

Our cadets land in (cold) water

GREATER PROTECTION FOR ESTATE



Second year cadets recently spent two weeks' training on Penguin Island. One of their tasks was to install this new floating sign near Seal Island. Story and photos pages 4-5.

Greater protection is to be given to Western Australia's national parks and a new category of 'conservation park' is to be created.

CALM Minister Ian Taylor said the new measures were contained in the amendments to the CALM Act 1984 introduced into Parliament today.

"The Act will be amended to create conservation parks in areas which were of conservation and recreation significance. Many such parks will be created from State forest areas," Mr Taylor said.

Conservation parks would have high conservation values but not have the national significance of National Parks.

The Minister said a prime

example of an area which would qualify as a conservation park was Lane Poole Reserve near Dwellingup.

All State forests would be designated for specific uses as conservation, recreation, timber production and water catchment areas, or a combination of these. This would provide a clear public commitment and understanding of the intended purpose of each State forest area.

"Much greater protection for national parks and all lands controlled by CALM will result from substantial increases in penalties," Mr Taylor said.

The penalty for damage to land controlled under the CALM Act would increase from a \$1000 fine or six months' imprisonment to \$10,000 or 12 months' imprisonment.

"There have been some

instances where those responsible for damage to National Parks have received minor fines. The changes will give the courts the option of being more severe with offenders," Mr Taylor said.

Other amendments to the CALM Act would allow for Aboriginal representation on the National Parks and Nature Conservation Authority, for protection of archaeological sites on CALM lands and for unions to be represented on the Forest Products Council.

"In the past 12 months, the size of the conservation estate in Western Australia has been increased by more than 500,000 ha.

"These added measures will mean a greater area of the State can be more effectively managed for conservation and public use," Mr Taylor said.

Metro Parks Adopted

The major regional parks in the metropolitan area are to be managed by the Department of Conservation and Land Management.

CALM Minister Ian Taylor said today the regional parks incorporated many of Perth's important wetland and coastal areas.

"The new parks and management arrangement will bring us closer to protecting large areas of the metropolitan area for the public," Mr Taylor said.

Under the new scheme the Department of Planning and Urban Development

would continue to be responsible for the overall planning and acquisition of lands for regional open space.

"DPUD has planned Perth's regional open space system which will, when completed, be comparable to any in the world. The 'green belt' has a number of components including land for parks and recreation which have been acquired by the Government over the last 30 years."

Much of the land for parks and recreation was currently vested in local authorities.

However, the main thrusts of the proposed metropolitan regional parks plan which included Joon-dalup, Herdsman Lake, the Canning River Wetlands,

Beeliar and Rockingham Lakes was for the protection of conservation areas and improved access for the public.

State Cabinet has approved the appointment of a task force to investigate the rationalisation of Government resources which are currently being expended on regional open space.

"This task force will be given four months to resolve the questions of funding, industrial matters and staff restructuring. It will also clearly define the roles of CALM, DPUD and other agencies in the future planning management and administration of Regional Parks and open space.

"There will be no alteration to existing arrangements with local government. In fact, the key to success of the scheme will be the maintenance of a close liaison with local councils," Mr Taylor said.

Facility Opened

Executive Director Syd Shea officially opened a training facility at CALM's Wood Utilisation Research Centre in Harvey earlier this month. Established by the Forest Industries Training Council, the facility features a new saw bench which will be used to train both department and industry people. The centre's facilities were inspected and a demonstration of equipment given by centre personnel. Photo courtesy Harvey Reporter.

Managers review progress — set new goals for 1990

CALM's regional and branch managers met in Perth during October for their annual session of reviewing progress and setting new goals for the year ahead.

During the week's meeting managers also undertook a short tour of CALM's reserves in the Metro Region, where they discussed the concept of the CALM "Shop Window" and attended a special training course on negotiation skills.

Executive Director Syd Shea updated managers on the political influences on

CALM and emphasised the need for managers to act as true professionals in analysing issues and developing solutions to problems. "Dedicated, professional public servants are what make the Westminster System of Government work", Dr Shea said.

On the final day of the conference, managers identified four areas where CALM needed to do a much better job:

Internal communications: It was felt that CALM people and their families need to be given much more in-

formation about what CALM does and why we do it. If all CALM staff are better informed they will be able to do their jobs better, more easily answer questions from the public and can become better ambassadors for conservation and land management.

CALM's philosophy: Many people, both inside and outside CALM, do not understand the basic philosophy underlying many of CALM's activities. What is the rationale for our forestry, wildlife and recreation programs? Managers felt this should be

clearly spelled out and available to everyone in the form of a booklet and a video.

Participation in management: CALM has made huge progress in public participation in conservation and land management, but we can do more. We also need to work harder at ensuring the participation of more of CALM's staff in many areas of decision-making. Participatory management is a factor in the success of the safety program in CALM.

Priorities: Managers felt they needed better guidance

on CALM's priorities. With greater expectations on them, but no increase in resources, managers have to make tough decisions. What are the most important programs in each region? Where should they focus resources? What programs can be dropped off?

Dr Shea thanked managers for raising these issues and undertook to see they were followed up. He said he was especially keen on improving the flow of information to forest and park workers in districts and to their families.

— ROGER UNDERWOOD



Regional and branch managers inspect Penguin Island.

From my desk

The decision by the Government to transfer responsibility for the management of regional parks to CALM presents a major challenge for the department.

It also provides an excellent opportunity for CALM to greatly increase its interaction with the people who live in the metropolitan area. While CALM's presence, particularly through its activities in the Marmion Marine Park, is increasingly being felt, the vast majority of our work is carried out in areas remote from where the bulk of Western Australia's population resides.

Our involvement in the management of regional parks in the metropolitan area will give us the opportunity to interact with large numbers of people and demonstrate our competence in managing the land while allowing as many people as possible to use and enjoy it. This is never an easy task and while we will always have our criteria, I am enormously proud of the professional job being done in all areas of the State. I don't mean this in a self-satisfied way. We still have huge tasks before us; but it is healthy having an occasional look over the shoulder to see where we have come from.

Look at how we now sit with management plan preparation. Less than five years ago we had almost none in place and the daunting task before us of covering all those individual reserves. Today about two-thirds of the area of national parks have a plan in place or in preparation. Admittedly, one of these, Rudall River, covers 1.5 million hectares, but I believe this is a real credit to the many people — including members of interest groups and the general public — who have contributed to a process led by CALM officers.

That is the kind of challenge we face with regional parks. First, in conjunction with other government agencies, we have to report on how the responsibilities can be best organised, and then we have to get on with wise use of resources to achieve the difficult, but attainable, balance between recreation and conservation. This will be in what Drew Haswell calls the shop window, a rare opportunity.

SYD SHEA,
Executive Director

Guide to north in production

A full-colour guide to natural areas from Shark Bay to Kununurra, along similar lines to 'Wild Places, Quiet Places', is being produced.

Carolyn Thomson from Public Affairs and Bob Symons from Land Information recently spent a month visiting the Kimberley, Pilbara and Geraldton-Greenough regions to compile information for the book.

Carolyn will edit the publication while Bob field-checked the maps that will be a major feature of the book.

During the trip they encountered a stranded false killer whale on the beach at Onslow and a baby emu with its leg tangled at Exmouth.

Bob and ranger Steve Strachan spent half an hour running around the bush

trying to catch the emu, a task made more difficult by the protective father and the rest of his brood.

According to Carolyn, a helicopter ride over the Bungle Bungle massif was definitely one of the highlights of the trip.

