

LIBRARY

Department of Biodiversity,
Conservation and Attractions

This PDF has been created for digital preservation. It may be used for research but is not suitable for other purposes. It may be superseded by a more current version or just be out-of-date and have no relevance to current situations.

A guide to Karri Country

\$1

If you go down to the forest...

You're going to see some of the most magnificent forest country in the world in WA's south-west. And whether it's the region's tall forests or white beaches, there's plenty for visitors to see and do.

You can literally walk through the treetops at the Valley of the Giants - or through the base of a tree trunk. If you want to work harder to take in the view, there are three fire lookout trees. Rungs fixed to the trunks let you climb to a height of about 60 metres.

There are dozens of scenic drives - take the Great Forest Trees Drive in Shannon National Park and tune your car radio into the park broadcasts. Some of the stories you'll hear are told by people who lived in the area when Shannon was a

thriving timber town nearly half a century ago.

Stop for a picnic, or stay at the Forest Ecology Centre in Perup forest. Nearly 30 species of native mammals are found in the southern forest region and most of them can be found around Perup - and seen on a guided spotlighting tour.

Bushwalkers can try one of the many walktrails set out in the region's national parks and State forest, or the long distance Bibbulmun Track.

Come for the wildflowers in spring, or to catch marron and trout in season, to watch the southern right whales as they migrate along the State's coastline.

With so much to see and do, you need a guide...so read on, or call CALM for more information.

CALM HEAD OFFICE
Locked Bag 104
BENTLEY DELIVERY CENTRE
WA 6983
Ph (08) 9334 0333

CALM REGIONAL OFFICE
Brain Street
MANJIMUP WA 6258
Ph (08) 9771 7988

CALM DISTRICT OFFICE
Kennedy Street
PEMBERTON WA 6260
Ph (08) 9776 1207

CALM DISTRICT OFFICE
South Western Highway
WALPOLE WA 6398
Ph (08) 9840 1027

TINGLE SHELTER
Valley of the Giants
Ph (08) 9840 8263



DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

WELCOME TO KARRI COUNTRY

The State's southern forest region is dominated by karri, a eucalypt that grows only in WA's wettest corner. Karri is one of the tallest hardwoods in the world, reaching a maximum height of about 90 metres.

Many other forest trees grow in this diverse region, including the even rarer tingles, as well as jarrah, marri, bullich and blackbutt. There are also stunning wildflowers and the magnificent coastline of D'Entrecasteaux National Park.

Still, this is karri country to most people. The main belt of karri forest runs south from Nannup through Manjimup and Pemberton to the Frankland

River and then narrows as it stretches through to Denmark and Torbay, near Albany. Island pockets occur towards the west at Boranup, near Margaret River, and to the east in the Porongurups, near Mt Barker.

These forests cover about 200 000 hectares, about 80 per cent of the area that existed before European settlement. More than 90 per cent of the existing karri forest is on public land, including forests set aside in national parks, nature reserves and State forest. The forest is available for many community needs, including tourism, recreation, wildlife conservation, wood production

and water catchment protection.

WA's south-west has been occupied by Aboriginal people for at least 40 000 years. Shaped blades found near Walpole-Nornalup National Park have been dated to 6800 years ago. This makes them the oldest such artefacts discovered anywhere in Australia.

European settlers were drawn to the southern forest to farm and to cut timber. New towns and roads supported new industries, but farming and forestry still form the backbone of the region's economy.

Today, thousands of people visit karri country each year to see its many natural attractions,

including the old trees and regrowth forests at Big Brook and Founders' Forest. There's also great interest in the region's history, particularly its timber-town heritage and Aboriginal culture.

While there's plenty for visitors to explore on their own, there are also guided tours. Ring CALM's Manjimup office for details of tour operators visiting the Perup Wilderness Lodge, or:

Bwoka Boodja Dreaming: Set up and run by the Manjimup Aboriginal Corporation, these full-day tours operate from Karri Valley Resort, leaving at 9.30am. Visitors are taken

through the karri forest and into D'Entrecasteaux National Park and learn about Dreaming stories, bush food and other aspects of Aboriginal culture.

Manjimup Timber Park and Timber Museum: Situated next to the Manjimup Tourist Bureau (corner of Rose and Edwards streets), the State's only timber museum features forest information and relics of the old timber industry.

The Timber Park contains buildings and other items from a reconstructed timber town, complete with fire-spotting tower and stream-driven sawmill. Both are open every day between 9am and 4.30pm.

Forest Discovery Tours: A number of mills offer guided tours for interested visitors. Tour coaches leave from Manjimup Timber Park at 9.30am Mon to Fri and from the Forest Industries Centre, Brockman St, Pemberton, at 10.30am Mon to Fri.

Diamond Mill: Free conducted tours over the chipmill every Monday, Wednesday and Friday at 1.30pm and 3pm. Tours leave from Diamond Mill Tourist Centre, Eastbourne Road, Manjimup.

Pemberton Mill: Free conducted tours over the largest karri sawmill in the south-west. Times and days vary. Tours start from the Forest Industries Centre, Pemberton.

For further information:
Manjimup Tourist Bureau, (08) 9771 1831
Northcliffe Tourist Centre, (08) 9776 7203
Pemberton Tourist Centre, (08) 9776 1133
Walpole Tourist Bureau, (08) 9840 1111
Forest Industries Centre, (08) 9776 1622



Photos - Dennis Sorsan



Photos - Jiri Lochman

Looking after our forests

Forests are constantly changing. There are seasonal changes, such as flowering, and dramatic changes caused by drought and wildfires.

Nature manages these changes very well - forests are remarkably resilient and will recover from almost any catastrophic event. However, nature can't cope with all the artificial changes introduced since European settlement.

This is the reason we now have formal management plans to ensure the health of forest ecosystems. For example, the forest would be at risk if there was no management program to reduce forest fuels by strategically planned controlled burns. Devastating wildfires would be frequent, threatening lives, property and wildlife.

Forests are also under threat from new predators and disease, particularly from the European fox and dieback. Research into both problems

has led to comprehensive management strategies.

Fox control is managed under CALM's Western Shield campaign, which aims to expand predator control and then reintroduce native animals to their former habitats. Western Shield is being implemented over more than five million hectares of WA: the biggest wildlife recovery program in the world.

Like Western Shield, the strategy against the plant disease dieback includes on-the-ground operations and further research. Procedures are in place to help slow the spread of the disease by limiting the movement of soil infected with the fungus that causes dieback. There's also a fungicide which can be applied to rare plants threatened by the disease, although it's not possible to treat the whole region.

The way in which people want to use the forests must also

be managed. Forests can be used for a variety of purposes without damaging the ecosystem, as long as each use is regulated. Forests in this region support a major timber industry, are important sources of fresh water, are used by beekeepers, are a vital habitat for plants and animals which have disappeared from other parts of the State and are a major recreation source. All of these uses can coexist with each other and with the forests, if they are properly managed.

This is done by allocating conflicting uses to different areas of the forest, or at different times, and ensuring each use is sustainable. For example, almost half the karri forests are in conservation reserves, which are not available for timber harvesting. A system of road, river and stream reserves ensures that wildlife habitats and water quality are protected.

Forest management in WA has been developed over decades

to maintain all stages of the growing cycle, including old growth trees. This is done in State forest by ensuring that every hectare of forest cut for timber is replanted and by varying the rotation ages and timber harvesting systems.

There are 40 800 hectares of old growth karri set aside in the larger conservation reserves and another 14 600 hectares of old growth karri in road, river and stream reserves from which logging is excluded. The management plan adopted by the State Government in 1994, will ensure that the proportion of karri forest in the old growth stage will always be around 40 per cent.

Karri develops mature characteristics between 100 and 150 years of age. Contrary to popular belief, few karri and jarrah trees survive much longer than 350 years and most of the trees in old growth stands are younger than 250 years.

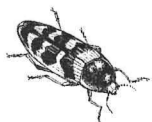
Many young trees don't survive to maturity because of disease, natural selection, insect damage or wildfire. Those that do make it to maturity are eventually replaced by younger trees in a natural cycle that never stops.

The forests can supply the products the community wants for as long as the community wants them, and can remain healthy while they do so.

Managing Editor: Ray Bailey
Regional Manager: Peter Keppel
Design and Production: Sue Marais
Published October 1997



Department of Conservation and Land Management



Eye to eye with the giants

Think you've seen a forest? How about standing inside a living tree trunk or high among the branches, watching birds fly below you?

You can do both at the Valley of the Giants in the tingle forest of Walpole-Nornalup National Park.

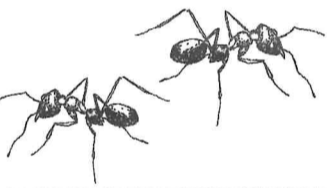
The award-winning Valley of the Giants development includes a treetop walk rising almost 40 metres above the forest floor and a walk trail right through some of the natural hollows in the old tingle trees.

Opened in 1996, the new development replaces an earlier picnic site which was literally being destroyed by the number of visitors coming to the area.

Twenty years ago, no tour of the south-west was complete without a photograph of your car parked in the giant hollowed out tingle tree at a picnic spot near Nornalup. Visitors would then follow a little path to see another dozen or so big tingle trees.

Like most eucalypts, tingles can't survive if the soil around their roots is compacted. The number of visitors trampling around the picnic area reached 100 000 a year by 1989 and the tree that featured in so many holiday photos collapsed. The little path to the other trees became just one of dozens of tracks and the car park expanded uncontrollably.

