FITZGERALD RIVER

national park

Mountains, rivers, plants and animals

Because of its near-pristine state and high biological diversity, Fitzgerald River National Park is recognised by the Australian National Commission for UNESCO as one of two model biosphere reserves within Australia. Its reputation is well deserved.

BY ANGELA SANDERS

Looking south while driving between Jerramungup and Ravensthorpe along Highway 1 on the south coast of Western Australia, one sees a tantalising view of distant, blue-tinged mountains. This would have been similar to the view that Matthew Flinders saw, looking north as he sailed past in 1802. He named the mountains East, West and Mid Mount Barren, but if he had climbed any of these mountains he would surely have named them differently, as they contain some of the State's richest botanical diversity.

The mountains form only a part of the Fitzgerald River National Park, which now covers 329 589 hectares and stretches along the coast almost 70 kilometres from Bremer Bay in the west to Hopetoun in the east. The park reaches inland for about 40 kilometres and straddles the Gairdner, Fitzgerald, Suzetta, Hamersley, West and Phillips Rivers. It has a long and rich geological history and contains a variety of different landforms, including a chain of low coastal mountains, incised river valleys, a former marine plain where rivers have cut through soft spongolite rock, estuaries and a variety of wetlands. The northern section sits on the very southern edge of the great Yilgarn craton that underlies most of the Wheatbelt to the north. Here we find the oldest rocks in the park, known as the gneisses, migmatites and granites of Precambrian age, or more than 570 million years old.

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View from Point Ann across Point Charles Bay with Mid Mt Barren and Thumb Peak in the central wilderness zone beyond.
Photo – Eva Boogaard
Inset: Royal hakea or tallyongut (*Hakea victoria*).
Photo – Babs & Bert Wells/CALM

Below: Whalebone Beach towards the eastern end of the park.
Photo – Jiri Lochman

About 1 400 million years ago, the Stirling Fault developed roughly parallel to the present coastline. The southern section subsided and was covered by the sea, and the sediments that built up over time were eventually heated and compressed to form the rocks that were uplifted to form the Barren Ranges. The northern section stayed stable and now makes up the upland plain. The best view of the Stirling Fault can be seen at the information bay on Hamersley Drive, where the different vegetation of the two landforms is clearly visible.

It is thought that the Barren mountains were formed about 1 000 million years ago as a result of the collision of the Australian and Antarctic landmasses. These two landmasses, together with present-day South America, Africa and India, formed the supercontinent called Gondwana. About 53 million years ago much of the coast of the Fitzgerald was flooded by the sea, due to the rifting process as Antarctica and Australia parted company in the final act of the breakup of Gondwana. The sea level rose to 130 metres above its present level about 40 million years ago and covered all of the park up to the Stirling Fault. This left the tops of the

Barren Mountains as islands and the action of the sea formed wave-cut benches, which can be clearly seen on the southern-facing slope of East Mount Barren.

During this time of inundation, a marine plain was formed, and the climate was warm enough to support a proliferation of sponges. Clearly these sponges became very common, and now the near-indestructible remains of their skeletons, called spicules, form an important part of a rock called spongolite, which outcrops over much of the marine plain. One of the best places to see spongolite is at the Twertup Field Studies Centre, where it was once quarried for building material.

Geologically speaking, nothing much has happened in the last 40 million years, and this has given the plants plenty of time to evolve into the amazing variety of forms found today. A walk up West Mount Barren will take you to 372 metres above sea level and on a clear day you will be able to see the Stirling Range, which is 100 kilometres to the west. East Mount Barren is 311 metres high and wonderful views of Mid Mount Barren and Thumb Peak can be seen to the south-west, with the shining expanse of the Culham Inlet to the east.

