.

"There has been no shortage of volunteers to help in

rescues, it has been special equipment which has been lacking."

One of the rescue trailers will be based at Bunbury while the other will operate from Perth.

On hand to receive the

trailers were Chief Wildlife Officer Dave Mell, supervising wildlife officer Doug Coughran, six wildlife officers from Perth and Bunbury and Director of Nature Conservation Barry Wilson.



Discussing whale strandings at the Bunbury ceremony were (from left) Barry Wilson, Doug Coughran and Premier Peter Dowding. — Photo courtesy Peter Lambert.

Peter Hewett retires

CALM's Director of Forests Peter Hewett has retired.

A small function was recently held at Crawley to offer best wishes to Peter and his wife Beverly, and to thank Peter for his long and illustrious contribution to forestry in WA.

"Peter has been an example to us all, in terms of his professionalism and loyalty," said Executive Director Dr Syd Shea.

"His retirement is a great loss for CALM."

Originally a South Australian, Peter joined the WA Forests Department in 1956 (acting district forest officer at Manjimup).

In 1958 he was appointed district manager at Mundaring Weir and this began a long and successful career in forest management and administration.

Peter became the first Chief of Forest Recreation

and Extension Services in the Forests Department and subsequently the first Director of Forests in CALM.

Along this road were many notable achievements.

Peter was the first champion of recreation in WA forestry and he conceived and implemented the idea of the Bibbulmun Track.

He was also involved in the establishment of fore-

stry stations in the north west.

In addition, Peter was highly regarded as a fire fighter and a manager.

Outside the job Peter was active in scouting (he became WA's Chief Commissioner) and in the Institute of Foresters, of which he was a long-standing chairman and a Fellow. In 1976 he lectured in Land Economy at the WA Institute of Technology.

A Message of Thanks

It has been a very hectic but successful year for CALM.

Thank you for your dedication and hard work.

Compliments of the season. I am confident that we will meet all of the challenges next year equally successfully.

SYD SHEA
CALM Executive Director

HOOKED ON
NUMBATS Pg6



FROM MY DESK

Elsewhere in this issue, there is a message from Executive Director Syd Shea, commenting on the events of 1989, and thanking all CALM staff for their many and varied contributions.

Syd was on a well-earned holiday for a few days at the time of publishing this issue of CALM News, so it fell to me to put down my thoughts for a "From My Desk" column at the end of the year and the end of the decade.

The task of summarising in a few words an organism as complex as CALM, with all its arms, legs, and other organs, its interaction with the environment and its response to stimuli or calamity, is an enormous one. It is also one I don't quite feel up to writing at this stage of the year!

What I would like to do is comment on our amazing spirit and attitude, because this in the long term is what will enable us to survive and to prosper.

In my travels around CALM over the last twelve months, two things have often struck me. The first is the way CALM people are never satisfied ... there is always a desire to do things better, to find new and better solutions to the many problems of wildlife conservation or land management, to come up with innovative ideas across the whole range of our activities and interests, and to streamline procedures.

The second thing that impresses me is the energetic and positive way people get on with all these ideas and action plans. The CALM scene is enormously dynamic — it seems that no sooner has an idea emerged than someone is implementing it, a second person is improving upon it while a third has already discarded it in favour of a new scheme which makes the first one superfluous.

Of course this situation can be rather fatiguing, and it does generate some difficult internal communication problems. We also have to accept the risk that some of our schemes and ideas are going to fail. And there are still some areas (such as job design and rewards for our wages staff) where we need to do a lot more thinking. But overall, it is very healthy.

So, I won't attempt to summarise achievements or difficulties, but will simply remark that I think we have continued in 1989 to work hard and to apply a good spirit and attitude to identifying and solving problems, to improving our efficiency and productivity and thereby achieving our goals in wildlife conservation and land management.

I join with Syd in thanking you all and wishing you a great 1990.

Roger Underwood, General Manager.

Forging links

Exchange visits have helped to forge strong links between Aboriginal trainee rangers in WA and the Northern Territory.

Training Officer Bruce Werribone and 10 Aboriginal trainee rangers from the NT Conservation Commission visited Purnululu (Bungle Bungle National Park) in the Kimberley in October.

They visited Cathedral Gorge, Echidna Chasm and many other scenic spots in the Park and flew over the Bungle Bungle massif by helicopter.

In the evenings they enjoyed the hospitality of the Purnululu Aboriginal community, the traditional custodians involved in managing the Park.

Soon afterwards, CALM's district manager Mark Pittavino, and Purnululu trainees Paul Butters and Alex Rogers visited Katherine in the NT.



(From left): Raymond Wallaby, Alex Rogers, Mark Pittavino and Bruce Werribone near the entrance to Echidna Chasm.

Twenty-five members of the Aboriginal community at Purnululu, led by tribal elder Raymond Wallaby, also made the trip to Katherine to view the Katherine Aboriginal Ranger Training Program and TAFE College.

While there, Mark, Paul and Alex got a taste for a bridging course the Katherine trainees are taking, by participating in some of the

subjects.

They met all the Conservation Commission staff at Katherine and the Kakadu trainees and had a good look around the Nimituluk National Park (Katherine Gorge).

CALM is now investigating the feasibility of the trainee rangers participating in the bridging course at Katherine (run by TAFE and jointly developed with

the Conservation Commission).

The course was specifically designed for Aboriginal people and brings rangers to year 10 or 11 level, so that they are able to complete their ranger's certificate or a tertiary qualification in land management.

The Purnululu community members were extremely impressed with the course's quality.

"They have a very strong commitment to the future of the trainees," said Mark, "it was very pleasing to see."

Katherine is only five hours drive from Kununurra and the country is quite similar.

The trainee rangers have relatives in the area and would have the support of their own people while undertaking the course.

Praise for Gil Field

Dear sir,

On a recent visit to WA to attend the Royal Australian Institute of Parks and Recreation annual conference, I had the great pleasure of hearing one of your officers speak to the conference about interpreting the environment through the park system. His name was Gil Field.

Mr Field presented what

was to me one of the most interesting and inspiring sessions of the conference.

My profession as a parks technical officer involves contact with many people in the parks and interpretive field and it is a great pleasure to hear an officer who takes a professional approach to his job with obvious dedication.

Inspired by Mr Field's talk, I armed myself with some of the interpretive

literature available from your Como office and headed off to visit many of the sites. The staff at the Como office counter were extremely friendly and helpful, even though they were run off their feet by boards of people wanting information.

The department's interpretive facilities are among the best I have seen, congratulations on your innovative approach. The

production of literature and guide books were of the highest standard.

Once again, congratulations on your department's approach to park management and to your excellent staff. The promotion of professional park management will excel through the efforts of organisations like CALM.

Yours sincerely, Ian Perkins.



Wheatbelt regional manager Ken Wallace shows field day participants some of the reserve fauna.