She said it was also interesting to meet the Aboriginal rangers from the Katherine National Park in

the Northern Territory, who were on an exchange visit to the Purnululu National Park at the same time.

Another highlight in the Kimberley was travelling up the Gibb River Road with new district manager, Allen 'Goanna' Grosse, an experience not to be forgotten.

A great many people assisted the pair with their

help, expertise and hospitality, including Ron Shepherd, Doug Myers, Steve Strachan, Mark Pittavino, Allen Grosse, Bob Taylor, Ron Hollands, Kevin Hughes, Hugh Chevis, Keith Cunningham, Geoff Kregor and Greg Oliver.

The book will be full-colour and published by May next year, just in time for the peak tourist season in the North-West.

NATURALISTS HEAD NORTH

By Vicki Hamley

Digging for earthworms in a Kimberley rainforest or collecting Acacia seeds may seem a strange way to spend one's holidays. But for a group of amateur naturalists it was the chance of a lifetime!

Kevin Kenneally, a Herbarium senior botanist, and Kevin Coate, a tour operator specialising in natural history, have, through their affiliation with the WA Naturalist's Club arranged long-range field trips to the Kimberley for the past five years.

It's an innovative idea where voluntary assistants pay to participate in field trips to the remote region.

This year's two-week trip in June targeted the East Kimberley to gather data for a number of current CALM research projects.

These included the National Rainforest Conservation Program, comparison of the vegetation of Mirima National Park with Keep



Margaret Lissiman & Winsome Byrne collecting Acacia seeds at El Questro Station.

River National Park and a survey of the gorges in the northern Durack Ranges on El Questro Station including plant collections, bird

lists and natural history observations.

According to Kevin Kenneally, one of the many highlights was the collection

of an interesting Acacia at El Questro Station.

Seed from this species was collected and on return to Perth, sent to scientists in

South Africa and Switzerland who are conducting collaborative chemical and developmental studies with Bruce Maslin, a senior botanist at the Herbarium. These studies are contributing to the classification of Acacia.

The field trips are popular among naturalists who are more than happy to pay for the experience and they provide tremendous assistance, Kevin said.

These trips could not be mounted without the financial contribution of the naturalists, he added.

They allow naturalists to participate in research programs while sharing costs. In return they have the opportunity to see first hand some of the techniques used in biological data gathering.

Kevin said one of the most important aspects of the trips was that people become better informed about these areas and could make a positive contribution to the conservation debate.

Be responsibly safe

by Tom Wood

Have a look around your workplace.

You'll be surprised at the number of things that could cause serious accidents to you and fellow staff.

Health and safety in the workplace are matters for everyone.

Each of us is responsible for making our working environment and procedures on our worksites safe — be it a field operation, in a workshop or an office. They all need to be checked.

Slips, trips and falls are a major problem at work as well as in the home, so start with the obvious things that need storing away.

Make sure housekeeping is up to scratch. Check for fire hazards, safe stacking,

electrical hazards, noise and lighting.

These are only a few of the easily identified hazard areas in most work sites.

Don't wait for the team leader to do the job for you,

Safety figures rise in 1989

The number of days lost due to accidents in the 12 months to September 1989 was 1,301 — up 919 on the number lost for the same period last year.

So far this year CALM has recorded the least number of days lost for some years.

The number of medical treatment accidents rose to 137 in the year to Septem-

ber 1989, up from 129 in the previous 12 months.

Last September there were six lost time accidents and 18 medical treatment accidents. This year the figures are one and 17 respectively.

Four vehicle accidents were recorded and three manual handling back strains. Slips and falls are the most causal factors in these accidents.

The program, which took nine months to establish, will enable one million trees to be planted over the next 10 years.

It will begin next year with the planting of 30,000 native trees.

A letter to Northern Forest Region, received last month:

Dear Mr Steve Slavin, A number of our members visited the 'Conservation and Environment Awareness' promotion display held last month at the Maddington Metro Shopping Centre.

You did it beautifully. Learning can be such a fun thing! Congratulations.

Yours sincerely, Bob Harington, Branch President,



Public Affairs new manager

CALM's new Public Affairs Manager is Ron Kawalilik, (pictured).

Ron recently moved to WA from Canada with his wife Jill and daughters Jane and Emily.

He was formerly the director of the Public Affairs and Communications Branch with the Ministry of Environment, British Columbia, as well as chairman of the Communications Advisory Committee to the Canadian Council of Ministers of the Environment.

Ron's branch was responsible for providing planned, integrated, creative and professional PR services, public education and consultation and environmental education programs for schools.

Ron's background includes an English Literature and Philosophy degree and 19 years' experience in journalism, technical communication, advertising and public relations.

A poet and short story writer, three collections of his work have also been published.

Away from work, Ron enjoys a good game of golf or tennis and is looking forward to exploring WA.

Four Aces

CALM's Manjimup district office has been complimented for providing new facilities at the Four Aces.

Manjimup Tourist Bureau Committee manager Jill Wiseman recently wrote to Southern Forest Regional manager Alan Walker congratulating the department, stating that the Four Aces was one of the main tourist attractions in the area.

The new facilities would benefit the tourist industry considerably, she said,

providing a place where people could appreciate the beauty of the Karri forest.

Four Aces has a new post and rail fence, toilets and spotting scopes.

Planting Program

CALM's Mundaring district and the local shire are setting an example by combining efforts to push tree planting.

Mundaring Shire extended its thanks to district manager Peter Keppel for the department's assistance given in the 1989/90 tree planting program.

All were full of praise for CALM's effort.

The rapid development of environmental awareness in the community has one major weakness, it is lacking a solid foundation and can fade away as rapidly as it came.

To maintain the community's enthusiasm, conservation must become part of the national psyche and this can only be done by sowing the 'conservation seed' in the minds of our youth.

You did it beautifully. Learning can be such a fun thing! Congratulations.

Yours sincerely, Bob Harington, Branch President,

WA Wildflower Society Armadale-Kelmscott Branch

Overcoming magpie fear

The following letter was received by Chief Wildlife Officer Dave Mell at Como recently.

Dear Sir,

When I telephoned CALM previously concerning magpie attacks on my way to the bus stop, I never thought I would be writing a letter of thanks and commendation, I just wanted the magpies killed.

Your officer Shaun Hazeldon not only calmed

my fear of maggies swooping, but his patience and determination, plus his kindness and sincerity beyond his years convinced me that I had to overcome my fear — which I did!! What was a major trauma in my day-to-day routine has practically gone.

Shaun helped to arrange for a resident near the bus stop to walk me past the maggies. I now walk myself 'umbrella up' and feel so good that instead of receiving a 'License to Destroy', I received help and understanding and a solution to my problem.

I believe you have a dedicated and charming person in your employ who deserves to achieve great

heights in his field of work.

My grateful thanks to Shaun,

Roselin Humphries, GIRRAWHEEN.

Thanks CALM

THE following letter was received by Wayne Schmidt at Murdoch House:

To the staff at CALM,

Thanks for all you did for many months to make the Bibbulmun Walk '89 such a happy time for us and giving us a further look at all the work you do.

Much appreciated, Pauline O'Dea.

NO EVIDENCE OF SLAUGHTER

No evidence has so far been produced to support allegations that dolphins are being taken illegally in shark nets off Geraldton.

CALM Minister Ian Taylor said department officers were still investigating alleged killings and sale of fins.

"A number of Geraldton people have been interviewed, shark boats inspected and boat skippers and deckhands interviewed," he said.

"Processing works and fish markets in Geraldton and Perth have also been inspected."

