Discovering

Nambung National Park

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

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DISCOVERING NAMBUNG NATIONAL PARK

by Carolyn Thomson, Keith Hockey and David Rose

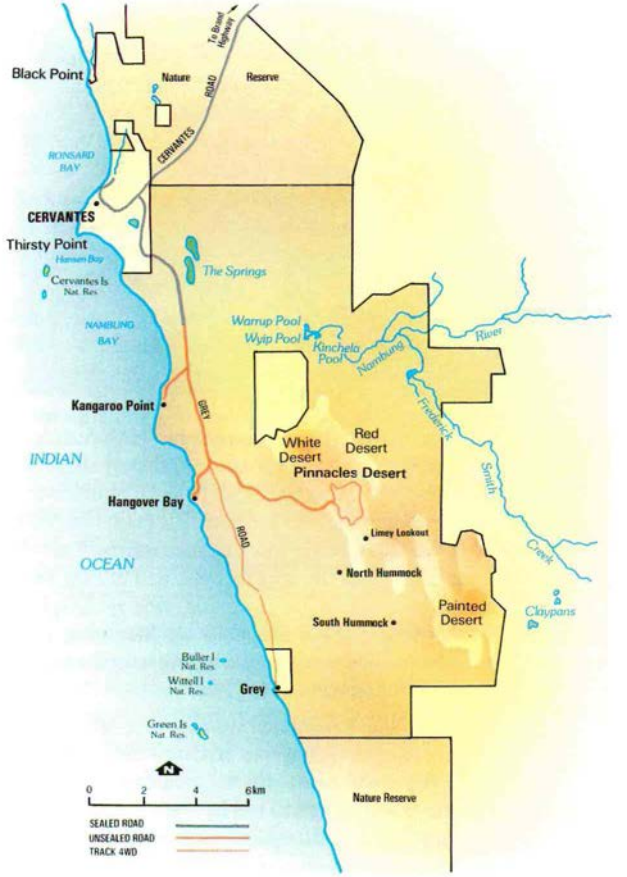
DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

INTRODUCTION

Nambung National Park features beautiful beaches, coastal dune systems, shady groves of tuart trees and low heathland rich in wildflowers. The vegetation bursts into bloom from August to October, creating a memorable spectacle for visitors. In the midst of this diversity is a fascinating area - the Pinnacles Desert, one of Australia's best known landscapes. Here, thousands of huge limestone pillars rise from the shifting yellow sands, resembling a scene from a science fiction movie. Offshore is a stunning reef, part of the longest temperate barrier reef system in Australia.

The park is a comfortable day trip from Perth. This book is your guide to some of the plants and animals commonly seen in the park. A nature drive is included to help you explore and understand the park's ecosystem and special values.

Photo - Babs & Bert Wells/CALM


To Brand Highway
Black Point
Nature Reserve
CERVANTES ROAD
RONSARD BAY
CERVANTES
Thirsty Point
Hansen Bay
Cervantes Is Nat. Res.
NAMBUNG BAY
The Springs
Warrup Pool
Wyip Pool
Kinchela Pool
Nambung River
Kangaroo Point
GREY ROAD
White Desert
Red Desert
Pinnacles Desert
Frederick
Smith Creek
INDIAN
OCEAN
Hangover Bay
Limey Lookout
North Hummock
South Hummock
Painted Desert
Claypans
Buller I Nat. Res.
Witteli Nat. Res.
Grey
Green Is Nat. Res.
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0 2 4 6km
Nature Reserve
SEALED ROAD
UNSEALED ROAD
TRACK 4WD

HISTORY

The south-west of Western Australia was occupied by a number of tribal groups collectively known as Nyoongars, and the Nambung area was frequented by the Whadjug and Yued tribes. It was common for people further inland to visit the coastal sandplain for a time each summer. In particular, the lakes and swamps which occur in lines through the interdunal valleys of the limestone belt attracted Aboriginal people because of their abundant freshwater tortoises, fish, waterbirds and shellfish. Aboriginal artifacts at least 6000 years old have been found in the Pinnacles Desert.

The first known European recording of the Nambung area dates back to 1658, when the North and South Hummocks first appeared on Dutch maps. The Hummocks were also mentioned in navigator Philip Parker King's journal in about 1820.

In 1839, George Grey (later Governor of South Australia) was shipwrecked in Gantheaume Bay (near Kalbarri) about 480 kilometres north of Perth. On his walk back to Perth he discovered a watercourse in the Nambung area and named it Frederick Smith River, after a member of his group who perished nearby. Explorer A C Gregory passed through the area in 1848, and during 1874-75 the region was surveyed by J S Brooking, who renamed the Frederick Smith River the Nambung River. Nambung is an Aboriginal word that means crooked or winding, and it was from this river that the park was named.