Lake field day is a success

A successful field day was recently held at the Lake Magenta Nature Reserve by the reserve's management advisory committee and CALM's Katanning district staff.

Sixteen invited Shire representatives and owners of adjoining properties toured the reserve by bus.

Numerous stops enabled

by Greg Leaman

those attending to examine and discuss management activities and problems.

Wheatbelt regional manager and management advisory committee chairman Ken Wallace chaired the day's events.

Ken explained the significance of the reserve and outlined CALM's strategies for managing the area, particularly for fire.

Some of the issues addressed by advisory committee members Bob Twigg, Martin Ryan and Wally Newman included the role of the committee, damage to Yate trees by lerp, illegal access to the reserve and hunting.

Katanning reserves officer Mal Graham also discussed present management practices relating to rare flora and control of introduced plants and animals.

Considerable useful feedback on management issues was received from participants.

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Foresters "up for adoption"

First it was an "Adopt a Park" scheme in the South Coast Region. Now Collie District has a new public participation initiative — "Adopt a Forester" — thanks to senior forester Alan Hordacre.

The scheme allows schools to call on a CALM forester to help with environmental studies and classroom sessions including topics such as wildlife management, fire control, tree growing, salinity and recycling.

The scheme has been adopted by 11 schools.

"I felt our staff had a lot to offer the local community," Alan said "and that they could provide a balanced view of issues ranging from the environmental and social benefits of forests to recycling.

"By having regular contact on a wide range of issues and projects, the benefits for all involved are better than the once a year session such as the annual Arbor Day lecture."

At the Collie Senior High School, adopted foresters have also been explaining what CALM is, what it does and what it offers.

Alan said that before the program began, few students realised there were apprenticeships in mechanical and fabrication trades and positions for ecologists, cartographers, marine biologists, journalists and artists — to name a few.

Collie District has also created opportunities for students to experience some of these professions with their adopted forester.

Many projects have been suggested and implemented since the adoption programme started in July.

Projects, however, have to be environmentally-based, socially worthwhile and personally fulfilling before Collie District will become involved.

Alan believes staff will benefit from the public speaking experience and will also feel more part of the local community than before.

Firewood tour

A successful "firewood tour" was held last month by Northern Forest Region.

Ten CALM staff participated in the tour, which was held to help counter and administration staff deal with

public enquiries about firewood gathering.

It was found that staff attending the tour had a lack of understanding of basic CALM operations. However, most enjoyed the learning experience.

Our fit cadets

by Donna Green

In October CALM's first year cadets entered Nannup's event of the year, the "Jarrah Jerkers Jog".

The teams started in two minute intervals, with four competitors at one time carrying a 50 kg railway sleeper to Barrabup Pool and return. This is a total of 50km up and down hills, with the majority of the track on gravel roads.

The cadets started off last with the "Deviates" Air force team. The cadets soon sprinted out over the Blackwood River, passing the "Deviates", as they sang the Forest Ranger theme song.

One kilometre into the event and the cadets had their first hill to tackle. They proved to be as fast running as their tree planting and took the same time as the winners (Ahh Soles)

to complete the first section.

Nine kilometres into the event the cadets streamed past the Navy lads, then the Nannup Exports (who spent too much time training in the pub!).

It was at the half-way checkpoint — Barrabup Pool, that the cadets' support crew had to refill the water bottles for the desperately-needed fluid intake.

With a boost of energy they went on to pass "Plan B" who needed 15 people to stay in battle with the CALM team.

The cadets cruised home in a time of 1 hour 51 mins — only 11 minutes behind last year's winning time and only 25 minutes off the 1989 record time.

Overall the cadets finished in fifth position, an average of 10.8km per hour.

Sponsorship Deal

A sponsorship arrangement can go a long way — in fact as far as Windjana Gorge.

Thanks to Gascoyne Trading and West Kimberley District Manager Allen Grosse, an agreement was made to transport a new generator to Windjana Gorge, free of charge.

The six-day trip started on September 1.

Gascoyne Trading marketing officer Barbara Fynn said the company was proud to be involved in the special project as it was aware that the installation of the generator with its slow-revving diesel unit

would be advantageous.

"It will also help make conditions a lot more comfortable for members of the public who visit the area," she said.

The generator will also supply power to the mobile rangers caravans and drive a submersive electric pump for water supply to the park.

This will benefit the public as an efficient and adequate water supply will be available. All these benefits are due to the sponsorship agreement.

Allen Grosse said that, if approached the right way, it was possible to gain assistance from the corporate sector.

New Nuyts is unveiled

New facilities for visitors to Nuyts Wilderness in Walpole-Nornalup National Park were officially opened last month.

Southern Forest regional manager Alan Walker opened a new swing bridge over the Deep River at the entrance to the wilderness walk trail. A new trailhead information shelter and an interpretive brochure were also launched at the ceremony.

Alan paid tribute to the many CALM staff who had contributed to the projects.

In particular he praised the work of Tammie Reid who has been regional interpretation officer for the past two years. She has left to accompany her husband Ian, who has been trans-

ferred to CALM's Busselton district.

Alan also commented on the strong bond which is forming between CALM and the local Walpole community.

"The contribution of the people of Walpole to the planning and management of this National Park cannot be underestimated", Alan said.

"Many people have contributed countless hours helping CALM with data collection, workshops and advisory committees. We are very grateful for their efforts."

Alan also congratulated Walpole's Bill Jackson for his prizewinning photograph in CALM's "Landscape" photo competition.

He also thanked the Gerner family for allowing bushwalkers access through their property whilst the log bridge was being replaced.

A new bridge became necessary when flooding in 1980 washed away the old log bridge. The latest cable technology was used to provide a reliable replacement.

The area's new visitor information shelter contains a bushwalker registration station. Upwards of 3,000 bushwalkers use the area annually, and there have been incidents of searches being mounted for bushwalkers who have not followed rules essential for safety.

The new brochure, titled "Nuyts — A Wilderness Experience", was compiled to give a sense of discovery and awareness of the environmental values of the wilderness area to park users.

The original park of 12,000 ha, declared in 1921, will grow to 15,000 ha with the addition of the Giants State Forest.

As well as the opportunity for world class recreational facilities, the park is the home of many rare species, including the three tingle tree species, red flowering gum and several orchids.

LEFT: Planner Vanessa Smith leads CALM staff over the Nuyts bridge.



Role vital

Reprinted courtesy of the Warren-Blackwood Times.

National parks play a vital role in tourism, CALM's Chris Haynes told a gathering at the WA Country Tourism Association conference (recently).

Mr Haynes said as far as CALM was concerned it was essential that a system was developed and maintained between the Government sector and the main operators for the tourist industry who supply the accommodation and travel.

He said the national parks were simultaneously about use by the current generation of users and conservation and protection of the lands for the benefit of future generations.