A solution had to be found and this became one of the priorities when CALM began work on a management plan for Walpole-Nornalup National Park in 1990.



The tingle forest was always going to attract visitors. The national park has three species of tingle tree which grow only in the Walpole area. Tingles grow to a height of 60 metres and have thick, heavily buttressed trunks which reach five metres or more in diameter.

A way had to be found for people to enjoy the forest without damaging it. The result is an elevated walkway known as the Tree Top Walk and the series of boardwalks that make up the Ancient Empire walktrail.

The new Valley of the Giants is about 500 metres away from the original site, where most of the tired old giants didn't have tall trunks and crowns.

The Tree Top Walk is made up of six lightweight bridge spans, each 60 metres long and four metres deep, supported between guyed pylons. The steel trusses rise slowly over terrain that falls to a deep valley. At its highest point, the Tree Top Walk is nearly 40 metres above the creek bed in the valley below.

The trusses were pre-fabricated in sections no longer than six metres and taken to the Valley, where they were bolted together before being hoisted into position. There was little disturbance to the forest and, amazingly, the 360 metre walkway occupies about three square metres of forest floor.

The Ancient Empire was designed with a mix of boardwalks and hardened paths. There's a universally accessible boardwalk to one of the most popular of the gnarled old trees and then the trail winds in and out, up and over and through several more giants.

The Valley of the Giants also has a gathering point and ticket office, known as the Tingle



Photo - Simon Westlake

Shelter, and family picnic area with barbecues.

visitors can see the Valley of the Giants from a new perspective on the Tree Top Walk

The Tree Top Walk has won numerous awards for its design. The judges in the 1996 National Project Landscape Architecture Award chose it from a field of 50 entries, saying: "in creating a

sustainable tourist attraction through careful design, the project was one of the most exciting pieces of public construction seen this decade."

The Valley of the Giants Tingle Shelter and Tree Top Walk were also honoured with civic design awards in 1996 and 1997.

The burning bush

Fire is as much a part of Western Australia's natural environment as wind, rain and sunshine. It has been part of the forest ecosystem for millions of years and native animals and plants have adapted to it.

Trees in the south-west forests drop enormous amounts of bark, leaves and twigs - as much as 11 tonnes of litter is shed per hectare every year in the karri forest. Over a few years, this builds up to a major fire hazard in our very dry summers.

Reducing this build-up is the only way to make it harder for future wildfires to take hold and to give firefighters time to attack the fire. Intense wildfires cause terrible damage, putting lives and property at risk, as well as the forests themselves.

Prescribed burning is a technique to burn off excess litter on the forest floor. It has been used across much of the forest for more than 30 years and was a recommendation of the Royal Commission called to investigate the 1961 fire that gutted Dwellingup.

Carefully planned burns take place about seven to 15 years apart - depending on forest

type - when the weather and ground moisture conditions are suitable. In spring, these are mild burns, with flames usually less than a metre high. Autumn burns are more intense, with up to eight-metre flames. Only parts of the forest are burned at any one time, creating a mosaic effect.

Wildfire has an obvious impact on forest trees like those in the Ancient Empire, creating blackened caves in the centre of their trunks. These trees survive because a burnt out hollow takes away only part of the trunk's living tissue, which is in a layer just below the bark.

The centre of the trunk, or heartwood, is the oldest part of the tree and usually the first to decay. Wood rotted by fungus burns easily, so the tree is vulnerable to any fire hot enough to burn through the healthy, outer layers. Once the heartwood has been exposed,

subsequent fires will burn deeper and deeper.

Australian bush plants have developed many different ways of coping with fire:

Buried buds - a plant can regenerate after fire from lignotubers, root buds or rhizomes that have been protected by an insulating layer of soil.

Bark-protected buds - the tough bark of some eucalypts also acts as insulation for dormant buds which will sprout if the tree's crown is scorched.

Flowers - plants that survive fires often flower heavily so their seed can take advantage of the cleared ground.

Woody seeds - many native plants, including karri, have hard, woody seed capsules, which insulate the seeds from the heat of a fire.

Fire weeds - some plants store hard seed in the soil. Fire triggers germination and whole crops of these "weeds" will spring up after fire.

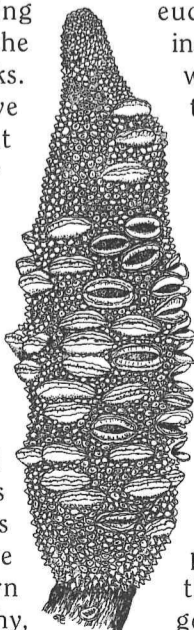
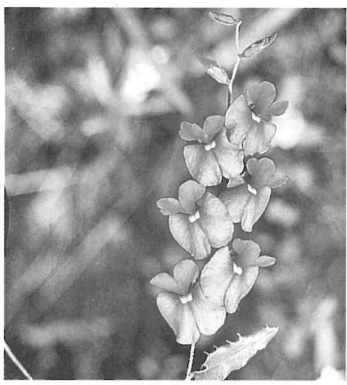


Photo - Michael James



coral vine



leopard orchid



karri dampiera

Photo - Cliff Winfield

Photo - Jiri Lochman

Photo - Marie Lochman

Take a hike

If you're heading down south from Perth it's a six hour drive to Walpole - or a six week walk.

The 650 kilometres from Perth to Walpole is the full length of the Bibbulmun Track until mid-1998. By then, WA's only long distance walktrail will stretch another 180 kilometres to Albany.

But the Bibbulmun isn't just for walkers with six weeks to spare and a lot of stamina. The track is also suitable for day and weekend walks, or even if you've just got an hour. The trail is signposted with a stylised image of the Waugal, the rainbow serpent spirit from the Aboriginal Dreaming, and there are brochures and maps showing where the track runs.

The Bibbulmun Track is named after a distinct Aboriginal language group who inhabited some of the areas on the south coast through which the track passes. The Bibbulmun people often travelled great distances for tribal meetings or to hunt, but the track doesn't follow any traditional route.

Begun in the 1970s by the then Forests Department, the track was first upgraded in 1988. CALM began a major realignment in 1993 to make it safer and more enjoyable for walkers. The new route will take walkers through some of the most scenic parts of karri country, including the Donnelly River Valley, Shannon National Park, D'Entrecasteaux National Park and Walpole-Nornalup National Park.

Nearly 50 new campsites are also being built, spaced between 10 and 20 kilometres apart, or roughly a day's walk. These campsites will have timber sleeping shelters, tent sites, rainwater tanks, bush toilets, picnic tables and fireplaces. The shelters are available on a first-come first-served basis.

CALM has produced a set of four maps for the Kalamunda-Brockman Highway section of the track - the Bibbulmun Track Northern Half Map Pack - which is available for \$19.50. A series of four guide books will be available when the newly-aligned track is completed in the second half of 1998.



THE BLOOMING FOREST

More than 1500 native species of flowering plants have been found in the southern forest. Ninety nine, including karri, are found nowhere else in the world.

Two groups of plants stand out in this natural collection: orchids (particularly *Caladenia*) and triggerplants (*Stylidium*).

The southern forest's terrestrial orchids are among the best developed in the world, with 152 species in the Warren botanical sub-district alone. Among the most spectacular are the *Caladenia*, or spider orchids.

The triggerplant gets its common name from its method of pollination. When an insect lands on the plant, it triggers a hair. This releases the anthers, which tap the insect and drop pollen onto its back. This process is repeated as the insect moves from plant to plant, cross-pollinating them all.

The forest vines are some of the showiest wildflowers in spring. These include the purple of wild sarsaparilla or native wisteria (*Hardenbergia comptoniana*), red coral vine (*Kennedia coccinea*) and white clematis (*Clematis pubescens*).

The tassel flower (*Leucopogon verticillatus*) is typical of the karri forest even though it looks like a small bamboo, more at home in a tropical forest. *Crowea* (particularly *Crowea angustifolia*) and karri boronia (*Boronia gracilipes*), together with the water bushes (*Bossiaea aquifolia* and *Bossiaea webbii*) are also classic karri forest species.

One of the oddest flowers in this region is *Pilostyles hamiltonii*. Although a cousin to the world's biggest flower (*Rafflesia arnoldi*) the red calyx and white petals of the *Pilostyles*

are only a few millimetres across. Both plants are parasites - their only "body" is a chain of cells inside the host plant and their flowers burst through the host's tissue to the outside.

Another unusual plant, the pitcher plant, grows in moist wetlands. The plant is a passive trap: shaped like a jug of water, complete with handle, it even has a lid which closes to prevent evaporation in dry weather. Insects such as ants climb in, then are unable to climb out again past a row of "teeth" on the rim of the jug.

Common wildflowers of the south-west forests has full colour pictures of many other flowering plants found in karri country. This pocket-size book is one of CALM's Bush Books series of practical field guides and is widely available for \$5.95.

The old, the rare and the noisy



pygmy possum

carpet python

western grey kangaroo

noisy scrub-bird



Photos - Jiri Lochman

Karri country has living links to Gondwanaland, the super-continent that Australia belonged to 65 million years ago.

The Walpole-Nornalup region in particular is one of the last remaining dwelling places for Gondwana species, including many spiders and snails. Another relict is the Shannon mud-minnow, found in the Shannon River and Broke Inlet.