From 1889 the Old North Road Stock Route ran between Dongara and Perth, passing through an area now included in the park. Until 1894 the stock route offered a safe path to travel between districts, with watering holes along the way. The Nambung area gained further attention in the early 1900s when phosphate was discovered in the caves of the Nambung River valley. Local farmers mined the phosphate on an intermittent

In the early 1960s, Nambung was still isolated and off the beaten track

basis from 1906. Evidence of the mining still exists. A temporary reserve was placed over the Nambung River valley, to protect the caves, in 1927. However, the pinnacles may not have been discovered by Europeans until 1934, when they were first mentioned in a Geological Survey report.

During World War II the stock route was a major movement corridor for the army. After the war, sections of the stock route were still in use by beekeepers, hunters, fishermen and holiday makers, until a network of better roads to farms and coastal towns gradually superseded it.

The Pinnacles Desert remained relatively unknown until the late 1960s, when the Department of Lands and Surveys agreed to add the area to the already existing national park, which had been established in 1956. Today the park is visited by approximately 150,000 visitors, from all over the world, each year.

FORMATION OF THE PINNACLES

In the Pinnacles Desert, right in the heart of Nambung National Park, thousands of huge limestone pillars rise out of a stark landscape of yellow sand. In places, they reach up to three and a half metres tall. Some are jagged, sharp-edged columns, rising to a point; while others resemble tombstones. What exactly are the pinnacles? What natural processes have created these odd and spectacular structures?

The raw material for the limestone of the pinnacles came from sea shells during an earlier epoch rich in marine life. These shells were broken down into lime-rich sands which were brought ashore by waves and then carried inland by the wind to form high, mobile dunes. Three old systems of sand dunes run parallel to the WA coast, marking ancient shorelines.

The oldest of these, known as the Spearwood dune system, is characterised by yellow or brownish sands. In winter, rain, which is slightly acidic, dissolves small amounts of calcium carbonate as it percolates down through the sand. As the dune dries out during summer, this is precipitated as a cement around grains of sand in the lower levels of the dunes, binding them together and eventually producing a hard limestone rock, known as Tamala Limestone.

At the same time, vegetation that became established on the surface, aided this process. Plant roots stabilised the surface, and encouraged a more acidic layer of soil and humus (containing decayed plant and animal matter) to develop over the remaining quartz sand. The acidic soil accelerated the leaching process, and a hard layer of calcrete formed over the softer limestone below. Cracks which formed in the calcrete layer were exploited by plant roots. When water seeped down along these channels, the softer limestone beneath was slowly leached away and the channels gradually filled with quartz sand. This subsurface erosion continued until only the most resilient columns remained. The Pinnacles,

Photo - Babs & Bert Wells/CALM

then, are the eroded remnants of the formerly thick bed of limestone. As bush fires denuded the higher areas, south-westerly winds carried away the loose quartz sands and left these limestone pillars standing up to three and a half metres high.

Other examples of pinnacles, though not as well developed, can be seen south of Nambung National Park, near Guilderton, near Lake Gnangara, near Bibra Lake and near Mandurah.

FEATURES IN THE PINNACLES: Features that provide clues to the origin of the Pinnacles can be seen by the astute observer. For example, many of the Pinnacles display cross-bedding structures, where the angle of deposition of the sand changes very abruptly. This indicates that the dunes from which the limestone bed was formed were originally laid down by the wind. It can be contrasted with sand deposited under water, which generally forms horizontal layers. However, sand moved by the wind is laid down in front of moving dunes, which may slope very steeply. The windward side of the dunes also slopes at a much lower angle than the side which

is sheltered from the wind. Thus the limestone rocks reflect the wind direction that prevailed thousands of years ago.

Another notable feature of some of the Pinnacles is their mushroom-like shape. These are remnants of the calcrete capping mentioned earlier. The mushroom shape has formed because the capping is harder than the limestone below it and therefore weathers at a slower rate. This layer of very hard limestone has formed at the interface between the soil and the dunes, where the calcium carbonate sand grains were subject to heavier chemical weathering than those beneath.

Fossilised plant roots resembling petrified twigs, a few centimetres high and as thin as a pencil, can also be seen in many places throughout the Pinnacles Desert. These were formed as plant roots provided an avenue for water moving downward. As the roots are also quite acidic, this encouraged the water to dissolve the sand and reprecipitate calcium carbonate around the roots, hardening the area immediately around them. These fossilised roots are known as rhizoliths and are exposed when the wind erodes the softer sand around them.

Other egg-shaped structures in the limestone were formed in a similar manner to the fossilised roots, and are actually the fossilised pupal cases of a species of weevil. The beetle-like larvae burrowed into the sand and then secreted a case around its body in readiness for metamorphosis. Once again, the higher acidity of these structures encouraged water to dissolve and secrete calcium carbonate around the cases. The egg-shaped formations are hollow inside and some even have holes in one end from which the adult weevil has emerged. They have since been exposed by erosion.