"Mr Taylor said he was concerned about this type of so-far unsubstantiated story getting out of control.

"We have only just recovered from the disastrous publicity which surrounded a totally untrue story about the slaughter of dolphins off our coast.

"There are concerns that these latest allegations may have been sparked by a reported dispute between professional shark fishermen and locals.

"We need firm evidence — not allegations."

Mr Taylor said the CALM investigation and another ordered by Fisheries Minister Gordon Hill would continue and if the claims were substantiated, the offenders would be dealt

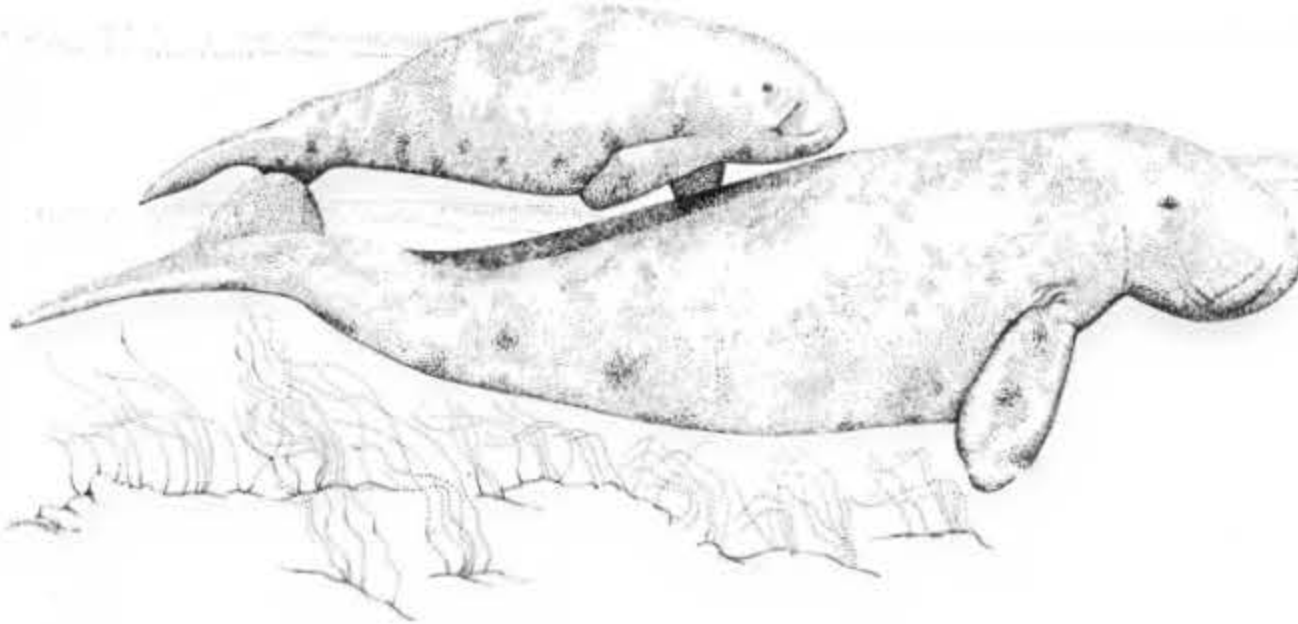
with to the full extent of the law.

Penalties for anyone found illegally killing dolphins in our waters is \$4000 under State laws and up to \$100,000 under Commonwealth laws.

According to chief wildlife officer Dave Mell, wildlife officers inspected a dolphin found on the beach at Geraldton's Point More — its lower jaw missing.

A second dolphin with its jaw missing was reported at Drummonds Cove.

No evidence of the cause was found.



Artist: Sally Watson

DUGONG NUMBERS RISE

For more than a decade it has been known that Shark Bay and Exmouth Gulf harbour major dugong populations — thanks to the work of CALM senior research scientist Bob Prince and retired Calgary University professor Paul Anderson.

Earlier this year a survey was carried out in these areas to find out just how

many dugongs there are. In July CALM funded the travel of Queensland's James Cook University dugong expert Helene Marsh to WA to help carry out an aerial survey of population numbers.

Co-ordinated by Bob Prince, the survey also involved technical officer Andy Williams, Shark Bay district manager Ron Shepherd and Dr Marsh's research assistant Keith

Saalfeld.

Paul and Donna Anderson added their local knowledge. (Paul has researched dugongs in WA over the past 10 years, this month completing two years' field study at Shark Bay.)

The survey estimated at least 10,000 dugongs in Shark Bay and a further 2000 in the Exmouth Bay-Ningaloo Reef area.

According to Ron

Shepherd, the survey identified key winter areas for dugongs and provided necessary data for compiling management recommendations.

Results have been used to produce the first winter distribution map for the mammals.

Helene had completed similar surveys along the coast of Queensland and Torres Strait and is using the information to advise on Australia-wide management strategies for dugongs. Bob Prince is presently developing a management strategy for dugongs.

The survey ranks the Shark Bay population as the fourth largest in Australia behind the western Gulf of Carpentaria, northern coast of the Northern Territory and Torres Strait.

Collective survey information estimates the Australian population to be about 70,000.

The sighting of a large population of dugongs on the Ningaloo Reef was considered to be unusual.

Available food sources (seagrass) are limited and sparse here. It is believed the reef may provide the mammal with a warm winter refuge.

Also observed around the reef were about 20 whale sharks. This was significant as high numbers of the species near Ningaloo during winter months had not previously been reported.

(Local Exmouth resident Dr Geoff Taylor has had a long-standing interest in whale sharks at Ningaloo Reef. It was a surprise that the large numbers were seen westward of the reef.)

Metro leads the way

by Colin Ingram

The Metropolitan Region is leading the way with the introduction of volunteer programs.

A training program was held for volunteers involved in providing interpretation and information services on Penguin Island in September.

Fifteen volunteers attended the weekend course.

The training program was developed by Metro Region staff, convened by Andrew Van Der Wacht and led by Gil Field and Rae Burrows.

Ranger-in-charge Jim Maher provided an in-depth tour of the island, covering such subjects as vegetation, wildlife, island conservation and recent history.

The volunteer program will provide visitors with a range of interpretative and

earth education tours on the island.

In addition an information centre will provide less energetic visitors with information and printed literature.

The program began earlier this month and continues each weekend until the end of January.

For more information on the program contact Andrew Van Der Wacht on 364 0740.



Ranger Jim Maher with volunteers on Penguin Island.



Firewood survey

Sharon Fitzpatrick (centre) found herself surrounded by five tonnes of wood for next winter. On hand were NFR International Officer Stev Slavin, Mundaring district forest workmen Greg Brown and Brian Selkirk and NFR Regional Manager Eric Jenkins.

To better understand public firewood needs/wants, CALM has recently carried out a random firewood survey throughout Perth.

In September, 1000 survey forms were posted to random addresses asking a householder to complete them and so indicate their

needs and method of collecting firewood. To achieve a successful response, Northern Forest Region offered a year's supply of firewood (5tonne) to the winner of a draw of completed survey forms.

This worked and a high 40% return rate was recorded.

The statistics are now being processed to give the department a starting point in understanding firewood use.

Survey winner was Sharon Fitzpatrick of Beckenham who received her whole year's needs in one load.

Remnant areas of original ecosystems - fragmented by human activities - are the only resource available for conserving natural biota.

A major question facing conservation biologists has been whether linkages or corridors between these remnants enhance the overall conservation value of a region by enacting biotic movement.

The values of corridors and their management problems were discussed at a recent conference at Busselton.