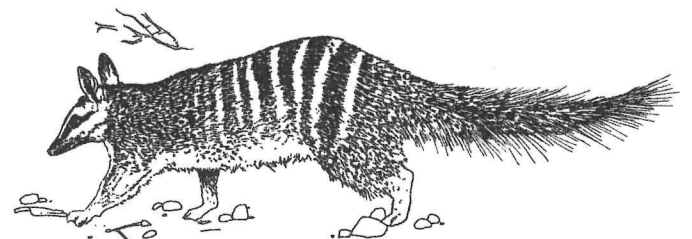
There are many less ancient species in the region, some of them found nowhere else. The famous norne (tiger snake) of Nornalup has several cousins in the region, including Mueller's snake, the little brown snake, the bardick, the dugite and the carpet snake. Of the 13 frog species the live in the area, one (*Geocrinia lutea*) is found only within 12 kilometres of Walpole.

D'Entrecasteaux National Park is considered critically important for the related *Geocrinia rosea* group.

The rare noisy scrub-bird has also been recorded in the area. This species was thought to be extinct until it was rediscovered at Two Peoples Bay, near Albany, in 1961. A CALM-managed recovery program has seen numbers increase to more than 1100, but they are restricted to habitat that has not been burned in the previous four to 10 years.

Some of the mammals found in the region include honey and pygmy possums, southern brown bandicoots, dunnarts and phascogales. Quokkas, chuditch, numbats, ringtail and brushtail possums, tammar and brushtail wallabies also occur, but their numbers have declined markedly this century, mainly because of introduced foxes. CALM's Western Shield fox control program will allow populations of these native animals to recover.

Read about karri country mammals in CALM's **Mammals of the south-west**, another of the pocket-sized Bush Books available for \$5.95.



numbat

SPOTLIGHT ON PERUP

Perup forest, home to some of the State's rarest mammals, also offers accommodation to human visitors.

The Forest Ecology Centre, about 40 minutes drive from Boyup Brook and an hour's drive from Manjimup, was specially designed for nature-based tourism operators, community organisations, schools, tertiary institutions and private visitor groups.

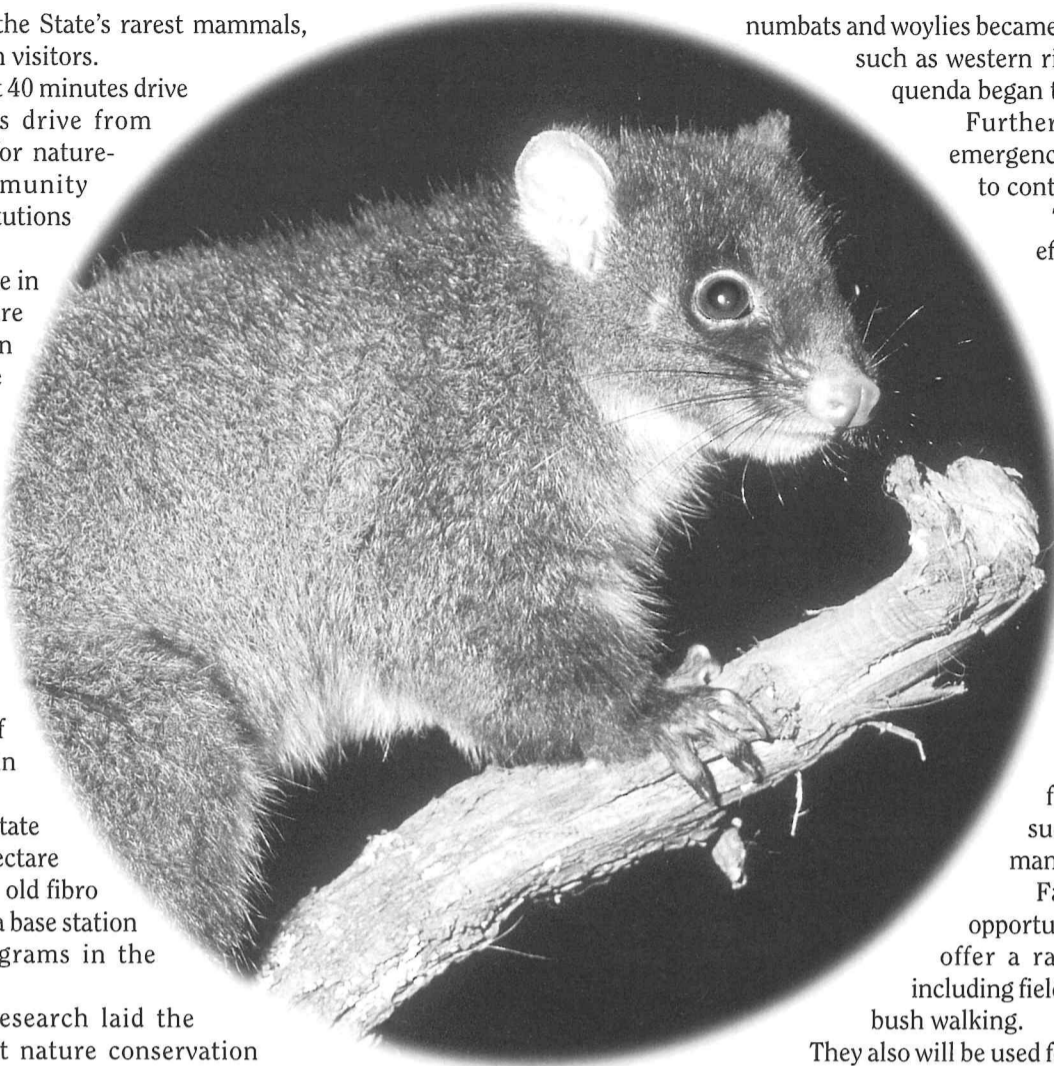
The centre can cater for 10 people in private rooms or 20 beds twin-share rooms, or for up to 35 people in dormitory style accommodation. The station-style homestead buildings are built of rammed earth, with pine over jarrah ceilings. The complex is essentially solar powered for electricity and hot water, and effluent is treated through a zero nutrient pollution disposal system.

The overall result has met the objective of an environmentally and ecologically sustainable nature-based tourism experience in what is one of the great nature conservation areas in the south-west.

The centre is on 100 hectares of State forest surrounded by the 52 000 hectare Perup Nature Reserve. It replaces an old fibro and iron farmhouse that was used as a base station for researchers carrying out programs in the surrounding jarrah forest.

Significantly, much of that research laid the foundations for Australia's biggest nature conservation program - Western Shield (*see below*).

The Perup work was into the effects of fire on woylies and tamar wallabies, rare species known to occur in the area. It was this early work in the 1970s that pointed to the fox as being largely responsible for the disappearance of many species of native fauna. A comprehensive fox baiting program was implemented in the reserve. It wasn't long before the researchers began to see numbats, a species thought extinct in the region. The tamar population boomed, sightings of



numbats and woylies became more frequent and other rare species such as western ring-tail possums (*left*), chuditch and quenda began to appear.

Further research confirmed that the re-emergence of these species could be attributed to control of fox numbers.

The original aim of the study - the effects of fire on woylies and tamar - also showed that fire was necessary to regenerate the thickets of heartleaf poison which were habitat for the animals.

It is one of WA's great natural advantages that the compound found in heartleaf poison can be used to control introduced predators without harming native species.

Perup was the base for the *Wild Weekend with CALM* program run in partnership with the University of WA Extension Service in the 1980s.

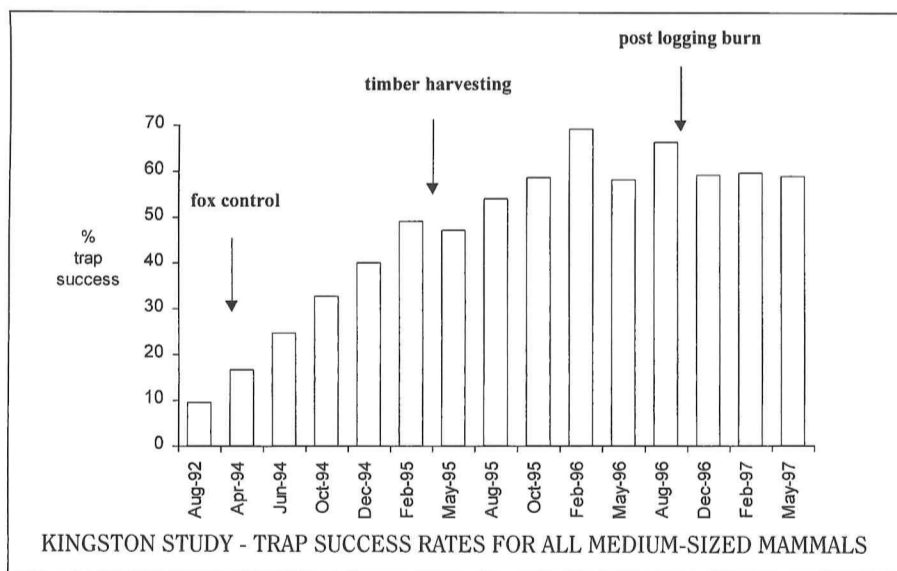
This program was the forerunner to CALM's highly successful *LANDSCOPE Expeditions* to many parts of the State.

Facilities such as these will provide opportunities for local tourism operators to offer a range of nature-based experiences including field studies, spotlighting expeditions and bush walking.

They also will be used for conferences and specialist courses. Perup Forest Ecology Centre is part of the Southwest Ecomuseum, an association of 20 natural and cultural-based tourist attractions, which include Bunbury Dolphin Discovery Centre, Caveworks at Margaret River and Karri Forest Discovery Centre at Pemberton. To enrol in a Perup course, phone UWA Extension on (08) 9380 2433. For information on courses run by tour operators, call CALM's Manjimup office on (08) 9771 7948.