THE WINDS OF TIME: Although the formation of the Pinnacles would have taken many thousands of years, they were probably only exposed in quite recent times. Aboriginal artifacts at least 6000 years old have been found in the Pinnacles Desert, despite no recent evidence of Aboriginal occupation. This tends to suggest

Photo - Marie Lochman

Aerial view of the Pinnacles Desert

that the Pinnacles were exposed about 6000 years ago and then covered up by shifting sands, before being exposed again in the last few hundred years. This process can be seen in action today - with the predominantly southerly winds uncovering pinnacles in the northern part of the Pinnacles Desert but covering those in the south. Over time, the limestone spires will no doubt be covered again by other sand drifts and the cycle repeated, creating weird and wonderful shapes over and over again.

NAMBUNG NATURE DRIVE

This nature drive starts at the entry to Nambung National Park. **Reset your trip meter at the park entry sign.** Follow the guide distances carefully and again reset your trip meter when requested. Distances in brackets and italics are for the return journey. The road is heavily used by tourist coaches and other visitors, so take great care when pulling to the side of the road.

VIEW POINT 1 - 0.1 km inside the park entrance *(7.3 km from the Kangaroo Point turn-off).*

The island in the centre of the road is a good place to view many of the plants that are typical of the park's coastal flora. Most of these species grow all the way to the Pinnacles. During August and September panjang (*Acacia lasiocarpa*) is in flower. This wattle is relatively low growing, grows in rounded domes and has intensely golden flower heads. You should be able to discern native rosemary (*Olearia axillaris*), used by early settlers as a herb, by its erect stems and silvery leaves. Squeeze a leaf and then smell your fingers.

The plant with round leaves, which are dark green above and greenish-white below, is basket bush (*Spyridium globulosum*). Old man's beard (*Clematis microphylla*) can be seen climbing over other plants and clinging to them with their modified leaf stems. Plants are either male or female. Each flower has four prominent, pure-white petal-like sepals and male flowers have numerous stamens. Yellow tailflower (*Anthocercis littorea*), chenille honeymyrtle (*Melaleuca huegelii*) and cottonheads (*Conostylis* species) with yellow flowers can also be seen.

VIEW POINT 2 - 0.4 km from the park entrance *(7.0 km from the Kangaroo Point turn-off).*

See if you can pick out a species of native hibiscus on the eastern side of the road, where it is taller than the other species.

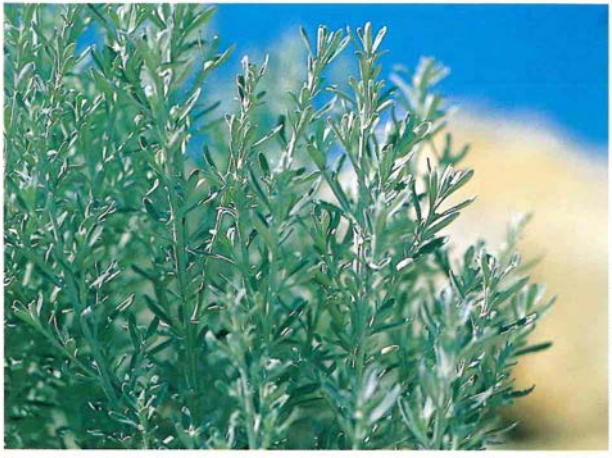


Photo - Stephanie Crawford

Above: *Native rosemary*

Below: *Chenille honey-myrtle*

Photo - Tony Tapper

It produces a purple flower sporadically for most of the year.

VIEW POINT 3 - 1.3 km from the park entrance *(6.1 km from the Kangaroo Point turn-off).*

Lake Thetis and its thrombolites lie on the other side of the large dune to the west. This permanent saline lake is outside the park boundary but is proposed for inclusion into the park in the future. You are welcome to walk to the low dune to gain views of Lake Thetis. If you wish to gain a better view of the thrombolites, mounds built by tiny organisms too small for the human eye to see, the main access is from Hansen Bay Road, which runs off the main road into Cervantes (100 metres from the 60 kph speed limit signs). The thrombolites that grow along the lake's edge have been dated at about 3500 years of age and, like the famous stromatolites of Shark Bay, are very closely related to the first forms of life on Earth. In August and September this area has stunning vistas featuring the gold flowers of panjang across the low heath.

VIEW POINT 4 - 1.4 km from the park entrance *(6.0 km from the Kangaroo Point turn-off).*

Native wisteria (*Hardenbergia comptoniana*) grows along the western side of the road. In late winter and spring, this spectacular creeper produces masses of bluish-purple pea flowers, arranged in sprays up to 20 centimetres long. A mauve daisy (*Olearia rudis*) grows nearby and coastal pigface (*Carpobrotus virescens*) can also be seen.