"So use is not only possible but essential for an area to function as a proper national park, so long as that use does not spoil the area for those who come after us," Mr Haynes said.

"This notion was enshrined into the character of the USA's Yellowstone National Park, the world's first national park.

"Simultaneous use and protection requires a great deal of management but it is fortunate for us managers that people only use small parts of the land area.

"In what I call the ninety-nine to one rule, this reali-



Chris Haynes presents a selection of slides during his talk.

ty is expressed in that about ninety-nine percent of visitors use one percent of the land area.

"Conversely, only one percent of visitors go out into the ninety-nine percent of the land area.

"This rule is not perfectly true but it enables us to concentrate a great deal of where most of the people go."

Mr Haynes said not only was this good for conservation and protection of the land, but it enhanced the vi-

tor's enjoyment and total experience.

According to Mr Haynes it also assisted in promoting the "conservation ethic" among visitors, not only to national parks but to State forests as well.

He said there was a whole host of measures that needed to be undertaken.

Many of these were being carried out: better roads, walking tracks, rehabilitation of degraded areas, amenities like toilets, shelter, information sign boards and brochures.

"On the subject of infor-

mation there has been a dramatic increase in what visitors require," he said.

"At CALM we have trebled our output in the last four years and there is still demand for more.

"In recent times we have been assisted by the State Government's "Park Improvement Programme" which has already produced some quite outstanding results for modest amounts of money.

"We believe these will be of considerable assistance to the tourist industry which we see as a real partner in these endeavours."

Whale watching popular

Whale watching has captured the hearts and minds of the people of Perth.

Since September, thousands of boatloads of people have viewed humpback whales as they pass through Perth waters between the Marmion Marine Park and Rottnest Island on their annual migration to summer feeding grounds in the Antarctic.

The commercial whale-watching tours run from

Hillarys have given rise to a range of new marine and wildlife management issues.

Newborn calves accompany their mothers and any harassment could result in the separation of family groups, and in some cases, stranding of juveniles.

"In Perth, we probably have greater accessibility to a more reliable number of whales than any other place in the world," said marine

and islands manager Greg Pobar.

"One vessel made good contact with whales on 44 out of 45 tours."

"Management and protection of these animals is important because of their proximity to Perth's large population," said Greg.

Recreational boaters were gradually being educated about the proper manner to view whales without harassing them.

According to national whale watching guidelines, boats should approach whales from a direction parallel and to the rear of them.

They should stay at least 100 metres away from the whales — if they approach any closer, engines can be put into neutral and the whales allowed to come to the boat of their own accord.

Supervising Wildlife Officer Doug Coughran said regular boat patrols had so far observed no harassment of the humpbacks.

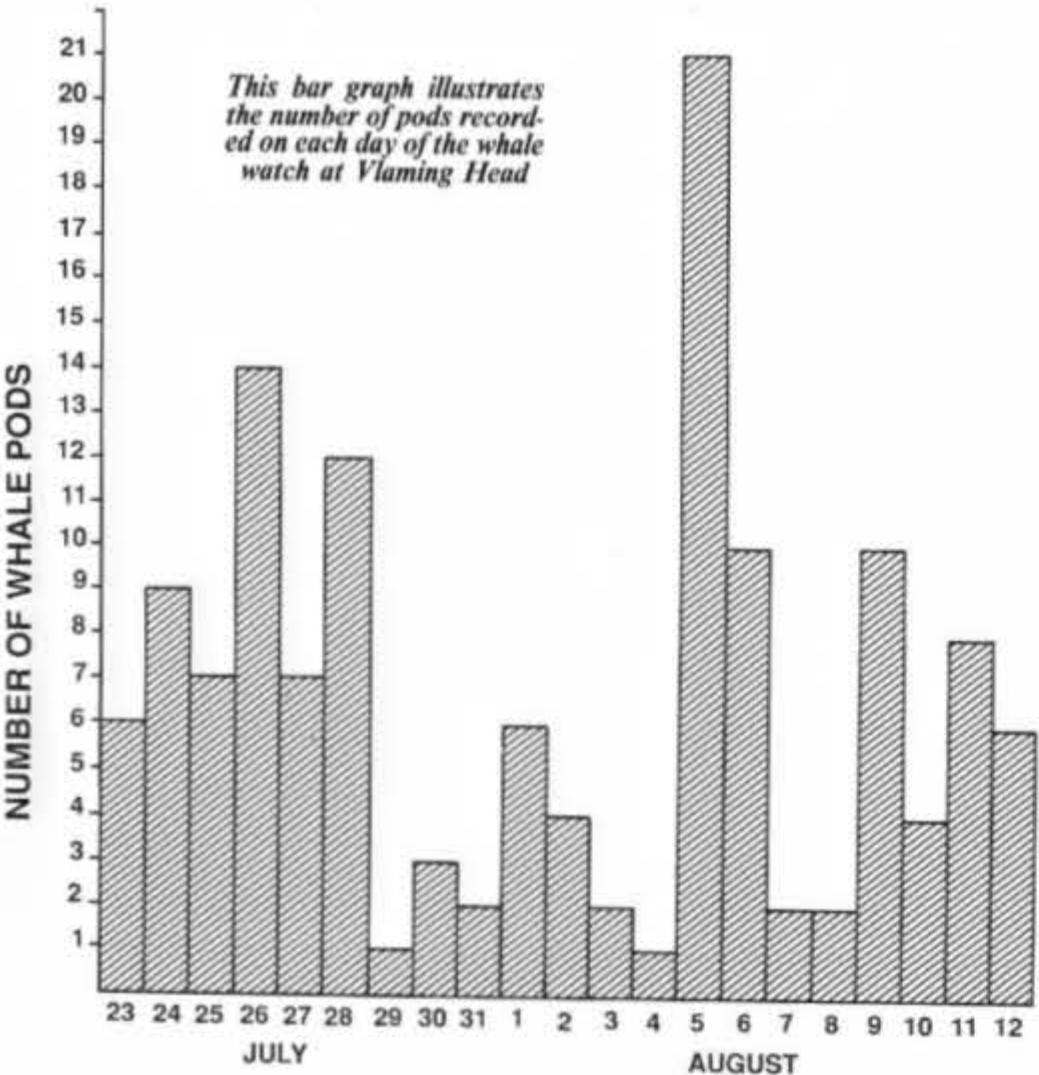
Greg has many stories and photos of humpbacks and their antics. The whales are often in a playful mood; breaching and somersaulting backwards, splashing and tailing. Their distinctive 'songs' can be heard by human ears.

CALM Minister Ian Taylor and Executive Director Syd Shea have also made excursions out from Marmion to view the animals.

"The high profile whale-watching has received in the media is an excellent opportunity to educate the public about the Marmion Marine Park and CALM's role in marine management," said Greg.