Photo - Geoff Taylor

WESTERN SHIELD



The aim of the Western Shield wildlife recovery program is to stop foxes and feral cats from making a meal of WA's native animals. Within a few years, it's expected that up to 30 species of native animals will be significantly more abundant and more widespread than they were before Western Shield began.

Western Shield has several elements. Fox baiting is being carried out on a scale never before attempted with more than five million hectares under, or proposed for, baiting programs. Research into controlling feral cats has increased significantly. This will allow remaining populations of native animals to recover naturally and, in selected areas, allow the reintroduction of native animals to their former habitats.

Monitoring the impact of baiting shows that WA's fauna emblem, the numbat, has been brought back from the brink of extinction. Another threatened species, the woylie, has increased in abundance to the point where it has been taken off State and Commonwealth lists of threatened animals.

The graph (*left*) shows the results of the research being carried out in Kingston forest block, near Manjimup. All the mammals being monitored, including chuditch, quenda and brushtail possum, increased in number after fox control began. The Kingston Study is also measuring the impact of timber harvesting and control burns on native animals.

Read this and feel the magic.

There's magic in every issue of *LANDSCOPE* magazine. It offers beautifully written articles about WA's plants, animals and special places. They're easy to read, scientifically accurate and accompanied by stunning pictures from WA's top photographers. *LANDSCOPE* has won more than 25 awards in the past five years. Find out why by subscribing! You can have this superb 56-page magazine delivered to your door four times a year—spring, summer, autumn, winter.

Yes! I want to subscribe to *LANDSCOPE*

Mr/Mrs/Ms

Address

State Country (if not Australia)

I enclose a cheque/ money order for A\$24

I enclose a cheque/money order for A\$54 (Gold Star Pass, includes 1 year National Park Pass)

or please debit my Visa/Bankcard/Mastercard

outside Australia add \$20 per subscription

Signed Name

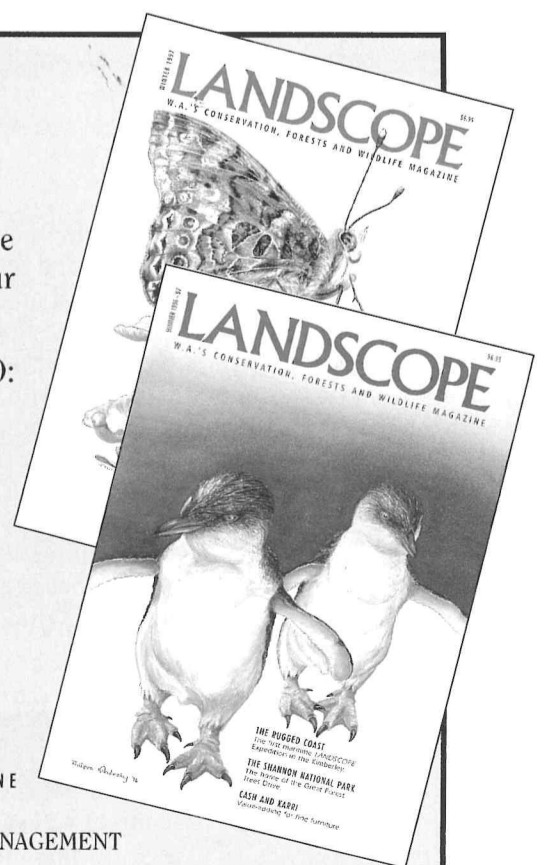
JUST FILL IN THE FORM AND SEND IT TO:

LANDSCOPE SUBSCRIPTION
Reply Paid 25
Locked Bag 29
BENTLEY DELIVERY CENTRE WA 6983

ENQUIRIES:
Department of Conservation and Land Management
50 Hayman Road
COMO WA 6152
Tel: (08) 9334 0333

LANDSCOPE
WA'S CONSERVATION, FORESTS AND WILDLIFE MAGAZINE

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT



Explore what the explorer missed

Although Admiral Bruny D'Entrecasteaux didn't think it was worth coming ashore for a look, thousands of visitors every year have since proved him wrong.

The French explorer sailed past what we now know as D'Entrecasteaux National Park in 1792 looking for land with a good water supply and agricultural potential. He reported that the area between Cape Leeuwin and Point D'Entrecasteaux was harsh and arid, with no sign of habitation.

Despite the admiral's verdict, Aboriginal people migrated through the area hunting and fishing and the area just inland is now the region's most productive farmland. The park itself is one of the most popular areas in the region for fishing and camping and bushwalking, attracting both residents and visitors, even though there is very limited access for two-wheel drive vehicles.

D'Entrecasteaux stretches 130 kilometres from Black Point near Augusta to Long Point west of Walpole. It's an area of spectacular limestone cliffs, white beaches, mobile sand dunes and extensive coastal heath and swamplands. This is still karri country, although the trees are smaller than those in the main forest belt and grow in scattered pockets among low woodlands of jarrah, bullich, yate and peppermint trees.

Lake Jasper, the largest freshwater lake in the southern half of WA, is also located in the park. The lake is thought to have been formed about 4000 years ago after a mobile sand dune blocked the path of a stream or river. The water covered ancient Aboriginal campsites and quarries that might not have been rediscovered had it not been for a severe drought in the 1980s. As the water level of the lake dropped, tree stumps, blackboy butts and dozens of flaked stone artefacts were revealed.

Staff from CALM and the



basalt columns, D'Entrecasteaux National Park (top) and Point D'Entrecasteaux from the air



WA Museum began shoreline investigations in 1988 and carried out an underwater survey in 1989. It was the first successful use of underwater archaeological techniques in Australia and one of only a few such successes around the world.

Windy Harbour, Broke Inlet and Mandalay Beach are the only areas in the park accessible by conventional vehicles, but there are four-wheel drive tracks to other coastal fishing and camping spots. Four-wheel

driving has supplanted the long-established tradition of riding to the coast on horseback. Stockmen used to bring their cattle to the coast to graze on native grasses and scrub over summer, when feed was scarce inland. This practice began in the mid-1880s and continued well into this century.

The park's natural isolation has kept large areas free from human development. Protecting its wilderness val-

ues, balancing the demands of local residents to continue using the area for recreation and managing the increasing number of visitors were the ingredients of the first 10-year management plan for D'Entrecasteaux, prepared by CALM in 1987.

Four-wheel drive, horseback riding and fishing clubs demanded unlimited access to the beaches while conservation groups argued that access to some beaches should be closed.

This debate, as well as others such as squatters' rights and the use of power boats on Lake Jasper, highlight conflicting community demands. Local residents and visitors all agree that the main feature of the park remains its "qualities of remoteness".

Please follow these tips if you're taking a four-wheel drive into D'Entrecasteaux:

- ❖ Ask for some advice before you go - join a four wheel drive club or ring or visit the local CALM office.
- ❖ Only vehicles and motorbikes which are licensed for the road are permitted to enter coastal areas.
- ❖ Let your tyres down to about 10psi (75kPa) - even wide tyres need to be deflated in sand.
- ❖ Select the right gear. You may have to experiment a little, but low range third should keep you moving at a comfortable pace and have enough power not to stall when the going gets heavier.
- ❖ Keep to existing tracks: driving on the scrub destroys the plants and you can stake your tyres.
- ❖ Don't speed along narrow one lane tracks and do sound your horn when you come to blind corners and ridges.
- ❖ Always carry a small shovel, a tyre pressure gauge and a portable tyre pump when going sand driving.
- ❖ Please clean the mud and soil off your vehicle before entering the park. Soil infected with the microscopic fungi that cause the plant disease dieback is easily transported on tyres and under vehicles. Where possible avoid puddles and mud and obey the track closed signs. There is dieback in some areas already but you can help limit its spread.

Rangers regularly patrol the coast and can help with advice and information on local conditions.

W H A L E S

Humpback and southern right whales (*pictured*) can be seen from many coastal lookouts in the region as they migrate between Antarctica and the warm waters off WA.

The best time to see the annual migration here is August and September, but the timber deck lookout at Conspicuous Cliff Beach, in Walpole-Nornalup National Park, is worth a visit at any time of the year. The scenic lookout is part of a redevelopment to improve facilities in this popular fishing and surfing spot, which is one of the few in the park with two-wheel drive access to the coast.

There's also an information shelter and toilets and the new Walpole to Albany section of the Bibbulmun Track will include this bay. The southern right whale (*Eubalaena australis*) and its smaller cousin the pygmy right whale (*Caperea marginata*) were named by hunters as the "right" whales to catch because they were slow moving and their oil-rich bodies floated after death. They were hunted almost to extinction, but their numbers have been increasing since whaling stopped in 1978.

Today, whale watching is a big attraction for visitors.



Photos - Dorothy & Les Bail

GREAT FOREST, GREAT DRIVE

Many people know Shannon National Park for its magnificent karri forest, but what's a snottygobble?

Why does the Shannon minnow spend summer in a mud burrow? Which trees will give you directions if you're lost? What are quokkas doing this far from Rottnest?

The Great Forests Tree Drive through Shannon National Park has been planned not only to show visitors some of the region's most magnificent karri forest, but to give an insight into its natural and social history.

The 48-kilometre scenic drive has its own park radio broadcasts, as well as picnic stops and signposted walks. The *Great Forest Trees Drive* map and guide book provides even more details about the area and the plants and animals of the southern forest.

A snottygobble, for example, is a small tree found in south-west forests. It's thought to have got its name because of the way its soft, fleshy fruit turns jelly-like when it drops on the ground and over-ripens.