VIEW POINT 5 - 2.1 km from the park entrance *(5.3 km from the Kangaroo Point turn-off)*

You should be able to spot the red flowers of cockies' tongues (*Templetonia retusa*) in winter and early spring. The flower of this species has a long wing and a distinctive long, narrow standard which is bent abruptly back, giving it the appearance of a cockatoo's head. A common species of coastal limestone areas from Kalbarri to the Nullarbor, cockies' tongues is pollinated by birds. Also look for the pale pink flowers of coastal banjine *(Pimelea ferruginea).*

Photo - Tony Tapper

Above: *Native wisteria*

Below: *Pigface*

Kangaroo ticks, small blood-sucking insects which can attach themselves to people, are plentiful in the bushland of the Mid-West, including Nambung. Keep a look out for these minute animals and remove them as soon as possible to prevent them from attaching themselves to you, as their bites can cause severe irritation.

VIEW POINT 6 - 3.0 km from the park entrance *(4.4 km from the Kangaroo Point turn-off).*

On the western side of the road you should be able to see quandong (*Santalum acuminatum*) in fruit. This shrub or small tree has attractive, round fruits that turn bright red when ripe and, although a little tart, make a tasty snack. The fruits are two to four centimetres wide and contain a single seed. The plant can also be recognised by its leathery, yellowish-green and slightly sickle-shaped leaves. Quandong is a close relative of sandalwood and it too parasitises other plants through its roots. Emus (see pages 42-43) are common inhabitants of Nambung, and quandong fruit is a favourite food. It is believed that the fruits must first pass through the gut of an emu or another animal before it can germinate.

VIEW POINT 7 - 3.1 km from the park entrance *(4.3 km from the Kangaroo Point turn-off).*

Dune sheoak (*Allocasuarina lehmannii*) is very common in this area, growing along both sides of the road. A casual glance shows that these small trees have long, greenish needles. However, more detailed examination reveals that these needles are jointed and each joint is encircled by a whorl of minute, almost invisible, scale-like leaves. Also common here is the thick-leaved fanflower (*Scaevola crassifolia*), which has pale blue flowers said to resemble the shape of an open hand (see pages 60-61).

VIEW POINT 8 - Bradleys Springs, 3.6 km from the park entrance *(3.7 km from the Kangaroo Point turn-off).*

Photo - Tony Tapper

Above: *Cockies tongues*

Below: *Quandong*

Photo - Babs & Bert Wells/CALM

On the eastern side of the road is an area previously used for farming. However, the native vegetation was allowed to grow back after its purchase and inclusion into the national park. The line of high trees is composed of summer-scented wattle (*Acacia rostellifera*), and the old fences still stand amongst these thickets. The wetland just behind the thickets is Bradleys Springs. The highest tree you can see on the horizon is a tuart tree (*Eucalyptus gomphocephala*). This stately tree grows only in coastal areas between Jurien Bay and Busselton (see pages 56-57).

VIEW POINT 9 - 4.0 km from the park entrance *(3.4 km from the Kangaroo Point turn-off).*

You can see two species of wattle growing along the western side of the road. The tallest trees are summer-scented wattle. Red-eyed wattle (*Acacia cyclops*) also grows here and can be recognised by its unusual seed pods. The shiny, black seeds are circled by orange to scarlet seed stalks, giving them the appearance of a bloodshot eye. The scientific name refers to the Cyclops, the mythical one-eyed giants of Greek legend. The striking seeds are displayed in the open pods. The pods remain on the plant for a long time after the seed has dispersed.

VIEW POINT 10 - 4.8 km from the park entrance *(2.6 km from the Kangaroo Point turn-off)*

If you are travelling south, the vegetation changes dramatically at this point. A sign on the western side of the road explains why. The area was burnt by a wildfire on January 10, 1992 and is still very low compared with other areas. More than 14,000 hectares of the 18,318 hectare park was burnt and a number of facilities were destroyed. Fortunately, much of the native vegetation has adapted to withstand fire. Although fire initially kills some species, and causes changes to vegetation composition and diversity, the flora is quick to recover through a process known as a plant succession. Short-lived annuals predominate in the first spring after a fire. For the next few years, the thick-

Photo - Michael Morcombe

Red-eyed wattle

leaved fanflower and panjang dominate the low heath. All the while, the acacia seedlings and suckering regrowth of chenille honeymyrtle are developing at a slower pace. The honeymyrtle will eventually dominate, as the wattles die of old age and the vegetation structure reaches maturity.

Behind are the mobile sand dunes which are found in many places along the coast of Nambung National Park. They are natural features of the park. The ocean is just on the other side of them. In places, saltbush (*Atriplex isatidea*) and other plants can be seen growing through the white sands.