Nature Conservation and the Role of Corridors was convened by the Roadside Conservation Committee with support from CALM, CSIRO and the Main Roads Department.

More than 80 scientists, administrators and managers with representatives from Canada, United States, Belgium, New

Zealand and South Africa attended the five day conference.

Issues discussed

Large parks and reserves are the backbone of any conservation system, but cannot be considered or managed in isolation. Conservation must be set in a regional perspective by developing systems or networks of habitat patches connected by corridors which allow movement of the biota.

This is essential to ensure dispersal, recolonisation and gene flow and ensure the maintenance of small isolated populations.

Corridors can occur as natural parts of the landscape such as rivers, or can be artefacts occurring along roads, railways, fencelines or powerlines.

Such corridors are in effect linear remnants left following the clearing of the adjacent landscape.

Conference looks at corridor management

They have an important function in adding to the overall area of remnant vegetation in a region and providing habitat for some fauna.

Management of these linear remnants is, however, often difficult as they have a large edge to area ratio and are subject to disturbances from the surrounding matrix.

Corridor dynamics are dominated by external rather than internal influences unless they are wide enough for there to be an interior portion which is not influenced by edge effects.

Edge effects include physical and chemical effects

such as increased isolation and wind damage, inputs of nutrients, herbicides and pesticides and biotic effects such as invasion by weedy species or pathogens and increased predation and mortality.

The importance of corridors in facilitating movement of biota has until now been assumed, without much unequivocal data to back the assumption.

Studies reported at the conference are now providing data that indicates cor-

ridors do have a vital role to play in the movement of components of the fauna.

The attributes which are important in corridor design are, however, likely to be taxon-specific and a single corridor may not be effective for all components of the biota.

Species using corridors may be predominantly weedy species capable of movement in any case. Under certain conditions a corridor could act as a sink or death-trap in which dispersing individuals could be more likely to suffer mortality, for example, through predation.

Corridors also have other functions apart from providing habitat and movement

conduits. They can serve as shelterbelts which increase crop and livestock productivity and ameliorate wind and water erosion.

Corridors, especially along roadsides, are the window through which tourists and the travelling public look at the landscape and so have a vital role in education and increasing public awareness of nature conservation issues.

Research priorities include the establishment of a regional inventory to determine the location and condition of existing corridors and the development of management techniques that will maintain corridor values.

Monitoring of corridor quality is also essential, as is the integration of research and management. Rehabilitation and restoration techniques are also required that will allow the development of corridor networks.

Further detailed research on fauna movement and re-

quirements of individual species are also vital if corridors allowing biotic movement are to be provided.

The conference stressed the importance of communication with the general public and politicians about issues related with corridors and conservation in general and reiterated the need for scientists to spend a significant part of their time (say 10%) doing this.

For conservation to be successful, it has to become important to everyone, not just a select few.

The conference provided a timely follow-up to that on remnants of native vegetation in 1985, also held at Busselton.

The proceedings of this year's conference should be available within a year and will provide a companion volume to the successful one from the last conference titled Nature Conservation - The Role of Remnants of Nature Conservation.

by Richard Hobbs, CSIRO Helena Valley



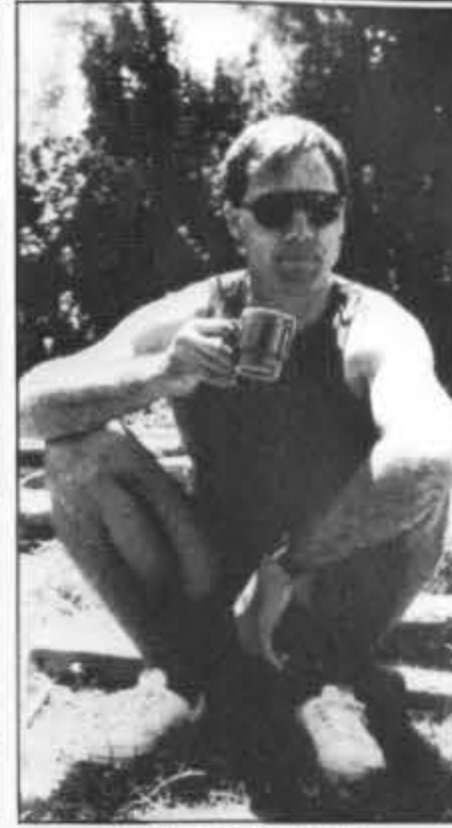
ABOVE: Greg Pobar explains the scuba equipment to Mitch Davies.



Grant Prants dressed for the occasion.



Craig Newman trimming the turf.



Alan Byrne takes a break.



Mr Nutri-Grain Luke Coney.

Cadet castaways on Penguin Island

Ten second year cadets recently enjoyed the spice of island life during a two-week stint on Penguin Island.

The 10, along with two supervising officers including training officer Alan Byrne, were based on the island as part of their training program which includes marine park management, wildlife protection, national park management and some operational work.

CALM's marine operations and islands manager Greg Pobar spoke to them about a number of the department's activities, including boating and diving safety, snorkelling and marine flora and fauna identification.

Greg stressed the importance of staff being suitably qualified to use diving equipment and boats, especially when on the job and indicated the consequences of liability if things go wrong.

From a small cave on the western side of Penguin Island, a "lecture room" from one talk, Greg took the cadets snorkelling on offshore reefs.

He brought back a collection of molluscs, crustaceans and coral and for identification, giving the cadets a first hand insight into an area that is expected to become a marine park in the future.

(It was no surprise that Greg had a flood

of enquiries about the vacant marine park ranger's job at Marmion.)

Marine mammal strandings, CALM's role in strandings and the handling of stranded animals were topics covered in a talk by supervising wildlife officer Doug Coughran.

The Penguin Island works program was part of the Metropolitan Region's plan to clean up the island.

Their work included the repair and painting of the research units and information centre, the laying of paths, erection of fences and the removal of old concrete water tanks and other rubbish.

Greg Pobar had no trouble in getting volunteers to help him complete repairs of the island's water supply pipeline and to install a floating sign near Seal Island to inform visitors that the island is a nature reserve and urge only short stays.

Being young people with plenty of ingenuity and initiative and realising they had a unique opportunity for some recreation activities along with their formal duties, the cadets introduced daylight saving on Penguin Island for the duration of their stay. Watches were turned back two hours.

So their day's work started at 6am mainland time and finished at 3pm island time,

giving them plenty of daylight hours to pursue other interests such as fishing, surfing, sailing and diving.

Long active days also had another advantage — it ensured a good night's sleep, making them oblivious of the nocturnal noises and carry-overs of the island's resident population of little penguins that had kept many an overnight visitor sleepless in the past.

Reflecting on the two weeks training, Alan Byrne said the time spent on the island reinforced some of the real strengths of the cadet training program: the graduates are exposed to the many facets of land management; they gain valuable and practical work experience whilst learning and the cadets can be productive whilst learning.

Wildlife officer Lyle Gilbert, one of last year's cadets, told the cadets what to expect from working for CALM and explained what he had done since joining Wildlife Protection.

Marine scientist Jim Stoddart outlined future plans for marine research in WA and the Department of Marine and Harbours gave a presentation on marine safety and a flare demonstration and showed the cadets over the patrol boat Sentinel.



Cleaning up the island.



ABOVE: All working together.



Cadets enjoying Seal Island...