The Shannon mud-minnow is a fish whose nearest relatives all became fossils millions of years ago, making the species a survivor from the days when Australia was part of the giant continent, Gondwana.

Like many rivers in the southern forest, the 60-kilometre Shannon flows only after winter rains. During the dry season, the water level drops

and the river becomes a series of pools in a dry bed.

The mud-minnow copes with this change in surroundings by burrowing into the river bed at the start of the dry season and forming a small water-filled chamber. It then seals the chamber and waits for the river to fill again.

Shannon doesn't have talking trees to help lost travellers, but the reference trees through the park speak volumes if you know how to read them.

Reference trees were a breakthrough in mapping WA's south-west forests when they were introduced in 1924. The system was based on a grid one mile by one mile: reference trees were surveyed and specially marked by cutting a shield into the trunk.

Anyone travelling through the forest could find a reference tree and pinpoint their location on a map. Many of the white-painted shields on reference trees in Shannon are still visible today.

Shannon townsite, a timber mill settlement begun in the late-1940s, employed 162 men at its peak. The mill produced enough timber to build 1000 houses a year and, for a time, was the biggest in the State.

The Government-owned mill was sold in 1961 and then closed in 1968 when the new owners rationalised their timber business. Logging in the Shannon basin continued until

1983, then the area was gazetted as a national park in 1988.

After Shannon mill closed, all the buildings were sold and transported away. All that's left are traces of the town, such as the exotic trees still growing in the cleared areas of the Shannon camping ground.

However, Shannon is still quokka country, despite many people's belief that they are found only on Rottnest Island, off Perth. These small wallabies were once common across the State's south-west before European settlement meant the loss of some habitats and the arrival of the fox.

Mainland quokkas are now found only in isolated pockets, preferring densely vegetated areas around swamps and streams, which makes them hard to spot. Quokkas are one of the species benefiting from CALM's Western Shield program to control introduced predators.

A new tourist road, similar to the Great Forest Trees Drive, is being planned for the forest around Pemberton.

The million dollar project will provide greater access to the area for two-wheel drive vehicles and link Founders' Forest, Beedelup and Warren National Parks and Big Brook forest.

The 84-page *Great Forest Trees Drive* is published by CALM and available from CALM offices, the RAC and tourist bureaux for \$12.95.



The Great Forest Trees Drive (above) includes several stops, such as Snake Gully Lookout (below).



Photos - Cliff Winfield

Pitch a tent...

Most camping grounds in the region have basic facilities such as bush toilets, fireplaces and tables. A small fee is usually charged at these sites in national parks, which can be paid at the self-registration post where provided, or to the ranger. You may camp for up to three nights.

Vehicle-based camping is permitted in much of State forest and at set campsites in national parks. Back-packing campers on foot are welcome in State forest, national parks and some nature reserves. No camping or caravanning is permitted at day visit sites and camping is not generally allowed in nature reserves. There are privately-operated caravan parks and campgrounds near national parks at Pemberton, Windy Harbour, Walpole and Nornalup.

If you are camping at sites without facilities, follow the code of ethics for the bush:

- ❖ if you can, bring firewood. It is illegal to gather firewood in national parks;
- ❖ don't light fires on hot windy days. Better still, reduce the potential for a bushfire by using portable fuel stoves at all times;
- ❖ camp only in existing cleared areas.
- ❖ take your rubbish home with you.

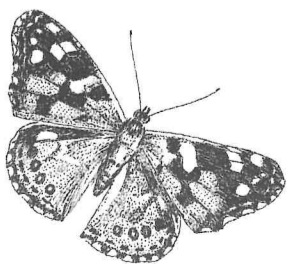
or ride the trail

Visitors are allowed on any road except those signposted as logging roads or for management access only. Other roads are closed off because of the risk to the forest from dieback disease.

Dogs are allowed in State forests, but not in national parks and nature reserves. Please look out for signs warning that the area has been baited for foxes under CALM's Western Shield program. It's best to avoid taking your dog into these areas.

Horses are permitted on the same roads and tracks in State forest that are open to other public traffic, unless the roads are marked otherwise, but not on walk trails.

Bicycles are allowed on public roads and vehicle tracks through CALM lands and on specially designated bicycle trails, including dual use walk trails. Bicycles are not allowed on the Bibbulmun Track or other walk trails, or in dieback risk areas.



...but stay safe

Please take a few simple precautions when you're in forest areas.

Weather conditions here can change rapidly. In winter, bring a warm, waterproof coat and in summer, you'll need sun protection and drinking water. Carry enough water for your visit and an extra allowance in case you stay longer than expected.

On windy days, keep a careful lookout for falling branches, particularly in the karri forest. Karri trees may drop heavy limbs to the ground, even on hot, still days.

Look out for signs alerting you that log trucks may be using the same road you are. If log trucks are in the area, drive slowly, keep to the left and be prepared to stop.

When parking your car, make sure it's well off the road surface so other traffic can pass safely.

Avoid areas where tree felling is in progress unless you are accompanied by an experienced CALM officer. It is difficult for workers to see and hear visitors when heavy machines and trucks are working.

The forests of the south-west are friendly places, but be aware that in summer there will be snakes and insects such as mosquitoes and march flies.

FEES

National park entry fees and camping fees apply at different locations around the State, to help maintain and improve visitor facilities.

A fee of \$5 per vehicle entering Gloucester, Warren and Beedelup national parks applies until the beginning of 1998, when it will rise to \$8 a vehicle. The new fee will also be charged in the Shannon and D'Entrecasteaux National Park from the beginning of 1998.

Concessions and discount passes are available, including the Gold Star Pass (\$54, rising to \$64 on January 1, 1998) which provides free entry to all WA parks for 12 months and includes a subscription to CALM's award-winning magazine, *LANDSCOPE*.

The fee for passengers on commercial tour buses will rise from \$2 to \$3 on 1st October 1998.

Camping fees are set according to the level of facilities provided. They range from \$8 (\$5 in 1997) for one to two people per site, per night, in the basic category up to \$11 (\$9 in 1997) in the third category which includes facilities, ablutions, showers and caravan sites with electricity. Each additional person is charged \$4 (\$3 in 1997) and the fee for children remains \$1 per night.

Lookout!

Dave Evans Bicentennial Tree, south of Pemberton



Wildfire in the forest is unavoidable. Lightning is the most common natural cause, especially during summer storms when the forest is dry, but arson was proved or suspected in more than half of WA's wildfires in 1995-96.

Spotting a wildfire fire before it gets too big gives firefighters their best chance of bringing the blaze under control before it does too much damage. Before fire spotter planes were introduced in the early 1970s, looking out for fires was the job of men and women on a network of towers and lookout trees.

This system was begun in the jarrah forest, where specially built towers were strategically located on high ground. As forestry operations expanded into the karri forests, there was an urgent need for similar lookouts, but there was a problem - it wasn't going to be easy to build taller towers than the trees, especially as there were few prominent hills in the region.

Local forester Don Stewart came up with a possible solution. Why not use the tallest of the tall karris for fire

lookouts? His colleague Jack Watson designed his own climbing gear and later used it to scale 40 trees to check which would make the best lookouts.

Once a suitable tree was chosen, the rungs of a ladder were hammered into the tree trunk. The holes for these rungs were drilled by hand by a man sitting on the rung below, moving slowly up the tree as each new rung went in.

The top of the tree was then lopped by a single axeman about 40 metres off the ground, to give the lookout cabin a clear view, and then the timber to build the cabin was hauled up by rope and pulley.

The first lookout in the karri forest was the Alco Tree, built in 1936-37, 16 kilometres north-west of Manjimup. Its cabin floor was 24 metres above the ground.

The tallest lookout cabin built between 1936 and 1952, known as Gardner 2, was 63 metres high. It replaced Gardner 1, just south of Pemberton, which was declared unsafe after only two fire seasons because the upper branches had deteriorated.

A Forests Department file

later noted: "Top of this tree fell off in 1966 (apparently in a storm)."

There were 13 towers built, most of them in tall trees.

Today, the three lookout trees open to the public are major attractions. There's Gloucester Tree, just three kilometres from Pemberton, Dave Evans Bicentennial Tree, eight kilometres south of Pemberton, and Diamond Tree, on South Western Highway between Pemberton and Manjimup.

The lookouts at Gloucester and Diamond trees are both about 60 metres off the ground and Bicentennial lookout is more than 60 metres high, making it the highest treetop lookout in the world.

Lookout towers and trees still provide a useful backup for CALM's spotter planes, especially when wind conditions are unsuitable for the planes.

*The full story of the fire towers and trees is told in **Lookouts of the Karri Country** by Dave Evans, published by CALM and available for \$14.95 at tourist outlets and CALM offices.*

Follow the Rainbow Trail

Big Brook is a magnificent karri forest that attracts thousands of visitors every year, even though it was clearfelled earlier this century.

The whole forest was logged in the 1920s and regenerated by fire in 1930. It was one of the first tourist attractions developed in the karri forest after the Second World War. Tourism in the rest of the forest developed partly on the roads built by the timber industry.

Big Brook Dam, built in 1986 to top up the water supply to Pemberton and the local trout hatchery, offers a range of activities, including swimming and trout and marron fishing in season. There is a popular walk trail around the dam accessible to wheelchairs and prams, with shelters and seats at rest points along the way.

Settlers around the turn of the century saw the beauty of the southern forests, but they also saw the promise of good farmland to grow food for the colony. Forest clearing began and many trees were ringbarked before the Forests Act was passed in 1919. Forestry became a more conservation-minded alternative to clearing and in 1925, Big Brook became the first State forest in karri country.