VIEW POINT 11 - 5.3 to 6.7 km from the park entrance *(0.7 to 2.1 km from the Kangaroo Point turn-off).*

On the western side of the road is an island of vegetation that was not burnt in the 1992 wildfire. Its height can be compared with that of the vegetation on the eastern side, which was burnt.

Turn-off to Kangaroo Point - 7.4 km from the park entrance *(4 km from Hangover Bay turn-off).*

Reset your trip meter at this point. If you do not wish to turn off to Kangaroo Point, go straight on to View Point 13.

You can see the native hibiscus along the edge of the access road to Kangaroo Point. It is very upright and has very slender, dark green leaves. Cut-leaf wattle (*Acacia truncata*) can also be seen. This plant has unusual triangular "leaves" (like most wattles this species does not have true leaves but flattened leaf-stalks called phyllodes that perform most of the functions of leaves). Its blossoms are creamy-white. It can be seen growing with panjang, old man's beard, cockies' tongues and thick-leaved fanflowers. Birds such as swallows and ospreys (see pages 44-45) are often seen.

VIEW POINT 12 - 0.95 km from the Pinnacles Road/Kangaroo Point turn-off.

You can see the concrete slab from an old fishing shack removed in the late 1960s. Coastal spinifex (*Spinifex longifolius*)

Photo - Andrew Brown

Tuart

grows nearby. Picnic shelters, gas barbecues and toilets are provided at this attractive site near the beach. To the north-west you can see Cervantes at Thirsty Point. Out to sea are the Cervantes Islands. Note that the vegetation has been heavily pruned by the salty winds.

VIEW POINT 13 - Kangaroo Point turn-off. **Reset your trip meter** to 0.00 km *(4.0 km from Hangover Bay turn-off).*

Look for a greenish-brown to yellowish-orange coloured plant that clothes, and seemingly overwhelms trees such as wattles. Although dodder laurel (*Cassytha* species) germinates by itself in the soil it soon parasitises nearby plants, extracting nutrients by means of small suckers along its stems. This mistletoe produces fruits with a sticky, succulent outer part, attached to a seed. It has very small, scale-like leaves.

VIEW POINT 14 - 3.0 km from Kangaroo Point turn-off.

If you are travelling south, you can glimpse the edge of the famous Pinnacles Desert, the yellow sand to your left. The small peak on the far horizon is North Hummock, which was marked on Dutch charts in 1658 and was used by early mariners to navigate along the coast.

Turn-off to Hangover Bay - 4.0 km from the Kangaroo Point turn-off *(5.3 km from the Pinnacles Entry Station).*

Reset your trip meter at this point. If you do not wish to turn off to Hangover Bay, go straight ahead to View Point 16.

Immediately to your left is the turn-off to the settlement of squatter shacks at Grey. It is in an enclave of Crown land surrounded by national park. Although this road is accessible by conventional vehicle, a four-wheel-drive is recommended. If you wish to proceed to Grey please read the warning sign first. If you intend to proceed past Grey you are advised to first contact the Department of Conservation and Land Management (CALM) office in Cervantes for information about track or beach conditions.

Above: *Gould's monitor*

Below: *Carpet python*

Photos - Babs & Bert Wells/CALM

VIEW POINT 15 - 0.7 km along the Hangover Bay access road.

The vegetation along the access road is composed of summer-scented wattle, coastal banjine and other common coastal species. Bobtails (see pages 40-41) and other reptiles such as Gould's monitors and carpet pythons (which are completely harmless) may also be seen. Hangover Bay is a delightful spot with picnic tables, gas barbecues, and a boat ramp (four-wheel-drive access only). The stunning bay has a white sandy beach. It offers good snorkelling, swimming, windsurfing, surfing and beachcombing. Bottlenose dolphins are common and sea lions can also be occasionally seen.

Near the beach you may be able to identify sea spinach (*Tetragonia decumbens*), spinifex (*Spinifex hirsutus*) and coast sword sedge (*Lepidosperma gladiatum*). Recognised by its long, sword-like leaves, coast sword sedge was a useful plant for Aboriginal people. Part of the base of the stem can be eaten raw or roasted, and the plant could be used to make rope and string.

Reset your trip meter on your return to the Hangover Bay/Pinnacles turn-off. To ensure the safety of all park users, please observe the speed limit of 40 kph as the road is gravel all the way to the Pinnacles.

VIEW POINT 16 - 0.5 to 1.0 km from the Hangover Bay turn-off *(4.9 km from the Pinnacles Entry Station).*

This is a particularly good place to look for western grey kangaroos (see pages 32-33) grazing on the vegetation. The earlier in the morning it is, the more likely you are to see them. They are quite tame and may let you approach quite closely if you are quiet and keep your movements to a minimum.