Above left: The Qualup Bell (*Pimelia physodes*) can have up to 100 bells per plant. The bells are actually coloured bracts which enclose the true flower.
Photo – Babs & Bert Wells/CALM

Top right: Subtle colours are revealed in the spongolite cliffs near Twertup.
Photo – Bill Belson/Lochman Transparencies

Above right: The Fitzgerald River National Park and Lake Magenta Nature Reserve are linked by the Fitzgerald River corridor, a proposed nature reserve.
Photo – S. Leighton

VEGETATION AND FLORA

The Fitzgerald's long, complex geological history, its changing climate and the action of fire, have resulted in an exceptional botanical diversity, comprising some 1 883 taxa (classifications), or almost a quarter (23 per cent) of the described vascular plants in south-western Australia. Seventy-two of these are endemic and 250 species are geographically restricted or represented by populations of less than 1 000 plants.

One of the most famous Fitzgerald plants is the colourful royal hakea or tallyongut (*Hakea victoriae*) with its bright red, orange, or yellow and green prickly foliage. James Drummond, on his trip along the coast from Cape Riche to West Mount Barren in 1847, wrote that the plant was the 'most splendid vegetable production I have ever see'. The flower of this plant is inconspicuous, as it is found right down inside the brightly coloured leaves. Many keen gardeners have tried to grow the royal hakea but it does not show the brightly coloured leaves away from its natural habitat.

The Qualup bell (*Pimelea physodes*) has one of the largest flowers found in the park, and old bushes displaying up to 100 bells can be seen early in spring. The attractive pink and yellowish-green bells are actually formed by petal-like bracts which enclose many smaller flowers.

The weeping gum (*Eucalyptus sepulcralis*), which is arguably one of the most graceful of the eucalypts, is also found in the park. In fact, the park has 82 eucalypt species, making it the best-represented genus, closely followed by the genus *Acacia* with 80 species.

On a drive through the park the main vegetation type to be seen is low mallee eucalypts, with a heath understorey and a ground cover of a bewildering variety of sedges. The mallee species vary depending upon the soil type, but most are difficult to identify, because to the untrained eye

they all look very similar. One of the easiest to identify is the tallerack (*Eucalyptus tetragona*), which has blue-grey foliage that shines conspicuously in car headlights on a wet night. Tall yate woodlands occur less commonly, but are obvious to the visitor as they tower above the mallee, and can be found around wetlands and along rivers and creeks. Some areas of *Acacia* or *Melaleuca* shrubland and low heath can be found in coastal areas and in the northern section, but these are not a common feature of the park.

FAUNA

The Fitzgerald has more vertebrate animal species than any other conservation reserve in south-western Australia, and 17 of these are either threatened or in need of special protection.

The vast array of different habitats support 193 bird species. Migratory wading birds, ducks, birds of prey, pigeons, parrots, whistlers, wrens and honeyeaters can all be seen in close proximity. The rare western whipbird can often be heard calling like a squeaky swing in the mallee-heath areas, and the rare western bristlebird may also be heard uttering a call that sounds like someone rippling down the notes of a child's xylophone. The richest habitat for birds occurs where yate (*Eucalyptus occidentalis*) woodland fringes wetlands or river valleys and mallee-heath lies adjacent. Rare ground parrots are found in low heath vegetation, and although rarely seen, these bright green birds are flushed occasionally by a vehicle or walker.

Twenty-two species of native mammal occur in the Fitzgerald, making it a significant area for mammal conservation. The chuditch (*Dasyurus geoffroii*), quenda (*Isoodon obesulus*), dibbler (*Parantechinus apicalis*), red-tailed phascogale (*Phascogale calura*), tammar wallaby (*Macropus eugenii*), walyadji or western mouse (*Pseudomys occidentalis*) and the dayang or heath rat (*Pseudomys shortridgei*) are declared rare or likely to become extinct.

There have also been occasional sightings of the woylie (*Bettongia penicillata*) in the western part of the park; however, these have yet to be confirmed.