He said that CALM would maintain contact with the commercial operators to determine educational and management strategies for next year's season.

Photos by Chris Burton



Humpback count high

Local volunteers carried out a three week whale watch at Vlaming Head north west of Exmouth earlier this year.

Daily observations through binoculars from a lookout revealed some interesting things about migrating humpback whales.

Between July 23 and August 12 observers recorded a total of 137 pods. Numbers recorded each day varied, low numbers tending to be recorded when it was windy as it is difficult to distinguish between spray from whales and ordinary white-capped waves.

If anything, the number of pods recorded was an un-

derestimate of the true number of whales.

The volunteers tried to count the number of animals in each pod, but this proved extremely difficult, especially with pods travelling some distance from shore.

However, by using maximum and minimum numbers (eg by recording that a pod had two or three animals, or that another pod had between three and five) it has been possible to estimate that between 268 and

308 whales passed Vlaming Head during the observation period.

Some pods were observed only once, while the movements of others were tracked for some time.

Of those pods that were tracked, 87 percent were moving north.

Humpback whales migrate into warm, sheltered waters each year to calve and mate.

At the end of winter, they all migrate south again to the food rich waters of Antarctica.

The Vlaming Head whale watch therefore took place while the animals were still on their way to locations used for calving and mating.



Organiser Alan Sands starts proceedings.



ABOVE: Roger Underwood and Hamish Crawford battle it out under the watchful eye of Seamus Mulholland.



Not far to go now...a swimmer runs toward the finish line.



Experienced cyclist Ray Lawrie managed to escape towing a karri log on the cycle leg.



ABOVE RIGHT: The cadets' swimmer nears the shore with his support canoe.

RIGHT: Drew Griffiths takes off for the canoeing leg.

Relay a friendly fight to the finish

This year's Big Brook Relay was a huge success — thanks to the hard work of organiser Alan Sands, CALM staff and Pemberton district who helped him along the way and the 18 teams that fought saw and cycle to finish first.

Of course, there were those who, some said, went out of their way for the prestige of finishing last (Cygnet). And others who even went to the trouble of producing written briefs on all team members — complete with photos! (Frankland River Farnaklers.)

Mention must also go to the Rado brothers, who managed to slice five rings off

their log in just 2mins 36secs!

The crosscut sawing began about 11am, all teams assigned the end of a 30cm log. Runners waited nearby, and when their sawers finished, headed off on an undulating 7.5km course around the Big Brook Dam.

Runners then passed the numbers onto the canoeists who dashed to the water's edge and set off for a 3km paddle around the dam (no pirates reported this year).

From the canoe to the cycle — an 11km pedal around a hillier course than the run and then onto the final leg — the 900m swim.

Only one team was disqualified — the cadets gang — for going the wrong way on

the cycle and finishing first.

First place instead went to L.I.B.S Logs — members of the newly named Land Information Branch.

Second placegetters were Inventree Mob (Manjimup Inventory) and third was Mairy's Mongrels (Manjimup District).

And last, but definitely not least, The Cygnet (Public Affairs) won The Derriere Trophy for their "marathon" effort.

Next year's event will be organised by Pemberton District and held on Saturday, November 3.



Banbury's Peter Bidwell won the Match Splitting competition.

Photographs by
Tanya Maxted
and
Steve Murnane



The Frankland River Farnaklers.



Helmets clash as Dave Hampton (Crawley) and Marg Wilke (Public Affairs) prepare for their cycle leg.



Kelmscott's Sue Moore hands on the team number to a fellow member after the run.

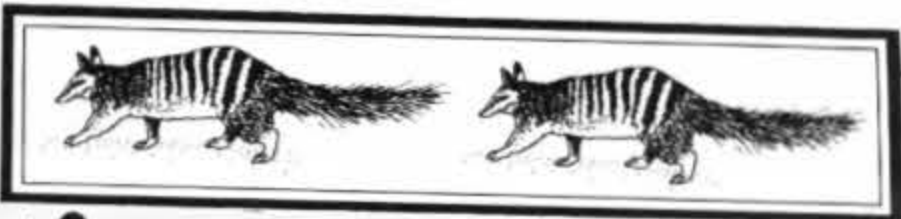


Manjimup planner Vicki Metcalfe tries her luck at match splitting.



Manjimup research scientist Luchlan McCaw underway on the cycle leg.

TEAM NO	TEAM NAME	PT	GROSS CUT	PLIN	CANOE	CYCLE	SWIM	TOTAL TIME	POSITION
1	BUGGERS AND BURNERS	PT	8:24	34:36	57:11	99:21	112:42		9 TH
2	GRAND OXES	PT	8:18	34:42	56:12	74:30	92:16		D/S
3	ABSOLUTE FILTH	PT	9:11	34:10	58:26	82:59	109:11		6 TH
4	L.I.B.S LOGS	PT	5:02	34:26	54:57	74:16	102:58		1 ST
5	MAPPING MANIACS	PT	7:34	40:03	67:31	91:50	105:41		4 TH
6	BUNBURY BULLETS	PT	5:04	33:22	57:36	91:03	109:34		8 TH
7	FRANKLAND RIVER FARNAKLERS	PT	6:25	37:06	62:32	90:16	108:30		5 TH
8	INVENTREE MOB	PT	4:20	33:07	56:45	89:48	105:11		2 ND
9	REGIONAL BARDS	PT	4:12	33:57	53:57	79:18	111:34	136:05	15
10	ENTROPY	PT	4:33	38:14	72:17	94:03	122:44		11
11	RECREATION	PT	4:26	36:42	65:08	100:20	125:49		12
12	SHELTERED WORKSHOP	PT	9:08	32:15	62:40	94:16	109:29		7 TH
13	HOT SHOTS	PT	4:11	32:05	40:16	111:00	130:22		14
14	PUBLIC AFFAIRS	PT	8:15	64:52	93:14	126:00	155:00		17
15	SOUTHERNERS	PT	6:50	35:04	56:52	98:58	119:25		10 TH
16	Mairy's MONGRELS	PT	2:38	24:18	50:26	95:08	105:38		3 RD
17	N'WARA	PT	8:21	46:54	77:52	110:35	141:08		16
18	BRADSHAW BOYS	PT	8:21	40:44	65:37	99:56	127:07		13



Directions given

CALM's Research Division has just released its Research Plan for 1989-90.

Coordinated by senior research scientist Ian Abbott and administration assistant Jeannette Gilmour, the plan details present scientific projects and future objectives. The plan also contains tables listing scientific papers and reports, seminars given by Woodvale staff and new research projects approved during the past year.

Allocation of resources and staff (and the methodology behind this) are discussed in length and the geographical distribution of research programs shown. (There are many factors involved in resource and staff allocation, such as the relative priority of the different programs, research in different geographical areas, and research relating to CALM lands versus other lands.)