The sweetly-scented false boronia (*Phyllanthus calycinus*) grows along this section of road and can be recognised by its very small, boronia-like, greenish-white flowers (see page 29).

VIEW POINT 17 - 3.1 km from the Hangover Bay turn-off.

Photo - Stephanie Crawford

Above: *Sea spinach*

Below: *Australian sea lion*

Photo - Carolyn Thomson

As you travel south-east, the vegetation changes markedly after you drive through the high dune on either side of the road. The vegetation here is dominated by sheoaks (*Allocasuarina* species) and you can see much exposed limestone. Panjang, coastal banjine, cut-leaf wattle, quandong, yellow tailflower, and old man's beard also grow in the area. See if you can find the stalked guinea flower (*Hibbertia racemosa*), which has flowers like a buttercup.

VIEW POINT 18 - 4.5 km from the Hangover Bay turn-off *(0.7 km from the Pinnacles Entry Station).*

Parrotbush (*Dryandra sessilis*) can be seen here and becomes more common as you get closer to the Pinnacles. This abundant and widespread plant is critical to the survival of many animals, providing nectar for numerous animal species such as honey possums and birds, while white-tailed black-cockatoos (see page 50-51) and ringneck parrots devour its seeds. This shrub or small tree is one of the most common and distinctive plants of south-western Australia, and may attain a height of five metres. It has a tendency to grow in dense, prickly thickets. The greyish-green leaves have prickly teeth and are usually fan-shaped. You also begin to see the exposed tops of some limestone pinnacles, only a few centimetres high.

VIEW POINT 19 - 4.6 km from the Hangover Bay turn-off *(0.6 km from the Pinnacles Entry Station).*

A few scattered Christmas trees (*Nuytsia floribunda*) begin to put in an appearance. These small trees or large shrubs have greyish-brown bark and dull green to bluish-green leaves. For most of the year they have a straggly, unkempt appearance, but around Christmas time their brilliant orange blooms put on a striking show. These trees or shrubs are semi-parasites and their roots have suckers which extract nutrients from the roots of neighbouring plants. The Christmas tree belongs to the mistletoe family and is the only member of this family which grows as a

Photo - Andrew Brown

Above: *Parrotbush*

Below: *Black-shouldered kite*

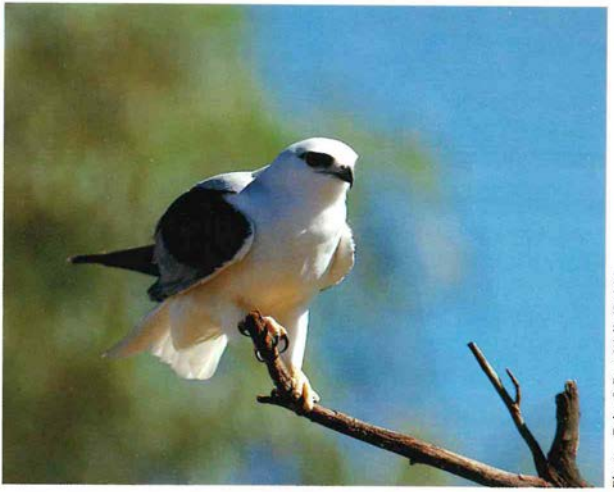


Photo - Babs & Bert Wells/CALM

tree (most mistletoes are aerial parasites which grow in the canopy). About 300 metres further on, scattered pinnacles begin to appear in the yellow, vegetated sands.

VIEW POINT 20 - 5.1 km from the Hangover Bay turn-off *(0.25 km from the Pinnacles Entry Station).*

See if you can see a New Holland (see pages 52-53) or white-cheeked honeyeater (see pages 54-55) on the sawtooth banksias (*Banksia prionotes*) growing on the western side of the road. You may also be lucky enough to see a bird of prey such as a black-shouldered kite, hovering above the ground in search of a meal. Small shrubby plants called coast beard heath (*Leucopogon parviflorus*) may be found. *Leucopogon* species are known as the bearded heaths (the scientific name literally means "white beard") because the lobes of the petals are usually clothed with white woolly hairs. The fruits of this plant are edible but, because of their small size, would provide no more than a snack.

VIEW POINT 21 - Park Entry Station, 5.3 km from Hangover Bay. **Reset your trip meter.** At the park entry station, please stop and pay your entry fee to the attendant or, if unattended, place your money in the box provided. The parking area and toilets are to the right. Continue straight ahead for the scenic drive through the Pinnacles.

VIEW POINT 22 - 0.5 km from the entry station.

You are now in the heart of the Pinnacles Desert, one of Australia's most intriguing landscapes. Parking bays are provided at various points along the one-way drive for those wishing to explore the area on foot. Please treat the pinnacles with respect and never climb on these fragile structures.