The first conservator of forests, Charles Lane Poole, saw the karri regrowth at an abandoned farm nearby - now called Founders' Forest, formerly the 100-Year Forest - and at Boranup, near Augusta. He noted that karri doesn't grow well under the shadow of remaining big trees and that karri seeds are regenerated by fire. This was the basis for the practice of clearfelling and then



Big Brook forest reflected in the dam

Photo - Cliff Winfield

using controlled burns to regenerate the logged area.

By the summer of 1930, about 2000 hectares of Big Brook karri had been clearfelled to produce logs for the Pemberton mill. A spark from a steam locomotive started a wildfire which swept down the valley. Accidental or otherwise, the fire had the required effect: the remaining karri dropped their seed on to the ashbed below and the seed germinated the following winter. Within two years, the karri regrowth was almost impenetrable. This was nature's way of dealing with an area of fertile forest.

Nature can also slow down prolific regrowth. Some trees become dominant and others gradually die out. After about 50 years Big Brook was thinned of nearly half its trees. These provided logs for veneer production, sawlogs for local mills, poles for power transmission and residue for woodchips to make paper. The trees that were left grew straighter and stronger.

Big Brook remains a tourist attraction because of its magnificent 50-70 metre high karri. It is also a beautiful demonstration of the resilience of the forests of the south-west.

GLOUCESTER NATIONAL PARK (C4)

Best known for the Gloucester Tree, this park flanks the east side of the town of Pemberton. The park contains areas of fine karri and jarrah forests and is popular with day walkers from Pemberton.

Gloucester Tree (C4)

The Gloucester Tree is the highest fire lookout tree in the world. By climbing its 153 rungs to a height of more than 60m, you are rewarded with a commanding view of the surrounding forests and farmland. Information at the tree tells you more about its history.

Several walking trails start from the Gloucester Tree. Walks vary in length from 400m to 10km. A guide to the bushwalks around Pemberton is available from CALM offices or the Tourist Centre in Pemberton.

Where is it?: 3km from Pemberton. Turn at the Post Office and follow the signs to the tree. Alternatively you can walk from town. Once you reach the park boundary, follow the walktrail signs to the tree.

Travelling time: 5 mins by car from Pemberton, 90 mins return on foot.

What to do: Climb the tree, bushwalk, picnic or barbecue, photography.

Facilities: Toilets, information, water, barbecues, picnic tables, walking trails.

Best season: All year.

The Cascades (C4)

The Cascades lies at the southern end of Gloucester National Park, where the Lefroy Brook flows over a series of small rocky shelves. The brook changes from a gentle flow in midsummer to a raging torrent in winter. A walktrail and foot bridges take you to the best viewing points. On-site information tells about the annual breeding run of the mysterious lamprey.

Where is it?: 6km from Pemberton. Head towards Northcliffe and turn left at Glauders Road. Follow the signs to the Cascades.

Travelling time: 10 mins by car. You can also catch the tram or walk from the Gloucester Tree.

What to do: Short walk, barbecue or picnic, photography, trout and marron fishing in season.

Facilities: Boardwalks and walktrails, information, barbecues, picnic tables, toilets.

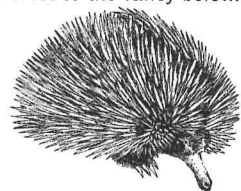
Best season: Winter and spring.

WARREN NATIONAL PARK (C4)

Warren National Park, only 11km from Pemberton, covers more than 3000 ha of magnificent virgin karri forest straddling the valley of the Warren River. Heartbreak and Maidenbush trails wind their way through the park, giving excellent views of the Warren Valley and access to the river. These roads are steep and can be slippery so take care - they are not suitable for towing caravans or trailers. Also in the park is the Dave Evans Bicentennial Tree. You can climb to the top and get a bird's-eye view of the surrounding countryside.

Heartbreak and Maidenbush trails (C4)

Driving these roads is the best way to see Warren National Park. Here you can wind your way down to the river and find a quiet picnic or camping spot right on the banks of the Warren River, or stop at the Warren Lookout to take in the view through the karri forest to the valley below.



echidna



Photo - Jiri Lochman

climbing Gloucester Tree

Where is it?: 11km from Pemberton. Head south towards Northcliffe and then follow Old Vasse Road until you reach Heartbreak Trail.

Travelling time: 20 mins by car.

What to do: Camp, picnic or barbecue, swim, trout and marron fishing in season, walking and photography.

Facilities: All campsites have toilets, picnic tables and barbecues.

Best season: All year.

Dave Evans Bicentennial Tree (C4)

One of the three fire lookout trees in the area which is open to the public. The tree was pegged in 1988 as part of Australia's bicentenary celebrations. Today you can scale the tree and look out over Warren National Park and the surrounding farmland.

Where is it?: 11km from Pemberton. Travel south from Pemberton towards Northcliffe, then follow Old Vasse Road. Look for the signs to the tree.

Travelling time: 20 mins by car from Pemberton.

What to do: Climb the tree, picnic or barbecue, photography.

Facilities: Toilets, barbecues, picnic tables, information.

Best season: All year.

BEEDELUP NATIONAL PARK (B3)

Beedelup National Park surrounds the Beedelup Brook and features the Beedelup Falls. Covering 1500 ha, the park includes dense karri forest, mixed forest of karri/marri and jarrah/marri and some beautiful stands of pure marri. There's also the Walk-Through Tree, formed when a hole was cut in this giant karri tree in the 1970s. You can stand "inside" the trunk, with more than 150 tonnes of tree above you. As you leave the park and head towards Pemberton you pass through Karri Valley, one of the prettiest forests in the district.

Beedelup Falls (B3)

Beedelup Falls are a small but attractive series of rocky cascades.

Foot bridges (including a suspension bridge) and timber decking give good access to view and photograph the falls. A walktrail also leaves from the falls to Karri Valley Resort and takes about 60 mins return.

Where is it?: About 18km west of Pemberton along Vasse Highway.

Travelling time: 20 mins by car from Pemberton.

What to do: Walk, picnic, view the falls, photography.

Facilities: Walktrails, boardwalks and bridges, picnic tables.

Best season: The falls are pleasant all year, but to see them in full flow, visit in winter or early spring.

D'ENTRECASTEAUX NATIONAL PARK (B4)

D'Entrecasteaux National Park stretches 130km along the south coast between Augusta and Walpole and covers more than 114,000 ha. Here you will find long white beaches, rugged cliffs and vast coastal sand dunes, backed by extensive coastal wetlands and islands of karri forest. While most of the access to the park is still by rugged 4WD tracks, some parts of the park are accessible by two-wheel drive.

Yeagarup Lake (B4)

Yeagarup Lake is the gateway to the coast and Yeagarup Dunes, a vast mobile sand dune. Here on any weekend you can find four-wheel drivers lowering their tyre pressure, pumping up their tyres or sharing a story about the fish they caught.

Where is it?: Turn onto Old Vasse Road (sometimes called Ralph Road) from Vasse Highway. Turn onto Ritter Road and follow it to the end, but be careful, as this road is sometimes rough.

Travelling time: 35-40 mins by car from Pemberton.

What to do: Picnic or barbecue, swim, head for the coast.

Facilities: Picnic tables, barbecue, toilets.

Best season: Spring and summer.

Mount Chudalup (D6)

This massive granite outcrop rises 188m above the surrounding inundated plains to reveal unobstructed views of the fringing karri and jarrah forest merging to heathlands. In ideal conditions, climbers are rewarded with view 30km distant to D'Entrecasteaux National Park and the coast. A 1km walktrail to the summit leads from the carpark. This is a moderate 1 hr walk with some steep sections.

Where is it?: 16km south of Northcliffe on Windy Harbour Road.

Travelling time: 15 mins by car from Northcliffe.

What to do: Walk to the summit, photography, birdwatching, barbecue or picnic, see the orchids and other wildflowers in season.

Facilities: Barbecue, picnic tables.

Best season: All year - but avoid days with strong winds or storms.

Salmon Beach (C6)

A beautiful beach ideal for fishing, with spectacular coastal scenery. Swimmers should take care, as the beach can be unpredictable and subject to strong rips during windy weather or large swells.

Where is it?: 34km south of Northcliffe. Turn off Windy Harbour Road onto Salmon Beach Road just before entering Windy Harbour settlement.

Travelling time: 30 mins by car from Northcliffe.

What to do: Fish, surf, swim (see note above), picnic, beachwalking, photography.

Facilities: Toilets, covered picnic area, picnic tables, coastal lookout.

Donnelly Boat Landing (B4)

A picturesque picnic and camping site on the Donnelly River. It is the only power-boat launching ramp on the river. An 11km boat or canoe trip downstream takes you to the mouth of the river and the spectacular coastline of the Southern Ocean. Steep limestone cliffs and white sandy beaches greet you at journey's end.

Care is needed as there are many underwater obstructions in the river.

Where is it?: About 25km west of Pemberton along Vasse Highway. Turn south from the highway onto Donnelly Boat Landing Road and travel 5km to the river.

Travelling time: 35 mins by car from Pemberton.

What to do: Camp, bushwalk, picnic or barbecue, canoe, fish or catch marron in season, swim.

Facilities: Toilets, barbecues, picnic tables, launching ramp.

Best season: November to April.