Current programs include entomology, fauna conservation, fire, flora conservation, rehabilitation, wetlands and waterbirds.

Significant accomplishments of these programs are summarised in the plan. For example, an operational-scale experiment examining whether a single autumn fire can reduce Jarrah Leaf-miner infestation was set up on a 240ha plot in Collie district as part of the entomology program.

Half was burnt in spring 1988 and the other half in autumn 1989. The hypothesis being tested is that, as autumn fires scorch tree crowns, the flush of new, small leaves would be unsuitable breeding sites.

OUTSIDE FUNDS

External funds were received to CALM's Research Division to carry out and continue with a number of research projects throughout the year.

Major funding bodies during 1988/89 were: Australian National Parks and Wildlife Service (\$93,000), World Wildlife Fund of Australia (\$60,000), Australian Biological Resources Study (\$79,000), Western Australian Heritage Committee (\$10,000), ALCOA (\$90,000), Department of Arts, Sport, the Environment, Tourism and Territories — National Rainforest Conservation Program (\$110,000), Department of Primary Industries and Energy — National Afforestation Program (\$500,000).

In addition \$20,000 was again received from the Department of Agriculture as part of the National Soil Conservation Program for a three-year research project at Esperance.

Results from the experiment could lead to new fire protection practices in jarrah forests.

Progress has also been made with the rehabilitation program: a major review has been published of researchers' long involvement with rehabilitation after bauxite mining in jarrah forests.

The program has seen comprehensive dieback control procedures introduced into mining operations. The program has also made a large contribution to the

emergence of short-rotation eucalypts as a potential farm crop.

Farm tree planting research in drier areas (less than 600 mm rainfall per year) has finished and will be replaced with a project to identify and develop management practices for remnants of native vegetation on farms.

As well as these summaries, a few case studies are provided to illustrate how research conducted by CALM has led to improvements in the conservation of

species and/or the management of land.

During 1988/89, Research Division approved the publication of 50 scientific papers, and 17 seminars were presented to CALM staff.

Cooperation between Research and other Government departments and private organisations has continued. Research staff are often called out in a consultative capacity and collaborative studies have been conducted with a number of Government departments and organisations.



Milk and human kindness are working wonders with Hook, pictured above with Tony Friend. It's not known how Hook lost his paw, but the injury means he cannot dig and has to be fed a mixture of milk and termites.

Nuptial numbats all set to breed

It's nearly numbat breeding time at the Department of Conservation and Land Management's Wildlife Research Centre at Woodvale.

Nine numbats have been transferred to the centre from the Perth Zoo to breed.

January is mating month for the species, one of Western Australia's 31 endangered mammals and the State's native mammal emblem. Their young are born later the same month or in early February.

Numbats have been the subject of eight years' research by CALM senior research scientist Dr Tony Friend (based at Woodvale), who has been working with CALM's field staff, volunteers and work experience students to increase its population and range.

They have succeeded, with one new population established on a wheatbelt nature reserve and another being set up.

Numbats are small, gentle and inquisitive animals. They are about the same size as a squirrel and eat only termites — about 20,000 a day.

They became endangered with the increase in the number of foxes. Another CALM research project based at Kalbarri National Park is finding ways to control fox populations.

Tony studies numbats at

a research area at Dryandra State forest near Narrogin in the wheatbelt.

The 28,000 ha State forest was one of the last strongholds of the species, although they also occur in the Perup forest.

CALM has successfully established a new population at Boyagin Nature Reserve near Brookton and is presently setting up another at Karroun Hill Nature Reserve, 400km north-east of Perth.

"The numbat population at Dryandra was at a critically low level during the late 1970s due to large numbers of foxes," he said.

"Since then, due to fox control and numbat breeding programs, our numbat sighting rate has risen from two sightings per 1000km driving through the forest to 60."

Tony said this represented a population increase of about 30 times.

CALM is presently setting up new populations using animals from the expanding Dryandra population.

When the breeding colony in Perth builds up sufficiently, captive-bred animals will also be released for this purpose.

Numbats were first bred in captivity at Woodvale in 1985 and in 1986 the captive colony was moved to Perth Zoo.

Twelve numbats have so

far been bred in captivity.

The Perth Zoo is taking part in the breeding program and the public can view a pair of numbats in a specially made enclosure that depicts their Dryandra habitat.

It is the only place in the world where numbats are on display.

As well as support from the State Government, financial assistance for the CALM research project has also come from World Wildlife Fund Australia.

This money helped produce a much-needed breakthrough in the development of an artificial diet for numbats with the combined skills of an experienced breeder of dasyurids, Dick Whitford, and Tony Friend.

Based on a diet previously used for echidnas, the mix is an egg and low lactose milk custard laced with 10 per cent termites as well as vitamins and other supplements.

One of the smallest numbats at Woodvale, nicknamed Hook, is presently being fed this mixture as he has lost a paw and cannot dig for termites.

As well as numbats, Tony is studying two endangered marsupials — the western barred bandicoot and the red-tailed phascogale.

Scopewest research

Don't be alarmed if you see ducks wearing coloured nose tags this summer.

It's not the latest fashion — the tags are an important part of a waterbird survey project being carried out in the metropolitan area by CALM and the Royal Australian Ornithologists Union.

The Swan Coastal Plain Project — or Scopewest — involves the surveying and tagging of native bird life on 270 wetlands.

As birds move from one wetland to another their numbers will be recorded by RAOU volunteers and members of the public.

This information will be used to plot the movement of waterbirds on the Swan Coastal Plain and determine how wetland water levels affects them.

Scopewest is funded by CALM, the Environmental Protection Authority and the Water Authority. The project, coordinated by senior research scientist Stuart Halse pays the salary of RAOU waterbirds officer.

A Commonwealth grant of \$106,000 was recently made to the project, which will be used to fund a CALM research scientist for two and a half years.

To help determine move-

ment patterns of waterbirds on the coastal plain, 1000 native ducks will be netted and tagged over summer by CALM research staff and RAOU volunteers.

Four hundred "nestling" waterbirds have already been wing-tagged before they were ready to fly.

Another 400 will be tagged next year.

Anyone seeing a waterbird or duck with a tag is asked to record its number, tag colour and whereabouts, then contact the CALM Wildlife Research Centre at Woodvale on 405 5100 or RAOU waterbirds officer Rodney Verwey on 364 6202.

Tutanning survey

A recent survey of Tutanning Nature Reserve for woylies, tammars and possums has revealed that these species have increased under a fox control program. Woodvale senior research scientist Jack Kinnear and technical officer Mike Onus carried out the survey, which involved both spotlighting and trapping. Jack describes the background to the project and its findings.

by Jack Kinnear

reserve, but Mike managed to locate two areas where woylies were just hanging on.