After recent extensive surveys of historical dibbler locations in Western Australia, it is now thought that the only significant mainland population is in the Fitzgerald River National Park. The only other locations where recent trapping has been successful are on two small islands off Jurien, north of Perth.

The dibbler is a small carnivorous marsupial and its most striking features are the white rings of fur around its eyes and its tapering, hairy tail. Researchers have given it the name of the 'enigmatic dibbler' as they have yet to uncover the secrets of its life, such as territory size, and food and habitat preferences.

Despite the large size and relatively pristine nature of the park, five species of mammal that used to live there are thought to be locally extinct. These are the kultarr (*Antechinomys laniger*), western barred bandicoot (*Perameles bougainville*), bilby (*Macrotis lagotis*), banded hare-wallaby (*Lagostrophus fasciatus*), and the pale field-rat (*Rattus tunneyi*). The broad-faced potoroo

Above right: The dayang or heath rat (*Pseudomys shortridgei*) is one of the Fitzgerald's threatened mammal species.

Right: Pincushion hakea (*Hakea laurina*) is a common but spectacular species found in the area.
Photos – Greg Harold

Southern right whale in Point Charles Bay with Mid Mt Barren in the wilderness zone beyond.
Photo – Eva Boogaard/Lochman Transparencies

(*Potorous platyops*) also would have lived in the park, but this animal is now considered to be extinct throughout all of its recorded range within Australia, which included the southern Wheatbelt and part of the south coast.

Western Shield, which aims to control feral predators and re-introduce native species, is currently being carried out in the park by the Department of Conservation and Land Management (CALM), and it is hoped that many of the threatened animal populations will be able to recover once fox numbers are kept to a low level.

Some of the most visible animals found in the area are the whales that visit the coast each year from June to the end of October. Southern right whale maternity sites occur along the park's coastline, and a total of 36 adults and calves were counted within a few hundred metres of the shoreline on one day in July 1993. One of the best whale-watching sites is at Point Ann, where a watching platform and picnic shelters have been recently constructed.

With 42 species, the park is not especially rich in reptiles when compared with warmer areas. It is thought that the fickle south coast summer weather may not be suitable for many reptiles to breed. Those that do survive include the western long-necked tortoise (*Chelodina oblonga*), which is at the eastern extremity of its range in the Fitzgerald River. A total of five gecko, five legless lizard, four dragon lizard, 17 skink, one goanna and nine snake species have been found so far, with the possibility of more to be discovered.

The frog species are also relatively low in number with 12 species recorded so far. Those that do live in the park, however, show a diverse array of life histories, with some requiring pools of water to lay their eggs, right through to turtle frogs (*Myobatrachus gouldii*), which lay their eggs in burrows up to a metre deep, and where the tadpoles develop into frogs inside the egg.

The park also has four species of inland fish, the spotted minnow (*Galaxias maculatus*), hardyhead (*Atherinosoma* species), Swan River goby (*Pseudogobius olorum*) and black bream (*Acanthopagrus butcheri*). These are all saltwater fish, as the presence of freshwater is too unreliable and scarce to support freshwater species.

THE FITZGERALD CONNECTED

Fortunately for the Fitzgerald, it is not totally isolated from other remnant vegetation, as corridors connect the park with many other bushland areas. A bush corridor of major importance in the north-east links the park with the large expanse of uncleared and ungrazed land between Ravensthorpe and the southern Goldfields, then stretches through to Central Australia.

The park is also linked via the Fitzgerald River corridor to Lake Magenta Nature Reserve, which is one of

THE FITZGERALD AS A BIOSPHERE RESERVE

In April 1978, the Fitzgerald River National Park was designated as one of 12 Australian Biosphere Reserves under UNESCO's Man and the Biosphere program. Originally the park was nominated because of its relatively pristine state and high biological diversity, especially its flora.