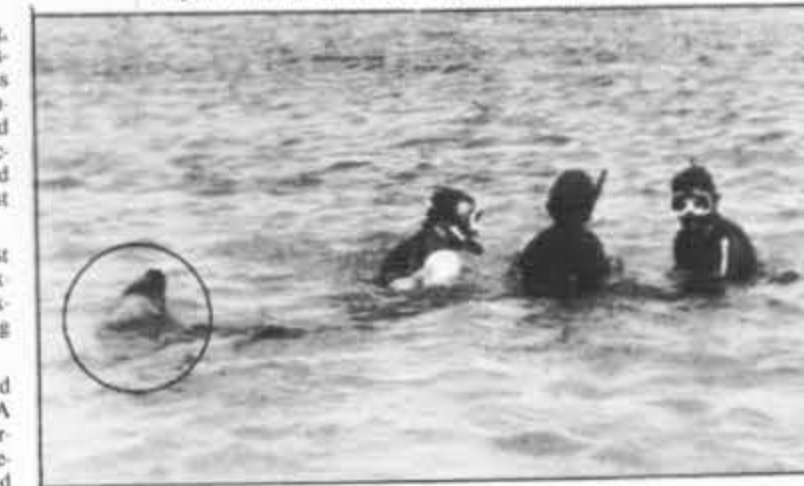
...and studying marine life.



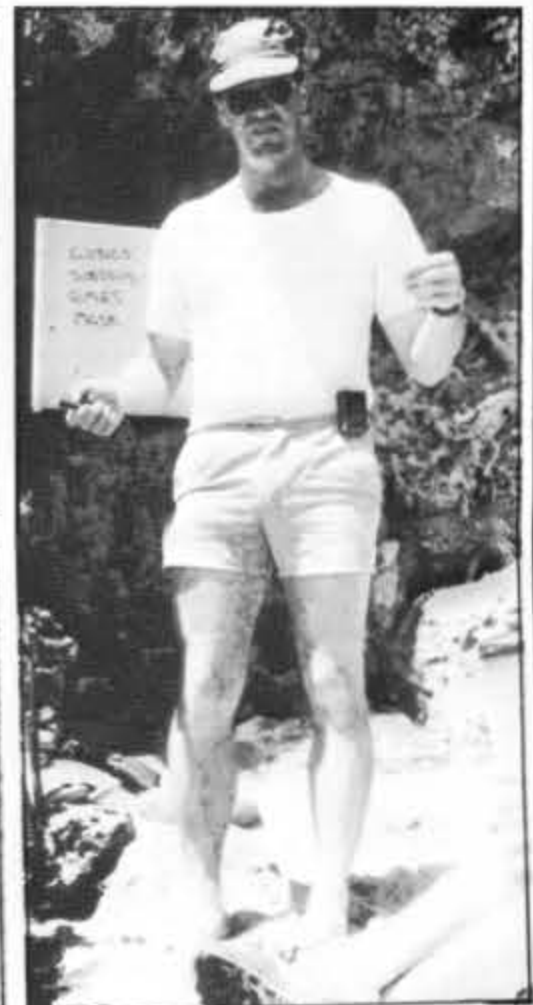
Mark Roddy studying marine reserve management.



Wayne Fullerton asks Dave Alghabi — where's the salt?



Where did that seal go?



Greg Pobar explains the diving procedure.



The perfect classroom.

FIGHTING FIRE WITH FIRE

Seasonally speaking, CALM's spring burning program is behind schedule.

Atypical October conditions have seen the month record the highest rainfall for many years.

According to Principal Fire Officer Rick Sneeuw-jagt, the department has usually completed one quarter of its spring burns by now.

Apart from the northern jarrah forest, few burns have been commenced in forest areas.

As this edition of CALM News went to print, Munding district had completed most of its scheduled burns with the help of favourable conditions — dry weather and south-westerly winds.

Eighty aerial burns are scheduled for this year over 200,000 ha in forest regions, with the aim of reducing 60 to 80% of total fuel within each burn block.

A further 50,000 ha will be manually ignited by ground crews in areas that are too small for aerial ignition.

Fire Protection is proud of the fact that WA hasn't had a major forest fire since 1961 and Rick claims CALM's fire prevention operations lead the world.

The last major forest fire to reach a settlement was in 1961 when an uncontrolled wildfire destroyed Dwellingup as well as other settlements including Nanga and Banksiadale.

There have been many examples of buffer zones (areas previously burnt on rotations) stopping wildfires in their tracks when they have been heading for a country settlement.

A recent example of this is Walpole which has been threatened twice in three years. (See diagram.)

The department aims to provide as much variation as possible in the types of burn treatments provided

by Tanya Maxted

on all CALM lands, says Rick.

Such variation can be obtained by burning at different times of the year at a wide range of fire intensities.

While the department is increasing its proportion of autumn to spring burns, they are presently only 20 to 30% of total burns due to the lack of suitable burning days in autumn months.

The bulk of the department's burning program is

carried out before Christmas because of the higher number of suitable burning days during this period.

At this time of the year, the layers of leaf litter are relatively moist, leading to low-intensity fires that remove the upper litter layer only.

Burning before the height of summer causes less scorch to the tree canopy and there is a low risk of fires escaping outside the burn boundaries.

Skills For Survival

The following are a few safety tips taken from the department's Bushfires and Safety brochure for those venturing into the bush this fire season.

Before going on a long bushwalk, notify the CALM district office of your intended direction, destination and estimated time of return.

Check fire weather forecasts issued daily by the Bureau of Meteorology and broadcast by ABC and local radio stations.

The main cause of death in a bushfire is heat radiation, rather than direct contact with flames or lack of oxygen.

A bushfire moves rapidly, so the peak radiation intensity only lasts a few minutes.

Motor vehicles offer a safe refuge. Don't drive blindly through smoke.

Switch on your headlights and park in a bare area beside the road on the opposite side to the fire.

Wind up the windows and shelter from heat radiation beneath the dashboard with a rug, floor mat — anything that comes to

hand — covering your body.

The petrol tank won't explode, and even in the worst situations it will be some moments before the vehicle catches alight.

If this happens get out after the peak fire has passed, but keep your skin covered as much as possible.

If you're on foot try to move to bare ground, such as a gravel pit or recently burnt area.