After five years of fox control, we returned to assess the situation. We were naturally curious and anxious to learn if there had been any population increases.

On checking the traps for woylies, it soon became apparent that the woylies had increased dramatically. In 1984 we managed to catch only seven woylies, but this time we caught 64 for almost the same effort. Indeed, the very first night yielded more woylies than the 1984 total!

What was most pleasing, apart from the increases, was the finding that fox control had enabled the woylie to establish itself in areas of the reserve where it had died out.

Woylies had managed to survive in low numbers in thickets of poison bush and from these areas they have spread out to re-populate the reserve.

Spotlighting is not the most reliable method for censusing animal populations, but even this method yielded reasonably conclusive results.

For example, in 1984 we caught seven woylies and sighted none; in 1989 we caught 64, sighted 15.

For tammars and possums, we carried out seven surveys prior to fox control, and sighted five tammars and five possums. This year we carried out eight surveys and sighted 54 tammars and 60 possums!

There is still a long way to go as these three species have not fully recovered to the levels of 1970.

Tutanning is a fairly large reserve and it will take a while for it to fill. If fox control is maintained, and if the seasons remain reasonable, we can expect further increases and more sightings.

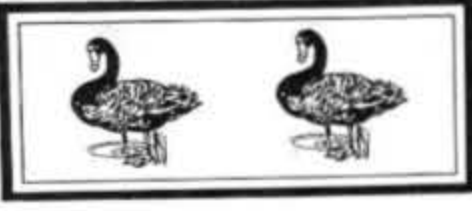
Up to this point, firm evidence regarding fox predation was restricted to rock-wallabies and numbats.

With these latest results from Tutanning, the list of threatened species is now five and it seems reasonable to infer that other species are at risk as well — how many we do not yet know.

I should think that there is now little room left for skepticism regarding the fox threat. If we do not bring the fox under control, then I believe our reserve system will end up supporting only grey kangaroos and the very small marsupials.

Fortunately, after a lot of effort, we did have some success in trapping woylies.

Our trapping success rate was nil for most areas of the





One of the numbats at Woodvale that will be part of January's breeding program.

Stalking the fox

A wild fox cub is the latest addition to Woodvale's research stock of native and feral animals.

Basil is part of CALM research scientist David Algar's studies into fox behaviour.

David has been researching fox control for the past three to four years in conjunction with Jack Kinneer's research program.

With the assistance of technical officer Tom Leftwich, he studies fox density and dispersal. These factors provide information relating to the timing of, intensity and frequency of baiting.

David says the fox control program must be economic as well as effective and he's aiming to produce a manual of control proce-

dures for future operations.

Over the past 10 years, research by CALM scientists has shown that foxes are the major threat to many native species and have the capacity to wipe out a large number of our State's endangered species.

David is presently working in Kalbarri National Park where foxes have caused local extinction of tamar and rock wallabies. Other areas he focusses on include Watheroo National Park, Perup Fauna Priority Area and the Gibson Desert Nature Reserve.

Questions that David is trying to answer include what is the extent of a fox's home range; what food do they prefer; at what age so they leave their mother to fend for themselves, how far do they travel and what is

the mortality rate per litter.

At Kalbarri, he says, 20 percent of foxes diets are native species compared to between 80 to 90 percent in the Manjimup/Perup area.

Most of these are rare and endangered species — woylies, tamar wallabies and numbats.

Foxes that are caught by David and Tom are measured and weighed, then released wearing radio transmitters.

When fully grown, Basil's vital statistics from cub size to fully grown adult will help the present monitoring exercise of attaching radio transmitters to wild foxes.

He will also be fed several kinds of meat to gauge what dishes foxes will take in the wild when it is set as bait.

WOYLIES: The two sketches on this page depict bettongs, or woylies, in natural pose. They are just one mammal species endangered by the presence of foxes and their populations are responding to CALM's fox control program.



AMY CROCKER 1902-1989

by John Watson

The author and artist of CALM's most colourful brochure "Hill Springs" has died.

Amy Crocker died in Norseman Hospital on November 14 — just four days short of her 87th birthday.

Amy was born in Albany in 1902 and, after a short spell at Point Malcolm near Israelite Bay, spent her early childhood at "Hill Springs" near Cape Arid.

On leaving "Hill Springs" in 1910, the family moved to various outstations in the Israelite Bay-Pine Hill-Balladonia area, before Amy eventually married and settled at Balladonia.

Amy has been a continuing source of historical information to the National Parks Authority and subsequently to CALM.

She provided many of the names for geographical features in what are now Cape Arid National Park and

Nuytsland Nature Reserve, and in 1981 she wrote the text for the brochure on "Hill Springs". This brochure, which is presently being reprinted, also includes colour photographs of four of Amy's paintings of the Cape Arid area.

Various NPA/CALM staff and their families have kept close contact with Amy over the years including Len and Moira Otte, Chris and Mary Hart, Phil and Caroline Gray, Richard and Jackie Pemberton, Libby Sandiford (South Coast Heritage Trails Project), and myself.

In 1981 Amy and husband Jack were driven down to Mount Ragged and Pine Hill to be present at the scattering of Len Otte's ashes at Mount Ragged. This was one of Amy's last visits to the park.

Amy's death is a very sad loss to all who care for and relate to nature, but her memory will live on forever through her paintings and other historical reminiscences.

New booklet

A new educational booklet has been written for Mundaring Weir.

"Discovering Mundaring Weir" is a guide for teachers and group leaders taking students on field-based educational trips to the Mundaring Weir region. The three specific areas covered are the South Ledge Track, Portagabra Track and O'Connor Study Site. Rather than recommend particular activities, the booklet provides background notes, sketch maps and ideas for "further investigations". It is designed to complement the school syllabus and encourage teachers to develop their own programs.

Primary school students are given guidelines to encourage an understanding of plants and animals, where and how they live, and how changes affect their environment.

Secondary school science and social studies students can delve deeper into ecological concepts, ecosystems and human modification of ecosystems.

Much of the groundwork for "Discovering Mundaring Weir" was carried out by Mundaring District forester Len Talbot. It is hoped that study guides will be produced for other areas in the future.

Fines over feral pigs

The following article was sent to us by acting Nannup district manager Roger Banks. Reprinted courtesy of the Farmers Weekly.

PERTH: Two men who attempted to move feral pigs from the CALM forest at Nannup were fined by magistrate Kelvin Fisher at Manjimup this week.

Brian Carl Flynn, of Colle, and Trevor Lewis O'Sullivan, of Kojonup, pleaded guilty to moving a declared animal contrary to the Agriculture and Related Resources Protection Act.

They were fined \$100 each with \$26.70 costs. The two men were arrested last

March after a chase through forest tracks in Cwondinup-Kirup area.

When stopped by police and CALM officers they had shotguns and two black boars hog-tied in the back of their utility.