Currently there are 324 biosphere reserves in 82 countries, encompassing more than 211 500 000 hectares, which form a worldwide network. The purpose of this network is to assist in the conservation of the diversity of species and their habitats in a manner that is compatible with the needs of a growing world population.

Ideally, a biosphere reserve will include a large undisturbed core area that has an adjacent buffer zone where some human activity takes place, and lastly, an adjoining transition zone where most intense human activity takes place.

The Fitzgerald River National Park and adjacent bushland corridors, nature reserves and farmland fitted this model very well, and in the mid-1980s moves were made by the local community to recognise the buffer and transition zone. Since then there has been an increasing awareness of the biosphere reserve concept, and acceptance locally of a greater biosphere reserve.

In this concept, the Fitzgerald Biosphere Reserve now includes four local shires, that is, all of Jerramungup Shire, half of Ravensthorpe Shire, and small portions of Lake Grace Shire and Kent Shire. The total land area covered is approximately 1.3 million hectares.

Through the processes of community awareness programs, and community consultation on park management issues as well as hands-on involvement in biological survey and landcare projects, the Fitzgerald Biosphere Reserve has evolved to be recognised (along with Bookmark Biosphere Reserve in South Australia) by the Australian National Commission for UNESCO as one of two model biosphere reserves within Australia.

the largest patches of uncleared vegetation in the Wheatbelt, and is the site of a CALM fauna reconstruction program that is being made possible by the Department's Western Shield fox baiting program.

Coastal bushland corridors also run to the east and west, connecting the park with bushland along the coast to Albany and Esperance and beyond.

These corridors are thought to be extremely important and could represent significant 'evolutionary' corridors in the face of any climate change. The Fitzgerald has species in common with both the wetter south-west and the more arid east and north-eastern parts, and these bushland links may well prove to be important in allowing the contraction or expansion of species, depending upon whether the climate becomes more arid or wetter.

ABORIGINAL HISTORY

Very little information is readily available on the historical use by Aborigines of the area. Ethel Hassell provided the most useful source of information in her anecdotal account of her life at Jerramungup Station during the 1870s and 1880s.

Mrs Hassell wrote about some of the resources used by the Aboriginal people. They included possums, goanna eggs, black wattle gum and seeds, yate gum and white ant eggs. A body oil was made by pounding sandalwood seeds, and the seeds of a red gum were used medicinally for diarrhoea.

The use of fire by Aborigines was also documented and she wrote:

"As the natives burn large tracts of country every year to ensure the grass and herbage coming up green and sweet at the first rains, also to drive out the game for hunting purposes."

All of the few Aboriginal sites that are known in the park relate to the prehistoric past. The recorded sites include stone arrangements and surface scatters of stone artefacts.

EARLY EUROPEAN HISTORY

Aborigines living on the coast may have seen the first European ships sail past in 1626. It wasn't until about 1826, however, that William Baxter, the first of a long line of botanical collectors to visit the area, stepped ashore. He was followed in 1847 by James Drummond, who was the first to collect the royal hakea. Drummond was unable to press the plant because of its size and he wrote:

". . . tied up sixteen of the bract bearing tops in two bundles, tying them together with the creeping shoots of the black creeper Kennedia nigricans and slung them one each side of my old grey pony Cabbine. One specimen fourteen feet high, I carried in my hand all the way to Cape Riche."

Anyone who has brushed past the prickly foliage of the royal hakea would have to feel sorry for the poor pony!

The explorers James Newell, James Manning and Edward John Eyre also visited the area around the mid-1800s. During this time, John Septimus Roe came from Perth to look for good pastoral country and mineral resources. Some of the country was seen as good for sheep grazing, and numerous leases were set up during the period 1850–1890. There have also been many hopeful prospectors who have explored for minerals in the area that is now the national park, but none of the finds was developed to any great extent. In 1950, the Western Australian Naturalists' Club

Right: West Beach with the Whoogarup Range beyond.
Photo – Bill Belson/Lochman Transparencies

Below: Oak leafed dryandra (*Dryandra Quercifolia*).
Photo – Greg Harold

suggested that the area be given legal protection. This was supported by the then government botanist, C. A. Gardner, and in 1954 the 246 804 hectares were gazetted as a 'C' class Flora and Fauna Reserve.