SHANNON NATIONAL PARK (E5)

Shannon National Park protects almost the total catchment of Shannon River, from its head waters to the Southern Ocean. The park covers 53,500 ha, including old growth and regrowth karri forests, and biologically rich heathlands and wetlands. Information shelters tell the story of the Shannon, or you can listen to the park broadcasts at signposted stops around the Great Forest Trees Drive. There are also camping and walking opportunities within the park.

Shannon campground (E5)
(camping fees)

This once-thriving mill town is the ideal campground base for exploring the riches of Shannon and D'Entrecasteaux national parks and surrounding attractions.

Shannon campgrounds can accommodate all types of campers comfortably, whether they are backpacking, tenting, caravanning, in a camper wagon or bus.

Where is it?: 33km east-north-east of Northcliffe, 53km south of Manjimup.

Travelling time: 30-45 mins from either approach.

What to do: Scenic drive, picnic or barbecue, camp, swim, canoe, fish for trout or marron in season at Shannon dam, shore fishing at Broke Inlet and D'Entrecasteaux National Park, bushwalk - Shannon dam walktrail (an easy 3.5km walk through the Shannon River Valley), Rocks walktrail (a moderate 5.5km walk with some steep sections, climbing alongside karri forest to several lookouts).

Facilities: Level campsites, group or single, some with power, barbecues, firewood, picnic tables, hot showers, drinking water, flushing toilets, hut accommodation complete with bunk beds and pot belly, walktrails, scenic drive, park radio. Camp hosts (Dec-April).

Best season: All year. Chances are that apart from peak times (January and Easter) you can pick and choose the site that suits you best.

BIG BROOK FOREST (C3)

Big Brook dam is one of the most picturesque places in karri country. Views across the dam to the forest make it a must for visitors to the area. When the dam was built in 1986, facilities were provided for picnicking, walking, swimming, nature study and fishing. An easy 3.5km trail circles the dam and is suitable for prams and wheelchairs. There are plenty of picnic and barbecue facilities, bird hides and a swimming "beach". Another walktrail takes you around Big Brook Arboretum.

Where is it?: 8km from Pemberton. Go past the Pemberton caravan park and turn right onto the Rainbow Trail, just past the trout hatchery. Follow the Rainbow Trail, an old logging railway alignment, to the dam.

Travelling time: 15 mins by car from Pemberton.

What to do: Walk, swim, canoe, windsurf, picnic or barbecue, camp, nature study, trout fishing and marroning in season.

Facilities: Toilets, picnic tables, barbecues, walktrails, information, bird hides, swimming area, Rainbow Trail scenic drive, arboretum.

Best season: All year.

Founders' Forest (C3) (formerly 100-Year Forest)

The site was originally cleared by early settlers to the district in 1865 so they could grow wheat. The crop failed and the farm was abandoned in 1867. After a bushfire in 1875, karri seed fell and germinated and the big trees began their growth cycle by natural regeneration. Looking at the forest today, you would never believe it was once a wheat field. Walktrails lead from the picnic area and give excellent views through the 70m tall trees.

Where is it?: 13km from Pemberton. Turn north off Vasse Highway onto Pemberton North Road and then north onto Smith Road.

Travelling time: 15 mins from Pemberton.

What to do: Bushwalk, photography, picnic or barbecue, birdwatching.

Facilities: Barbecues, picnic tables, information, walktrails.

Best season: All year.

BROCKMAN SAWPITS (C4)

These four reconstructed sawpits show the way big trees were sawn into timber 100 years ago.

Where is it?: 16km from Pemberton. Drive south towards Northcliffe and then turn left on Rows Road.

Travelling time: 15 mins from Pemberton.

What to do: Bushwalk, picnic or barbecue, birdwatching, photography.

Facilities: Barbecues, picnic tables, information, walktrails.

Best season: All year.

BOORARA CONSERVATION PARK (D6)

Conservation parks are similar to national parks except that they are usually smaller or may have been affected by past land use. Boorara Conservation Park is 610 ha of virgin karri and marri forest. Not far from Northcliffe, the Boorara Tree and Lane Poole Falls are within this conservation park.

Boorara Tree (D5)

This historic fire lookout tree, one of the last lookouts of its kind built in the southern forest in the 1950s, offers something different. The tree crown with its cabin has been removed. If you look up the tree you can still see the original wooden pegs climbing their way up the trunk.

Where is it?: 17km east of Northcliffe. Follow Boorara Road from Northcliffe.

Travelling time: 20 mins by car (on a well-maintained gravel road).

What to do: Bushwalk, picnic or barbecue, photography.

Facilities: Picnic table, barbecue, walktrail to Lane Poole Falls.

Best season: Winter or spring.

Lane Poole Falls (D5)

One of the most spectacular waterfalls to be encountered in the karri forest. The walktrail leading to this secluded location is a treat in itself. Meandering through the dense understorey of the forest, it is a blaze of colour when the spring wildflowers are in bloom.

WALPOLE DISTRICT

WALPOLE-NORNALUP NATIONAL PARK (G8)

Walpole-Nornalup National Park contains nearly 20,000 ha of diverse vegetation and landforms, from towering karri and tingle forests to coastal heath and wetlands. The park, which surrounds the towns of Walpole, Nornalup and Peaceful Bay, also includes many pristine forests and a wilderness area. The rugged coastline, peaceful inlets and rivers are a major feature of the park's beauty. The park is probably best known for the huge buttressed red tingle trees which are unique to the Walpole area.

The park's many attractions also include the award-winning Tree Top Walk, in the Valley of the Giants.

Coalmine Beach and The Knoll (G8)

Coalmine Beach is within Walpole-Nornalup National Park, on the south shore of the beautiful Nornalup Inlet. An introduction to the area is provided at a shelter on Coalmine Beach Drive. A boardwalk leads to a high lookout above cliffs whose base contains a shallow seam of low-grade coal.

A carpark, jetty and boat ramp are found at Walpole Yacht Club, which marks the start of a beach popular with fishermen, swimmers and sailors.

The Knoll is a peninsula which divides Nornalup and Walpole inlets and is accessible by the one-way



Photo - Jiri Lochman

pygmy possum

sealed scenic drive, which follows the perimeter of the Knoll. A mosaic of vegetation and landform features are found here, including colourful swamp bottlebrush heathland in the flats, coastal blackbutt, peppermint and bullich woodland adjacent to the headlands, and majestic karri and yellow tingle forest growing right down to the inlet.

Where is it?: 3km east of Walpole along South Coast Highway.

Travelling time: From Walpole, 5 mins by car, 15 mins by bicycle or 30 mins walk from Pioneer Park along the Coalmine Beach heritage trail.

What to do: Drive around the Knoll, visit several lookout points, swim, fish from the beach, jetty, boat or rocky shoreline of the Knoll, windsurf, sail, beachcomb, bushwalk on the heritage trail or on walktracks on the Knoll, picnic at a lookout vantage point or at the barbecue located near the channel. Stay at the Coalmine Beach caravan park in order to have time to enjoy the area.

Best season: All year.

Coalmine Beach Caravan Park (G8) (privately operated)

Overlooking the sandy beach and the yacht club, the 3-star caravan park is nestled in shady peppermint and sheoak woodland. A complete range of accommodation includes self-contained chalets and a camp kitchen and ablution blocks for the caravans.

occurrence of this forest type, which is only found within 15km of Walpole. It is the most popular destination for visitors to the Walpole district.

A carpark, with picnic facilities and toilets nearby, is the visitor's starting point. A path leads down to the Tingle Shelter, from where you can set out on the Tree Top Walk or explore the Ancient Empire, an area of outstanding red tingle forest. The Ancient Empire includes protective boardwalks that take you around - and through - some of the giant tingles.

Tree Top Walk (H7)

Experience the excitement of exploring the canopy of the magnificent tingle forest. Beginning at the Tingle Shelter, you can walk along a 420m long steel-truss walkway which leads over a deep, red tingle gully. The walkway rises, with no steps, on a gentle grade suitable for children, wheelchairs and the elderly, up to 38m above the forest floor. A small admission fee is charged and family passes are available. A walktrail links the area to the Ancient Empire.

Where is it?: 13km east of Walpole. Travel along South Coast Highway past Nornalup townsite to Valley of the Giants Road. This sealed road leads to the Valley of the Giants recreation area.

Travelling time: 20 mins by car from Walpole.

Best season: All year.

Conspicuous Cliff (H8)

This is one of only three places around Walpole which offer car access to the coast (the others are Peaceful Bay townsite and Mandalay beach in D'Entrecasteaux National Park).

Appreciate the fabulous coastal heathland featuring swamp paperbark and red flowering gum. Often grown as a feature tree, it grows naturally between Frankland River and Denmark, with a few populations east of Albany.

Where is it?: South Western Highway access is just east of Valley of the Giants Road. Turn south on Conspicuous Beach Road and drive along the gravel road to the coast.

Travelling time: 30 mins by car from Walpole or 15 mins from the Valley of the Giants recreation area.

MANDALAY BEACH (F8)

Mandalay Beach takes its name from the Norwegian barque *Mandalay* wrecked there in 1911. It is one of only three places in D'Entrecasteaux National Park where you can reach the coast by 2WD vehicle. Mandalay is popular with fishermen, but it is worth the visit for the spectacular views of the southern ocean and of Chatham Island, 3km offshore.

Where is it?: 18km west of Walpole. Turn off South Coast Highway at Crystal Springs and follow the narrow winding road to the beach. Take extreme care.

Travelling time: 35 mins by car from Walpole.

What to do: Fish, bushwalk, sightsee, photography (especially at dusk), beachcomb, swim (beware of strong rips).