Outside the court, Agriculture Protection Board regional officer Greg Power, said feral pigs were an increasing problem in the jarrah and karri forest.

They were high damaging to the natural environment and to agriculture.

The destroyed native plants and animals, spread diseases and attacked crops and pastures on farmland close to the edge of the forest.

Abalone season well managed

The metropolitan abalone fishing season began in October within the Marmion Marine park and on Penguin island.

Marine and Islands manager Greg Pobar said that investigation and consultation with the Department of Fisheries had paid off with the continuation of a well-managed season within the Marmion Marine Park.

Greg said this year's season was based on the success of last year's management strategies which included additional Fisheries Inspectors, high management profile, education campaigns and close monitoring of catch efforts.

"The management of the abalone is much more than that of resource management," Greg said.

"While the Department of Fisheries oversees and

directs the season, in consultation, issues such as public attitudes to the high profile fishery, removal of other marine life, safety of the fishermen and the arbitration of conflict with other user groups are responsibilities that CALM deals with in marine parks and on island reserves."

CALM officers regularly assist Fisheries Inspectors in the field.

This year's attention is being shifted to the islands of Shoalwater Bay, particularly Penguin Island, where fishing effort and impacts on local reefs are being determined to aid in the development of management strategies for the island's plan.

Anyone interested in the abalone season or fishing should contact Greg on 448 5800.



Gang members in front of two of their trucks: (from left) Steve Sweetman, Neil Osman, Ted Haddrill, Gary Hartnett, Dave Perkins, Greg Napier, Simon Caunter, Don Harrison, Terry "Handle" Wallace, Arthur Pettifor. (Photograph: Steve Murnane.)

Gang's efforts rewarded

It was the hottest day in seven months when Executive Director Syd Shea met with some 40 treeplanting gang members and staff from Gngara, Yanchep and Wanneroo.

The heat highlighted the uncomfortable conditions the gangs work under during the fire season.

There were 80 fires in the Wanneroo District during the 1988/89 season. Twenty seven in the pine plantation resulted in only four hectares being burnt.

Apart from an unusually high incidence of lightning strikes it had been an average fire season as far as weather conditions were concerned.

Dr Shea acknowledged

an outstanding safety performance, and congratulated the gang for demonstrating their teamwork in action.

"The fire crews' dedication and effectiveness in fire control was exceptional throughout the season," he said.

"Staff were spending two out of three weekends on call.

"One of CALM's strengths is the diversity of staff from different backgrounds, its many locations throughout the State, and the range of tasks it performs."

Following a question and answer session, team members were presented with a tree planting badge for their efforts in this year's tree planting season.



Culture shock is one way to describe a "Top Gun" pilot's change of pace from flying RAAF Macchi jets to one of CALM's fire spotter planes.

Mick Neille flew RAAF aircraft until he failed one of the many rigorous and stringent flight tests air force pilots have to pass at regular intervals. He is now a seasonal spotter pilot based at Nannup.

"It was a bit of a culture shock stepping from a high speed Macchi jet into a slow fabric-covered spotter plane," says Mick.

"However, the work is just as challenging and the

RAAF loss is our gain

Left: Mick Neille ready to take to the air.

job we do in fire control is of enormous importance."

Mick is one of five pilots at Nannup. At the end of the fire season he hopes to secure a position with an air charter company.

One that didn't get away

Esperance wildlife officer Bernie Haberley though he was safely out of Kalgoorlie after a recent relieving work trip — when he was recalled by radio.

(The Kalgoorlie district is rich in outback characters and Bernie says he tends to look forward to such relieving requests with mixed feelings ranging from excitement to dread.)

The radio message was: "Please go to the Kalgoorlie Hospital and identify a snake that has bitten someone."

The reptile's description given over the phone was reminiscent of an animal possibly painted by Ken Done.

So, armed with every

conceivable piece of literature relating to these low, lengthy critters, he fronted up to the hospital's casualty section and was met by a rather excited doctor holding a "Woolies" plastic bag at arms length.

"Here it is," the doctor said, "we reckon it's a Butler's snake."

Glancing inside, Bernie observed one deceased reptile in various lengths.

Following the identification of the snake — and yes, the doctor had correctly identified the species (the yellow-bellied black snake, *Pseudechabas butleri*) — Bernie requested the now rapidly decomposing reptile (in 36 degree humid conditions) as an office specimen.

The doctor told him he'd

have to see the old bloke on the bed in casualty as he may have still wanted it.

Apparently the old prospector had been in his camp somewhere out of town when the reptile entered.

Being short of an evening meal he went to grab it and was bitten.

Bernie walked around the corner into casualty and was confronted by a near-naked elderly gentleman adorned with a selection of wildlife-orientated tattoos.

He asked if he could keep the contents of the bag.

"Yar . . ." the old man said, "I won't be needing it where I'm going."

He added: "But if I don't go there, I want it back. They're good tucker. OK?"

Marron record

Volunteers are needed to help the Fisheries Department's marron research.

The department's Fisheries Research Branch monitors marron stock levels with the help of volunteers who record their catches and fishing trips in supplied log books.

The information gathered in this research program is vital for fishery management and the long term conservation of marron breeding stocks.

For further information contact Cliff Fellows at Freshwater Research Unit, Fisheries Research Branch, WA Marine Research Laboratories, P.O.Box 20, North Beach 6020. Or phone (09) 447 1366.

Minimum legal size for marron is 76mm, measured along the carapace length. Each licence holder can bag 20 marron per day. Open seasons for 1990 are January 1 — February 28 and April 7 — April 22.

To promote snare fishing of marron, two trial areas have been declared "snare fishing only" in the Warren River within Warren National Park and Shannon River downstream from the Shannon Dam in Shannon National Park.

The biggest marron on record weighed 1.8kg and measured 171mm along the carapace.