VISITING THE FITZGERALD

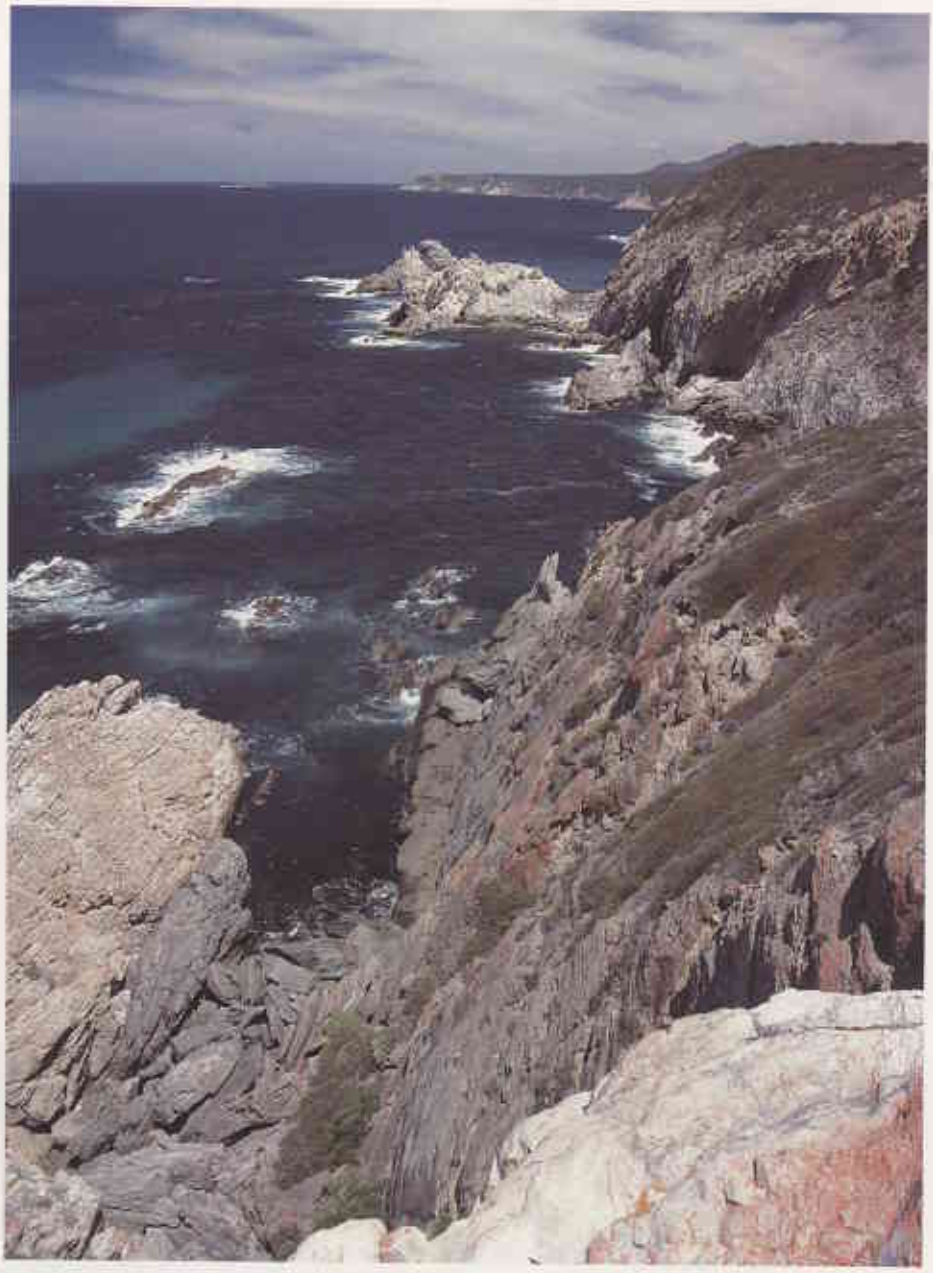
Any time is good to visit the park, but do be prepared for rain at any time of year. This means some of the tracks may be closed to avoid the spread of the fungi that causes dieback. This plant disease is caused by a variety of species of microscopic fungi that are lethal to hundreds of plant species in the park.