VIEW POINT 23 - 1.3 km from the entry station. **Reset your trip meter.**

You can take the turn-off to the left of the one-way loop if you wish. This track leads to the desert car park.

Photo - Tony Tapper

Christmas tree

VIEW POINT 24 - 0.5 km from the Pinnacle Loop turn-off, towards the Desert car park.

On the western side of the road you can see some pinnacles known as the "Milkbottles" because of their shape. The caps of the milkbottles are remnants of the calcrete capping mentioned in the Formation of the Pinnacles (see pages 6-9).

VIEW POINT 25 - 0.65 km. Desert car park/turn around.

If you have time, there is an option to go for a two or three hour walk to the coloured desert areas marked on your park brochure. You must carry at least one litre of water per person and wear sturdy footwear and a hat. A compass is also highly recommended and it is best to advise the ranger before you leave.

VIEW POINT 26 - Pinnacles One-Way Loop turn-off. **Please reset your trip meter.**

VIEW POINT 27 - 0.1 km from the desert turn-off (on the one-way loop).

The pinnacles here have very pronounced cross-bedding, where the angle of deposition of the sand changes very abruptly. This indicates that the dunes from which the limestone bed was formed were originally laid down by the wind. Sand moved by the wind is laid down in front of moving dunes, which may slope very steeply. The windward side of the dunes will also slope at a much lower angle than the side which is sheltered from the wind.

VIEW POINT 28 - 0.5 km from the desert turn-off (on the one-way loop).

The small hillock on the left is a good indication of where the former ground level would have been. It contains some of the original vegetation and you can see the soil horizon showing the humus layer and the bottom of the old dune.

VIEW POINT 29 - 0.8 km from the desert turn-off (on the one-way loop).

Above: *False boronia*

Below: *Coastal banjine*

Photos - Jiri Lochman

You can see a pinkish layer through some of the pinnacles on the left hand side. The tallest pinnacle recorded at Nambung - about 3.5 metres high - is immediately in front of you.

VIEW POINT 30 - 0.85 km from the desert turn-off.

On the left you will pass a thick clump of cut-leaf wattle.

VIEW POINT 31 - 1.25 km from the desert turn-off.

On the right, there are holes in the dunes used by swallows for nesting.

VIEW POINT 32 - 1.4 km from the desert turn-off.

Look to the west and enjoy sensational views with the pinnacles in the foreground and the white sand dunes and Indian Ocean in the background.

VIEW POINT 33 - 1.8 km from the desert turn-off.

There is a Christmas tree battling beneath a dodder laurel. They have been struggling for many years.

You return to the exit of the one-way loop at 2.0 km. At 2.2 km you can turn left if you wish to use the toilets and study the information panels about the park. At certain times of the year, particularly on still days, there are many honeybees around. These insects were introduced at the turn of the century and have turned feral in the Mid-West, where there is ideal habitat of nectar-producing plants, and protected caves in which to build hives and water. They are sometimes a problem at Nambung, where they may build their hives in toilets. They are also attracted to moisture leaking from air-conditioning units in cars. You should take care not to be stung.

That completes the Nambung Nature Drive. However, if you wish to look at some of the features in reverse order, return to the Pinnacles Entry Station and reset your trip meter. Then follow the trip meter readings in brackets and italics back from View Point 20 to guide you back to the park entrance.

Photo - Jiri Lochman

Cut-leaf wattle

WESTERN GREY KANGAROO

(Macropus fuliginosus)

Western grey kangaroos are great survivors. In fact, they are now probably found in greater numbers than before European settlement because of the provision of pasture and additional water points. They are seen very frequently in Nambung National Park and are often seen grazing in recently burnt areas.

DESCRIPTION: These large, fairly muscular animals are greyish-brown to reddish-brown in colour. Their muzzles have finer hairs than most other kangaroo species. The males can grow to more than two metres from head to tail. Females are smaller.

STATUS AND DISTRIBUTION: Western grey kangaroos are widespread and abundant across southern Australia.

PREFERRED HABITAT: These 'roos prefer open heathlands, near water and with nearby forest or woodland for shelter.

LIFE HISTORY: Western greys are mainly grass eaters. The males may fight for the attention of a fertile female. They breed throughout the year, although most young are born in summer. They usually produce one joey. Newborns resemble a jelly bean and take only a few minutes to climb to the pouch and attach themselves to a teat. They leave the pouch at around nine months but continue to suckle for a further nine months, often while another young is occupying the pouch. The mothers and their young use a series of clucking sounds to communicate.