Safety figures

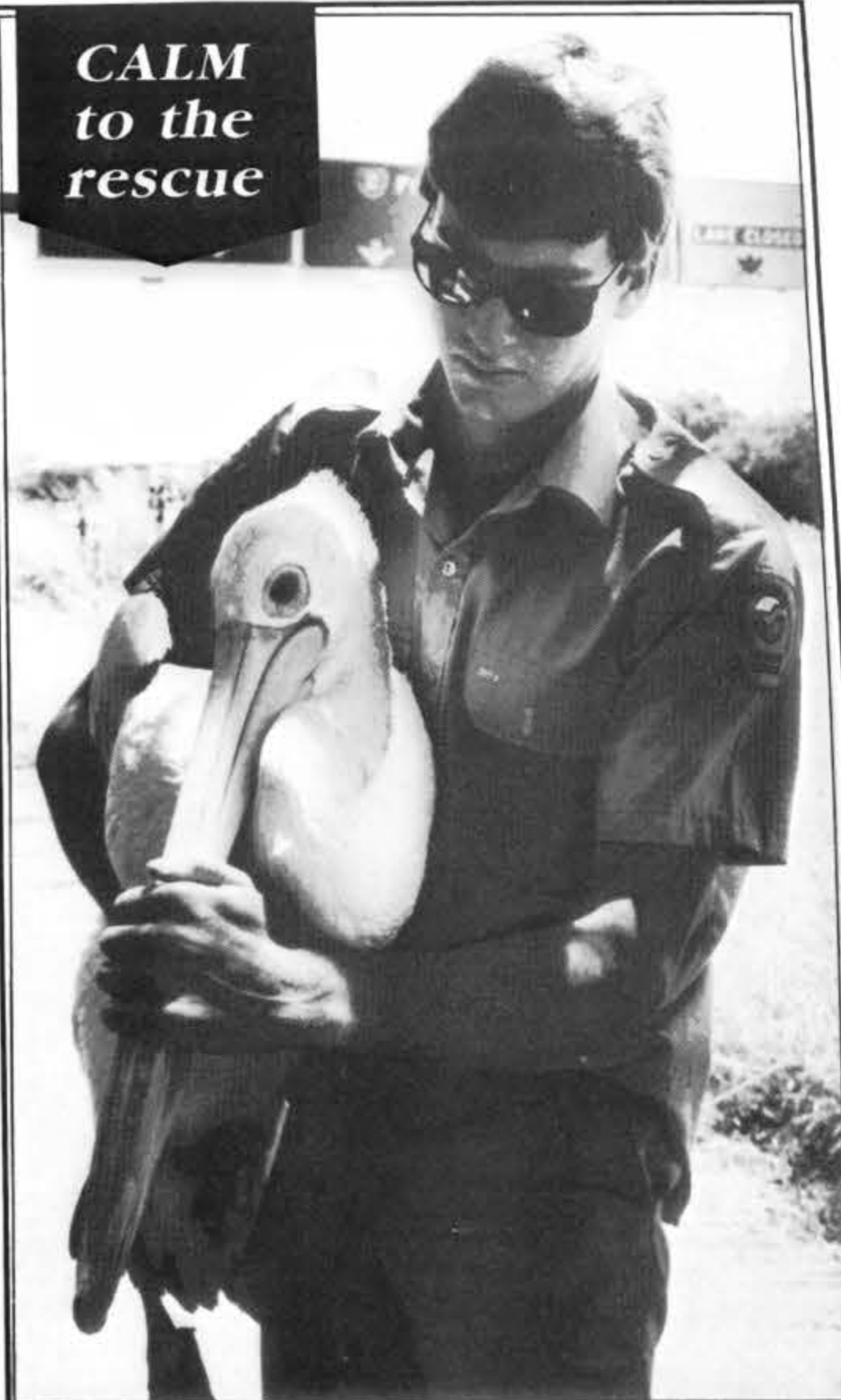
The number of days lost due to accidents in the 12 months to October 1989 was 1310.

That's 594 up on the number of days lost to October 1988.

The number of medical treatment accidents was 130, up from 124 for the previous 12 months.

Last October there were three lost time accidents and seven medical treatment accidents. This year the figures were two and eight respectively.

Lifting (muscle and back strain) and slips were the most common causal factors in the current injury rates.



Stealing fish from a fishing line may have contributed to the demise of a young pelican on the Swan River recently.

Several members of the public reported seeing the bird, pictured above with wildlife officer Sean Hazelden, near the Milyu Nature Reserve on the west side of the Kwinana Freeway.

Its beak and wings were badly entangled with fishing line, but despite its predicament, the bird managed to evade wildlife officers for several days.

Then two canoeists rang the department to report they had caught the pelican and cut most of the fishing line off the bird — but it couldn't fly and they feared it had swallowed a fishing hook.

Later that morning, Sean and fellow wildlife officer Andrew Horan spotted the

injured bird with a group of other pelicans. By now, the injured bird was easily caught, five days after it was first reported; his wings badly injured where the line had cut into him.

Andrew and Sean bundled the bird into a CALM vehicle and drove him to the Native Bird Hospital in Mundaring where he was still being cared for as CALM News went to press.

Work on herbarium

by Penny Hussey

manager) had led the weekend's collecting expedition, but on this occasion we sought out our own sites.

Ted Griffin, a botanist who has done a lot of work in the area, gave us a copy of his list for the park, which contains 355 species. Of these, 181 are already represented in the field herbarium, so the group set out to collect anything else. By going through the unallocated herbarium specimens, and by assiduous collections in several areas, we raised the list to 402 and the collection to 233. A most satisfactory result!

ing in getting the work processed — last year's Alexander Morrison National Park specimens are still in the presses — everyone volunteered to do the work at a busy bee during the summer, if it can be organised.

We were fortunate in having Elizabeth George and Margaret Pieroni, who went through the Verticordia and Dryandra collections respectively and made sure they were properly identified.

An interesting extra this year was bird banding. Pery and Alma de Rebeira from CSIRO set up mist nets in the bush and talked about the value of the technique.

Although windy conditions kept most birds at home, a number were netted and we watched with interest as their vital statistics were recorded.

The weekend finished up with a visit to the proposed Coomaloo National Park, where we were pleased to find good specimens of the Bronze Star Orchid, *Thelymitra stellata*.

We would like to thank those members of CALM who made our visit possible — regional manager Geoff Mercer for allowing use of the facilities, Keith Hockey for making the shed habitable and Ken Borland for bringing all the materials from Moora.

Any suggestions for where the volunteer taxonomists could go next year?



Wildflower enthusiasts met at Watheroo National Park in October to continue work on the field herbarium there.

The volunteers were from the WA National Parks and Reserves Association and the WA Wildflower Society. This is the third year that the group had worked in the area collecting, identifying and pressing specimens.

In previous years, Kelly Gillen (then district

Because of the obvious difficulty the district is hav-

STAFF NEWS

Promotions

Glyn Yates, to Forester Grade II, Collic; Jeff Bennett, Forester Grade II, Manjimup; Louise Burch, Senior Graphic Designer, Public Affairs, Crawley and Mike Green, to Research Officer, Land Information, Como. Leigh Davis gained promotion to Project Leader, Land Information from the Department of Land Administration.

Transfers

Peter Bidwell, Senior Forester (Ops) from Walpole

to Bunbury; Geoff Kregor Ranger-in-Charge and Steve Dutton, Ranger, both to Millstream-Chichester National Park.

Retirements

Jock Sclater, manager Timber Production, retired October 31 after more than 30 years' service. He began as an Assistant District Forest Officer, Forests Department at Dwellingup. Ron Chandler, Ranger-in-Charge, Yanchepe, on 28 September 1989 after 19 years of park work; Norm Rice, Admin Assistant, Collic, after 18 years.