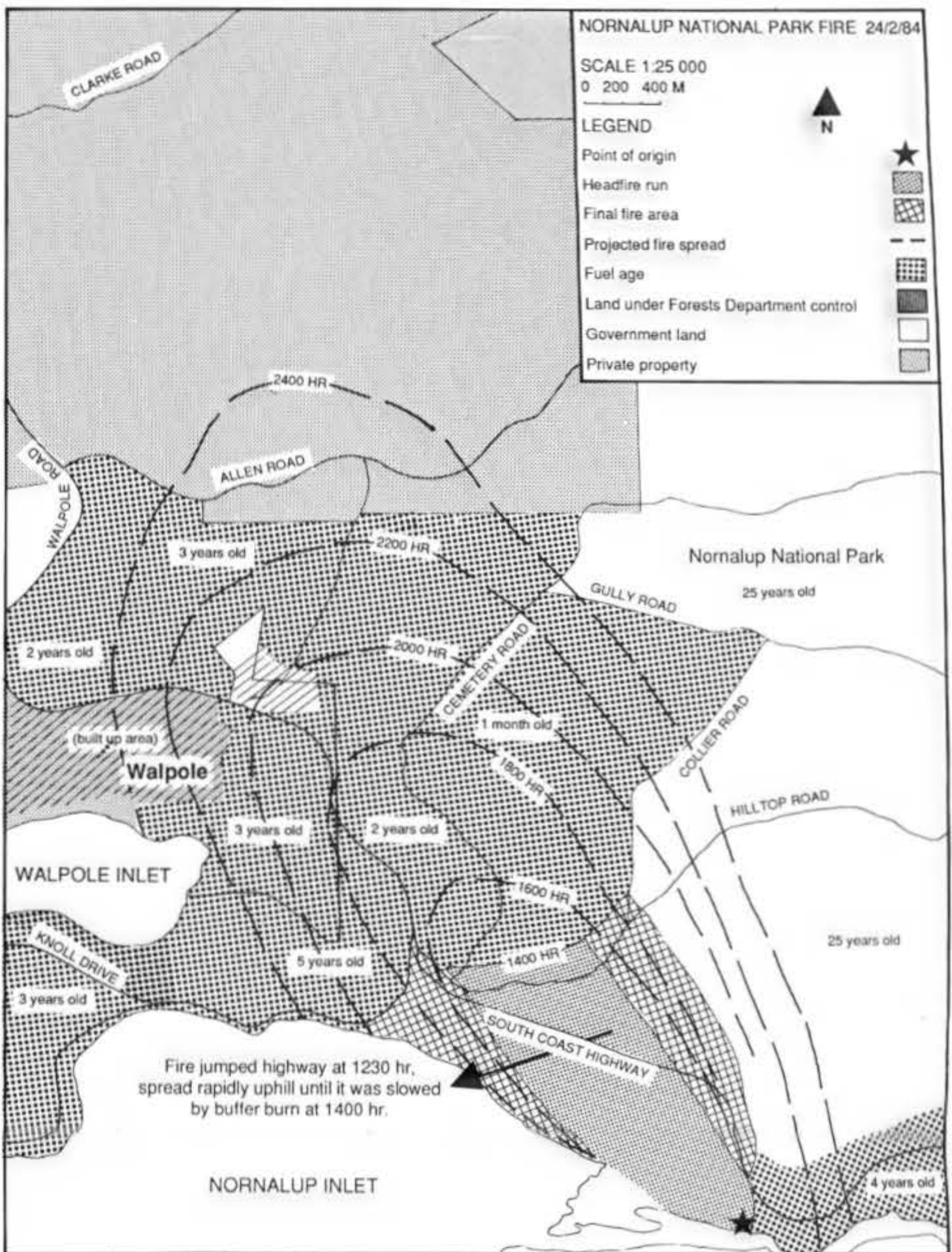
Don't run uphill or away from the fire unless certain that a safe area is close by.

Don't attempt to run through flames unless you can see clearly behind them, and then only if the flames are less than 1.1m high. Use lulls in the fire to run through to the burnt ground behind.

Protect yourself from heat radiation — cover yourself with earth; use ditches, wheel ruts, big rocks or logs for shields.

If possible take cover in ponds, running streams or culverts, but avoid elevated water tanks as water in them will heat up rapidly.

Remember — remain CALM.



FIRE SCHOOLS HELD

As part of preparing for the fire season, CALM recently held fire "schools" in Busselton.

The three to four day courses taught officers from Level 1 to 3 fire handling and organisation skills.

Everyone within the department involved in fires, including fire research, participated.

CALM employees were joined by fire fighters from the Bush Fires Board, WA Fire Brigade and foresters from other states.

Park Hosts

Following the successful trial of a Campground Host Scheme in Lane-Poole Reserve earlier this year, Busselton District Manager Ian Rotherham and staff with the Leeuwin Naturaliste National Park are keen to develop a similar programme for two of the parks most popular camping areas.

Ian is offering CALM staff an opportunity to appreciate how field staff deal with the public on a daily basis.

Injidup Camping area near Yallingup is a popular tent based camping area for surfers, and as such Hosts for the ground will need to be able to relate to this user group.

Costos Field Camping area, further south is designed for van or car based camping. Hosts for this site will cater for a variety of groups ranging from campers, family and school groups, retired couples and some surfers.

Campground Hosts assist permanent staff manage the site providing information on the local environment, CALM, places to go and things to do, as well as managing the campground facilities.

WANTED!
CAMPGROUND HOSTS
LEEUWIN - NATURALISTE N.P.

Are you looking for something exciting and interesting to do?

WHY NOT BECOME A VOLUNTEER CAMPGROUND HOST?

- Free camping in a beautiful National Park.
- Close to the beach.
- Meet lots of interesting people.
- Challenging tasks.
- Develop new skills.
- Relax in a peaceful environment.

For more information contact:
Col Ingram (09) 364 0777
Ian Rotherham (097) 52 1677

The position is completely voluntary. The District is seeking people who have an interest in the outdoors, meeting and talking with people and providing infor-

mation in one of the states most beautiful National Parks.

A short training programme will be provided for successful applicants.

The scheme begins in late December is available in weekly allotments through to February. Hosts will also be required for the Easter vacation.

MODEL MEASURES KARRI GROWTH

By Claire Barron

Predicting the growth of a karri tree is not as easy as looking into a crystal ball — as Martin Rayner of CALM's Manjimup Inventory Branch discovered.

Studying for 12 months at the Australian National University in Canberra, Martin developed a computerised system of mathematical models that can predict the growth of timber.

This was done by taking data from more than 230 permanently established karri regrowth stands.

Every five years the growth of individual trees are measured, then combined with other karri research plots, providing a database of more than 100,000 tree records.

The data was then analysed to determine how site, age and stand conditions affect tree growth.

By continuing the analy-

sis with mathematical models the question of how stands of trees develop over time can be answered.

Some early historical data and work of WA's first Conservator of Forests, Charles Lane Poole, is also assisting the development of the growth model for the karri.

The extensive database is the product of many years' work by various staff of the

former Forests Department and staff at CALM's Manjimup Inventory branch.

This project is essential for forest management planning and represents a major financial and staff investment.

Refinements and monitoring of plots will continue with the prototype system due to commence in 1991.

Telling Tales

Nannup District Manager Peter Henderson expects Forester Jim Howesmith to pass with top honours after attending a time management course held recently in Bunbury. Jim turned up a day early!

* "I'M SORRY, THE LINE IS BUSY". A lady

with an American accent rang the Greenline and asked to find out more about our "company". When asked if she wanted to know about the Department of CALM's activities or about national parks she realised her error and apologised. "Oh I'm sorry — I thought this was a bus company."

Fire fighting tactics have come a long way

by Steve Murnane

FIRES AND FORESTS. DEFENCE AGAINST BUSH MENACE.

It is hoped that country residents will benefit from the daily broadcasting of fire hazard warnings by the ABC said Mr A C Shedley, of the Forests Department, while recently addressing a local club meeting.

'A fire weather research station,' said Mr Shedley, 'has been established at Dwellingup, where meteorological data are collected and pine wood cylinders are weighed at regular intervals during the day to determine the moisture contents.

'The cylinders are sensitive to the variation of temperatures, humidity and wind velocity and are a direct measure of the inflammability of the forest litter.

'Using this and a study of the weather map, a forecast

The following article from 'The West Australian' dated February 21 1939, was brought to our attention by CALM forester Phil Shedley.

Phil's father Charles Shedley worked for the Forests Department and it's interesting to note just how much tactics have changed since those early days of beating the flames directly with bushes!

is made early in the morning of the fire hazard for the day by the officer-in-charge.

'The forecast is broadcast daily by the ABC.

'Humidity has an important bearing on the forest fire hazard and it is remarkable how the 'sting' is taken out of a bush fire on a day of high relative humidity.

'Information supplied by the research station at Dwellingup is used to determine suitable weather for controlled burning and as a guide for the Forests Office in deciding the number of

men on hand in case of outbreaks.