Facilities: Walktrail, boardwalk and stairway to the beach, information.

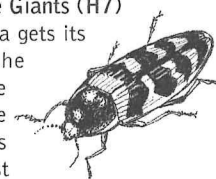
Best season: All year.



Photo - Dennis Sorson

Valley of the Giants (H7)

This famous area gets its name from the large red tingle trees which are found there. It is the eastern most



What to do: See whales (in spring), photography, beachcomb, surf (experienced surfers only), and fish from the beach. Rock fishing is hazardous here as in most coastal areas, so be careful of freak waves. Beware: the beach has rips at all times, so swimming is not advised.

Facilities: Carpark, toilet and stairs leading down to the beach via permanent freshwater springs.

Best season: All year for salmon fishing; mid-late summer for surfing; winter and spring for whale watching and wildflowers.

MOUNT FRANKLAND NATIONAL PARK (G6)

Mount Frankland National Park contains some of the most magnificent karri forest in the region. The park's 31,000 ha covers a huge variety of vegetation, including the red flowering gum. The park is rugged and wild and for the most part has limited access. The most visited area is the granite knoll, Mount Frankland.

Mount Frankland (G6)

On the upper slopes of a granite outcrop system, this recreation area includes a small campsite with a hut, toilet, water and barbecue. From here, explore the area by walking the two tracks, one around the base of the knoll and the other via steps to the summit, from where panoramic views of forest are found in all directions. On a clear day looking eastwards you can see the Porongurup and Stirling ranges.

During summer, the summit is also used as a fire lookout tower and is staffed during dry weather.

Where is it?: Mount Frankland is reached by car from Walpole via North Walpole Road then east along Mount Frankland Road. From South Western Highway, turn east at Beardmore Road for 25km, perhaps stopping at Fernhook Falls.

Travelling time: 40 mins by car from Walpole or 30 mins from South Coast Highway.

Facilities: Toilet, water, small campsite, barbecue, hut, information shelter and walktracks.

Best season: Winter and spring (for the orchids and other wildflowers).

Fernhook Falls (F6) (camping fees)

This is near the upper reaches of Deep River, which is one of few rivers in the south-west with a completely forested catchment. The falls are spectacular in winter, and empty into a pool, which is a year-round attraction.

The site accommodates both day-visitors and campers. Visitors can reach the many river-viewing locations on walktracks and boardwalks, which protect the riverine vegetation. The boardwalks continue to the pool, where a canoe launch has been built. Tracks continue from here to the camping area.

Information about the forest is presented at the picnic area in a converted hut, which was used to house forest workers during construction of the bridge on Beardmore Road.

Campsites each have barbecues, tables and access to nearby toilets. Two huts featuring solid fuel heaters and double-bench beds are available for campers' use, although often they also serve as alternative picnic sites for day visitors. One hut is set up for group camping, with sites for 6-10 tents. Wood is normally provided, but large groups are asked to supply their own firewood.

Travelling time: 40 mins by car from Walpole via North Walpole Road or South Western Highway. Visitors often use both routes as a circular drive.

What to do: Picnic, view the falls, camp, swim, fish for marron in season, and in winter, white-water canoe on Deep River Bridge on South Western Highway (a two-day trip on a Class 2 river).

Best season: Winter for canoeing and all year round for camping, picnicking and photography.

Harewood Forest (J7)

This block of forest was regenerated following clearing for agriculture. The forest is an almost pure stand of karri. A carpark is located at Scotsdale Road, from where a walktrail follows an alignment along Scotsdale Creek. A log bridge has been constructed to provide access to the walktrack. Trailside panels, including old photographs, provide an historic profile of land use in the area. Rest stops and picnic tables are provided.

Where is it?: 9km north-west of Denmark along Scotsdale Road.

Best season: Late summer and autumn when the karri trees shed their bark, revealing beautiful shades of orange and grey, and winter.

WILLIAM BAY NATIONAL PARK (J8)

William Bay National Park is relatively small at 1867 ha, but contains a great diversity of natural features from coastal dunes and heathlands to mature karri forest. The sheltered swimming beach at Green's Pool is particularly popular. Granite boulders and rocky shelves form much of the coastline between Green's Pool and Madfish Bay, extending about 100m out to sea and creating a reef that protects the beach.

Inland at Tower Hill, unusual granite boulders and a patch of 60m tall karri forest create a striking contrast.

Where is it?: 15km west of Denmark, via South Coast Highway and William Bay Road.

Travelling time: 15 mins by car from Denmark.

What to do: Sightsee, photography, swim, marine study, nature study.

Facilities: Toilets at Green's Pool.

Best season: Summer, autumn.

MANJIMUP DISTRICT

CHINDALUP POOL (F3)

Chindalup Pool is in the eastern part of the southern forest region. It is a natural pool on the Tone River surrounded by jarrah forest. It is at the eastern end of the Maxwell Walktrail, originating from the Tone River Department of Sport and Recreation Settlement (see the brochure *Bushwalks near Manjimup* for further information).

Where is it?: Travel east along Muirs Highway for 40km, turn right down Radburn Road, and just before the Tone Settlement, turn left onto Chindalup Road. Follow Chindalup Road for 5km to the river. You will see the site from the bridge.

Travelling time: 45 mins by car from Manjimup.

What to do: Canoe, bushwalk, swim, fish, picnic or barbecue.

Facilities: Barbecues, picnic tables, information walktrack.

Best season: August to December.

ONE TREE BRIDGE CONSERVATION PARK (C2)

Four Aces (C2)

The Four Aces is a good site to appreciate the immense size of karri trees. Two walktrails start at this site: the 700m Karri Glade loop walk, which passes through some of the tallest trees in the district; and the 2km One Tree Bridge loop track (see the CALM *Bushwalks near Manjimup* brochure for further details).



one of the leaf-shaped signs (above) points to the Ancient Empire (below)



Photos - Michael James

Where is it?: 23km west of Manjimup on Graphite Road.

Travelling time: 15-20 mins from Manjimup.

What to do: Bushwalk, picnic, birdwatching, photography.

Facilities: Toilets, shelter, picnic tables, walktrails, information.

Best season: All year, although the wildflowers are best in October.

Glenoran Pool and One Tree Bridge (C2)

These sites are situated side by side on the Donnelly River within One Tree Bridge Conservation Park, linked by walktrails to the Four Aces site. This area is a focus for leisure activities within the Donnelly Valley.

Where is it?: 22km west of Manjimup. Turn off South Western Highway in the town onto Graphite Road.

Travelling time: 15-20 mins by car from Manjimup.

What to do: Swim, bushwalk, barbecue or picnic, fish for trout or have a go at marroning in season, read the history of the area on the information panels provided.

Facilities: Toilets, shelter, barbecue, picnic tables, walktrails, information.

Best season: All year.

King Jarrah (D2)

Situated east of Manjimup, this site is of historic interest as well as being home to one of the biggest jarrah trees in the south-west. A 650m walktrail starts at the foot of this majestic tree. It is a good spot to enjoy the wildflowers in spring and the trail is accessible to wheelchairs and prams.

Where is it?: About 4km east of Manjimup on Perup Road.

Travelling time: 5 mins by car from Manjimup.

What to do: Bushwalk, picnic or barbecue, photography.

Facilities: Walktrail, barbecue, picnic tables, information.

Best season: All year.

Diamond Tree (D3)

Set in the karri forest south of Manjimup, Diamond Tree is the only fire lookout tree still in use in which the tower structure is perched on top of a massive karri tree. During the fire season this tower is used in conjunction with aircraft as part of CALM's fire surveillance system.

Where is it?: About 12km south of Manjimup. Follow South Western Highway and look out for the Diamond Tree signs.

Travelling time: 10 mins by car from Manjimup.

What to do: Climb the tree, bushwalk, picnic or barbecue, photography.

Facilities: Toilets, barbecues, picnic tables, information, shelter, walktrails, access for wheelchairs.

Best season: September to April.

Heartlea (F1)

Situated at the northern end of Perup Nature Reserve at what was once an old forestry settlement. This is a good site to learn more about WA's rare and endangered native animals.

Where is it?: About 43km north-east of Manjimup. Head east along Perup Road for 18km, turn left onto Corbalup Road for 22km, veer right onto Kingston Road for 3km until

you reach the bitumen on the Boyup Brook-Cranbrook Road. The site is 200m to the south.

Travelling time: 40 mins by car from Manjimup. Corbalup Road is gravelled for the entire length.

What to do: Picnic or barbecue.

Facilities: Toilet, shelter, picnic tables, barbecue, information.

Best season: Spring.

Perup Ecology Centre (F2)

The Ecology Centre is in the heart of the 50,000 ha Perup Nature Reserve. The reserve is home to six threatened species of native marsupials, including the numbat, tamar wallaby and the native cat, or chuditch. Access to the Ecology Centre is by arrangement only. The centre is mainly designed for group accommodation. Bookings and further information can be arranged through CALM's regional office on (08) 9771 7988.

Where is it?: About 55km from Manjimup. Head east along Perup Road for 18km, turn left on Corbalup Road for 22km, then veer right onto Kingston Road for 3km. This will bring you to the Boyup Brook-Cranbrook Road, which is bitumen. Turn right. After 12km a small access track takes off to the right. Look for the sign to Perup Ecology Centre.

Travelling time: About 1 hr by car from Manjimup.

What to do: Bushwalk, photography, spotlighting, picnic or barbecue, education.

Facilities: Accommodation, kitchen, toilets, barbecues, walktrails, information.

Best season: April to November.