To prevent the spread of the fungi, the central wilderness core area is closed to vehicles, and the peaks Woolbernup Hill, Mid Mount Barren and Thumb Peak are closed to walkers from the 150-metre contour upwards. The Fitzgerald is one of the least infected parks in Western Australia and will remain so with the help of visitors who obey all 'Road Closed' signs, and who use the boot-cleaning stations where they are provided at the beginning of walks.

The best time to enjoy the Fitzgerald's famous wildflowers is in spring, and a walk into the bush will be rewarded by a spectacular variety of blooms. Many of the flowers are small and inconspicuous, and close inspection is highly recommended.

Visitors to the park are bound only by the time they have available to achieve what they wish to do during their stay. The first consideration is accommodation, and camping areas are provided both in the western and eastern end of the park.

Accessible by two-wheel-drive from the western end are the newly completed facilities at Point Ann, with some 14 individual campsites, day-use shelters, ablutions and free gas barbecues. A platform was constructed a few years ago with the help of Army personnel, and whale watching is a popular pastime from June until the end of October. Southern right whale cows with calves, and humpback whales, can be seen cavorting before the spectacular backdrop of Thumb Peak on most days during the whale season. Fishing, walking the Point Ann Heritage Trail, beachcombing and swimming are also popular. Depending on weather conditions, the Fitzgerald Inlet bush camping site further east can be accessed by four-wheel-drive.



Looking west from near Quoin Head along the central wilderness coastline. Red Islet and Thumb Peak are visible in the distance.
Photo – Greg Harold

At the eastern end of the park, the main camping area that can be accessed by two-wheel-drive is at Four Mile Beach. This is a convenient place to camp when visiting East Mount Barren, Barrens Beach, Mylies Beach and West Beach.

Quoin Head can be reached by four-wheel-drive, and is a wonderful place to experience some of the most rugged coast the Fitzgerald has to offer. Ospreys are seen here regularly, often sparring in the air with kestrels and Australian hobbies. Facilities here are basic, with marked camping bays, gas barbecues and toilets.

Before visiting the park, it is advisable to contact the rangers to find out about local weather conditions and road closures.

Enjoy your visit to this jewel of the south coast.

Angela Sanders is a CALM ecologist who has been working in the Fitzgerald Biosphere Reserve since 1993. She can be contacted at Ravensthorpe on (08) 9838 1166.

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The threat from below . . . How can we defeat our greatest environmental enemy? Read about salinity and what we can do about it on p. 10.

One of the best aids to plant conservation is completely invisible. See our plant DNA story on p. 18.

LANDSCOPE

VOLUME THIRTEEN NUMBER 1, SPRING 1997

Dryandra, one of the last refuges of the native wildlife. Now you can experience this woodland wonderland for yourself. Find out how on p. 36.

Europeans brought alien plants and animals to WA's rangelands, which have since become degraded. What can be done? See p. 42.

How old is the Stirling Range? Read about this stunning area in our story on p. 48.

FEATURES

REGULARS

COVER

The Fitzgerald River National Park boasts a startling array of habitats, mammals, birds and other species. Its wildflowers in spring are often spectacular. Our story on p. 28 is a fascinating tale of variety, beauty, and threat in this aged land.

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