'To make the improved methods of detection effective it is essential to have staff resident in the forest.

'Gradually, settlements consisting of six or seven houses with a school are being built up and a permanent rural industry established.'

DEPARTMENTAL METHODS.

Mr Shedley stated that with the great increase in area of forest treated during the past few years and now proceeding at the rate of over 100,000 acres a year (made possible by a 100,000 pound Federal grant), fire protection was becoming an important duty of his department.

'Certain precautions were taken to prevent outbreaks during the summer, such as insisting that spark arresters and ash pans were fitted to locomotives running through State forest, establishing firebreaks, controlled burning during cooler weather and disposing of debris following felling operations.'

Despite all these precautions there were always fires to be dealt with during summer.

Early detection and rapid transport of a firefighting force to the scene of the fire were the essentials in fire control organisation.

This was a local problem but certain broad principles had general application.

In forest areas, early detection was secured by the erection of lookout towers on high points at intervals of 15 to 20 miles manned continuously during the summer.

At times when the smoke haze became bad and the range of vision became less, subsidiary stations had to be manned.

The method of locating a fire in general use was by the cross bearing system, whereby bearings were taken from two lookout towers and then transmitted over the telephone to headquarters, where they were plotted on a district plan.

The intersection of the bearings gave the position of the fire.

Sometimes a range finder was used and in other cases the tower man could give the position with extreme accuracy from his knowledge of the country and familiarity with the panorama.

'Most districts,' Mr Shedley said, 'were now provided with motor runabouts equipped with firefighting apparatus such as knapsack spray pump outfits, a supply of water, axes, shovels, and rakes.'

'When a fire was spotted by the tower man, the fire gang was despatched to the

scene of the outbreak. The old methods of firefighting by the use of direct beating with bushes and back firing from established or raked tracks were being replaced by spraying water on the fire by means of the Ladywood type of underarm pump used in conjunction with the four-gallon knapsacks.'

A TOWERING DIFFERENCE

Things have certainly changed since those early days of towermen, knapsacks, shovels and rakes.

For starters, weather forecasts are given four times a day - not just once.

A private company provides CALM with forecasts over eleven zones in south-west forest areas.

These forecasts are based on weather observations from 16 centres and are transmitted via computer terminals at all stations.

CALM reciprocates by providing readings from 15 centres in the south-west and the company receives bonus or penalty payments depending on their accuracy.

As for pine wood cylinders, they were superseded about 18 years ago by the introduction of CALM's Forest Fire Behaviour Tables.

Reliable predictions of fuel moisture content, fire behaviour and fire danger ratings are readily calculated using tables compiled by Principal Fire Officer Rick Sneeuwjagt and recently-retired regional manager George Peet.

To verify fuel moisture contents in the field, mechanical moisture meters are used.

These projections allow fire managers to accurately determine the correct conditions for prescribed burning, to determine if emergency standby crews need to be on hand or to calculate the seriousness of wildfires.

The tower networks of the past have been largely replaced by an aerial surveillance system involving nine single engine aircraft which CALM acquired in 1975.

The aerial spotters are more efficient to run and provide information about fire locations and behaviour as well as fuel types.

This amount of information could never be provided by lookout towers.

Towers are unable to gauge a fire's intensity as only smoke can be spotted and another tower is needed to gain a cross reference.

Towers are still used in high-value areas such as plantations in the Blackwood Valley and at Wanneroo, where fulltime spotter coverage is possible.

Five towers are manned by full-time CALM staff and a further 15 emergency towers are available.

Since the 1950s the greatest advance in WA forest fire protection is an extensive fuel reduction burning program and the introduction of aerial ignition techniques in the mid 1960s has permitted this program to be spread over 250,000 hectares per year.

Planes enable 75% of the burning to be accomplished by dropping incendiary bombs from 500-600 feet at pre-determined intervals.

Prescribed burning has, since 1961 (following the disastrous fires that burnt out Dwellingup, Banksiadale and Nanga), meant a low incidence of large, destructive forest fires.

In the dry autumn of 1978, Cyclone Alby caused some 140 fires but CALM was able to control them in fuel-reduced buffer zones.

These zones surround farms, conservation areas, pine plantations, towns and regrowth areas.

Fire suppression capability has improved with advancements in heavy machinery, trucks and pumping units. The use of chemical retardants in water for fire containment has meant a more effective and efficient use of this valuable resource.

Rigorous training of field staff in organisational principles, fire suppression roles and responsibilities has meant that Districts can react more efficiently to large fire emergencies.

CALM conducts burns from September to January and again during March and April.

Despite the modern-day equipment and facilities on hand, fire fighting is still a most arduous and demanding task performed under oppressive conditions.

Without a doubt, the spirit of the early firefighters is truly alive and well in CALM's modern day firefighting heroes.

HERITAGE REGISTER

The Australian Heritage Commission recently launched an illustrated register entitled 'The Heritage of Western Australia'.

The book includes descriptions and photographs of WA's historic buildings, sites and natural monuments listed in the official national inventory of Australia's natural and cultural heritage.

Contributions of checking and advice on CALM lands in the publication were done by Andrew Burbidge and John Hunter while photographs were taken and loaned by Barry Wilson, Norm McKenzie, Ron Sokolowski, Jim Lane, Andrew Burbidge and John Hunter.



ABOVE: The first fire towers were basic structures erected on hills or other vantage points.

BELOW: An early fire vehicle. Mobility was essential in fighting forest fires and the automobile was soon used for this purpose.



LANDSCAPE PHOTOGRAPHIC COMPETITION

Five hundred and sixty two photographs were received for the Landscape photographic competition.

Organised by Public Affairs marketing officer Tim Langford-Smith, the competition was sponsored by Konica Australia.

The unexpectedly large number of entries caused the judges to spend a long

by Rae Burrows

but pleasurable evening sorting and judging the two categories - landscape and wildlife.

Judges were Robert Garvey (professional photographer), Harvey Wachtel (ad agency) and David Mack (Konica).

Entries ranged from the

Army to walk track

Army officers are walking the Bibbulmun Track this month as part of adventure training for junior officers.

About 10 officers left Kalamunda on November 1. The walk has been divided into five stages, stage four between Willow Springs and Shannon attracting the most participants - 21.

The event is being coordinated by Captain Graeme Johns from the Swan Barracks.

Mr Johns said the officers would average 25 kms a

day, finishing in Walpole on November 30.

Along the way they will maintain the track, check signs and maintain camping grounds where necessary.

Officers in charge of the exercise were briefed on die-back risk areas, bushfire regulations and other land management considerations.

They were supplied with track markers, the Bibbulmun Track marking specifications and multiple copies of the Track Guide and CALM's 1:50,000 map series.

COMPETITION

unusual (bare bottoms and washing lines) to the once-in-a-lifetime shot (second prize, wildlife - a male splendid wren in full breeding plumage flanked by his harem).

Fifty of the best shots were mounted and displayed at the Burswood last month. They formed a perfect backdrop to the presentation of prizes by CALM Minister Ian Taylor.

Prize winners were William Jackson of Walpole

and Geoffrey Rogerson of Denmark in the wildlife section and Russell Pearson of Esperance and Jacqui Williams of Forrestfield in the landscape section.

Winners received a colour video cassette recorder on Konica. Second placegetters won a Konica jump camera.

The competition will be run again for the public next year. Public Affairs is considering organising a similar competition for CALM staff.

STAFF NEWS

Appointments

Peter Jones, Forest Ranger (Ops.), Nannup; Mark Giblett, Forest Ranger, Manjimup; Jim Wilson, Administration Assistant, Mundaring.

Promotions

Stephen Dick, to Technical Officer, Manjimup

Branch; Roger Armstrong, to Senior Environmental Officer, Bunbury; Peter Bidwell, to Senior Forester (ops.), Bunbury; Ian Rotherham, district manager, Busselton, Glyn Yates, to Forester Grade II, Collic; Jeff Bennett, to Forester Grade II, Manjimup.

Geikie Gorge improvements



Geikie Gorge... a popular tourist attraction in WA's north.

Great improvements are planned for Geikie Gorge National Park.

The Park has been reclassified for 'day use' only and closed for camping. This will create a much larger capacity to accommodate day visitors.

The camping area will be redeveloped as a picnic area and tables and barbeque facilities will be installed.

Walktrails will be upgraded, access to the river improved and interpretive facilities such as information panels added to the Park.

Geikie Gorge National Park is one of the most spec-

tacular and popular national parks in the State.

The Fitzroy River eroded the gorge from the ancient Devonian Reef which formed 350 million years ago when the area was under the sea.

The Park can no longer cope with the huge demand for camping and there are now extensive facilities for campers at Fitzroy Crossing.

Fitzroy Crossing is only

by Carolyn Thomson

The Gorge has extremely rich animal life, including freshwater crocodiles, barramundi, fruit bats and tree snakes.

More than 30,000 people visit the Park each year and visitor pressure is continuing to increase.

16 kilometres from Geikie Gorge and the access road into the Park will be fully sealed by mid-1990.

The decision to reclassify Geikie Gorge National Park for day use is in the best interests of the travel-

ling public,' Broome district manager Allen Grosse said.

'It will eliminate conflict between camping and recreational activities and improve the Park's conservation values.'

A boat trip guided by CALM rangers is presently the Park's main tourist attraction.

CALM is considering purchasing a bigger boat to cater for the increasing number of visitors.

However, extensive planning over the next five years will diversify the Park's attractions.

DESERT RESERVE BURN SUCCESS

Staff from the Goldfields region and Protection Branch recently completed a successful 70,000ha burn in the remote Gibson Desert Nature Reserve, 600kms east of Wiluna.

This was the Goldfield's first fully-operational foray into aircraft burning in the region. In this instance it was a research requirement linked to habitat preparation for the re-introduction of endangered mammals. It highlighted the commitment CALM staff in the Goldfields have to managing lands under their control.

The resourcefulness, efficiency and positive approach of the crew involved in the project created and achieved a positive result. This has significant ramifications for fire control management on other reserves in the region.

Using information

by Mike Tagliaferri

provided by Fire Branch and Research Divisions and recent experiences in burning spinifex fuels. Goldfields staff can now confidently plan programmes to create habitat and species diversity, to prevent extreme wild-fire episodes and for protection and enhancement of fire sensitive species.

The seven days spent by foresters Mike Tagliaferri, Dave McMillan, Gerard Van Didden, Geoff Rolland and pilot Alex McDonald were extremely enjoyable and memorable for the teamwork and cooperation displayed by all members of the crew.

Camaraderie and good humour was furthered by the 'Dew Drop Inn' team of Per Christianson, Tuddy Liddlow, Neil Burrows and Alex Robinson with their multitude of camp fire yarns.

The extravagance award went to Andrew Burbidge and Phil Fuller for having the biggest fridge containing essential 'bush tucker' — a one litre container of icecream and nothing else.

Secretly this was believed to be the incentive which lured Rufous Hare Wallaby expert Ken Johnson from Alice Springs and CSIRO scientist Geoff Short from Helena Vale to give their opinions on the reintroduction of the Boodie and Golden Bandicoot in the Gibson Desert Nature Reserve.

The talent and expertise that CALM as a department can draw upon was clearly shown in this project with involvement from the General Manager, Goldfields regional staff, Protection Branch, Fire and Research branches, Com-

munications Branch and other people outside the department such as Aboriginal communities, CSIRO, Northern Territory Conservation Commission and an extremely able pilot Alec McDonald.

The burning carried out in this remote area will be mapped using remote sensing techniques and will form the basis for a prescription for further planning and burning requirements as the project for reintroduction of mammals in the Gibson Desert Nature Reserve proceeds.



Dave McMillan (left), Gerard Van Didden and Alex McDonald at Beadell airstrip.

Banksia Book at Herbarium

by Vicki Hamley

'The Banksia Book' Vol. 2 was presented to the Herbarium by author Alex George on October 20.

This book is the result of collaborative work between Alex who is a botanist with a particular love of Banksias, and Celia Rosser, whom Alex describes as 'one of the finest botanical artists in the world.'

Unfortunately Celia couldn't attend the presentation due to the pilots' strike.

This magnificent book measures 56 x 78 cm — big enough to accommodate Celia's wonderful life-size watercolours.

It is a limited edition of only 730 copies describing and illustrating 24 Banksia species.

Volume 1 was published in 1981. It took another seven years to complete vol. 2 and vol. 3 is scheduled to be completed by 1993.

The completed series will describe all 75 species of Australian Banksias.

The paper for all three volumes was specially hand-made in England, but apart from this, vol. 2 was totally produced in Australia.

The Banksia Book is a Monash University project and has been donated to the Herbarium as acknowledgement for its contribution towards logistical support.

'Everyone helped,' said Alex, even by driving Celia and myself around to collect botanical specimens or by

processing the specimens.'

Alex thanked CALM for assistance with permits to collect Banksias, including gazetted rare species. All botanical specimens used for the paintings will be lodged in the WA Herbarium.

Director of Research Andrew Burbidge, who accept-

ed the book on behalf of the Herbarium and CALM, praised its quality.

'It is scientific, of a high academic standard and is very readable,' he said.

'Celia Rosser's paintings are not only very accurate pictures of Banksias, they are also works of art.'



Jim Armstrong (left), Alex George and Andrew Burbidge admire the Banksia Book.



Research scientist Per Christianson (left) and CSIRO scientist Geoff Short discuss the re-introduction of mammals into the Gibson Desert Nature Reserve at their campsite.

BIG BROOK RELAY ATTRACTS TOP TEAMS

Eighteen teams contested the 1989 Big Brook Relay on Sunday November 12.

The relay started at 10.45am with the Cross Cut Sawing event.

Spectators benefitted by the change of order from 1988 when many missed some of the highlights.

Social events such as volleyball, frisbee golf and trout fishing were held throughout the day with the BMX race for young supporters starting at 10.15am.

Other events to be enjoyed were the Pemberton Challenge Tug-of-War and

by Alan Sands

axe-wielding accuracy test, Match Splitting.

On November 11 the Manjimup Tourist Bureau held its annual Timber Festival.

A Bush Dance was held at the Timber Park on Saturday evening.

1989 Big Brook Nominations were:

Manjimup Research, Buggers and Burners; CALM Cadets, Darling Scarp Demons; Collie, Absolute Filth; Land Information, L.I.B.S. LOGS; Land

Information, Mapping Maniacs; Central Region, Central Region; Walpole, Frankland River Farnarkers; Manjimup Inventory, Inventree Mob; Manjimup Regional, Regional Bards; Rec Land/Planning/C. Education, Entrophy; Rec Land/Planning/C. Education, Wreckreation; Crawley, Sheltered Workshop; Protection, Hot Shots; Public Affairs, Public Affairs; Pemberton, Southerners; Manjimup District, Manjimup District; Research, NWARA; Silviculture, Bradshaw's Boys.

Photographs and a first-hand account of the relay will be published in next month's CALM News.