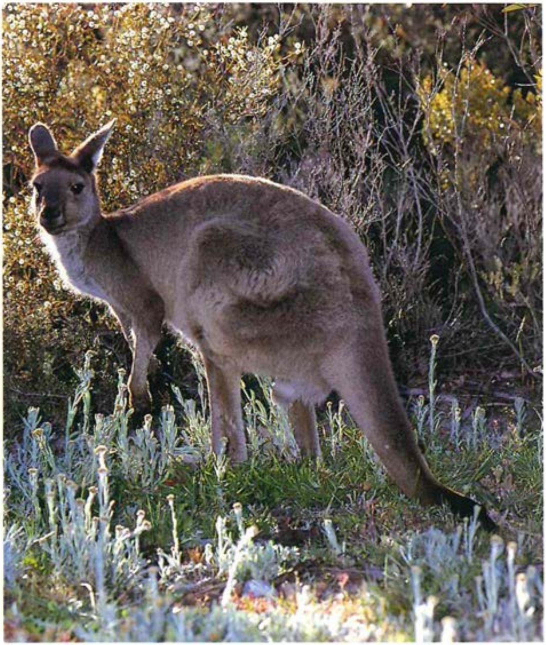


Photo - Babs & Bert Wells/CALM

WESTERN BRUSH WALLABY

(Macropus irma)

Brush wallabies are found only in the south-western corner of WA. They are recognised by their long, dark tails. Though the south-west jarrah forest is their prime habitat, brush wallabies are also found in areas of mallee and heathland, in early morning and late afternoon. They are quite speedy, hopping with head held low and tail extended.

DESCRIPTION: Brush wallabies have black hands and feet. The tips of the ears and the end of the tail are also black, and the tail has a crest of black hair. The body is grey and there is a distinct white facial stripe. The young have a faint horizontal stripe on the rump. Their grey colouring is quite different from the grey of other kangaroos, and once you become familiar with these mammals you will recognise them immediately from the colour. Males and females are similar, attaining a length of about 1.2 metres.

OTHER NAMES: Black-gloved wallaby.

STATUS AND DISTRIBUTION: Brush wallabies have been declining throughout the south-west over the last 25 years. However, in very recent times there appears to have been a resurgence in their numbers in some forest areas due to fox control. Agricultural clearing and urban expansion around Perth mean they are rarely seen on the coastal plain.

LIFE HISTORY: Brush wallabies eat grasses and herbs. They produce one joey in about April or May. Their decline over the last two or three decades is thought to be largely due to the European fox, which eats the juvenile animals.

Photo - Babs & Bert Wells/CALM

ECHIDNA

(Tachyglossus aculeatus)

The echidna is best known for its amazing biology. Like the platypus, this mammal lays eggs and suckles its young. The echidna and platypus are in a primitive group known as monotremes. When disturbed, the echidna either curls into a spiny ball to protect its soft underside, or digs its belly into the soil, so that only the spines are exposed.

DESCRIPTION: Long spines cover the body and fur is present between them. These slow-moving creatures have a bulbous forehead and a long snout to collect their food. Males have a spur on the ankle of the hind leg but, unlike that of the platypus, this is not venomous.

OTHER NAMES: Spiny anteater.

STATUS AND DISTRIBUTION: Echidnas are widely distributed throughout the Australian continent and Tasmania. Although they are not considered threatened, they are no longer frequently seen on the Australian mainland. However, they may be locally abundant in some areas.

PREFERRED HABITAT: These mammals may be found in any place with a plentiful supply of ants and termites.

LIFE HISTORY: Echidnas are usually solitary. However, when they mate between July and August, several males may congregate around a single female. About two weeks later, a single soft-shelled egg is deposited directly into the pouch. This hatches after 10 days and the young remains in the pouch, where it suckles milk exuded from the mother's mammary glands. Here it stays for about three months. Completely hairless when born, the youngsters are covered with short spines by the time they leave the pouch. These toothless animals expose termite galleries by digging into the soil or breaking open nests with their strong forepaws or snout. They then extract the termites with long, sticky tongues. Dingoes and goannas will

Photo - Babs & Bert Wells/CALM

occasionally eat echidnas. Their relative abundance on large, fox-free islands, such as Kangaroo Island in South Australia, suggests that the fox is also a significant predator of the species.

HOW TO SEE THEM: Secretive echidnas are rarely seen. However, extensive diggings at the base of termite mounds and along tracks are a sure sign of their presence. If you are bushwalking and notice large excavations under a log, try shining a torch inside it to see if the digger is still around. These mammals have distinctive cylindrical droppings in which ant remains are easily distinguished.

HONEY POSSUM

(Tarsipes rostratus)

This tiny marsupial is highly specialised for feeding on nectar and pollen. Its long snout and brush-tipped tongue are perfectly suited for probing flowers. Apart from some bats, the honey possum is the only mammal in the world that feeds exclusively on nectar and pollen. Although they are still common, the plants on which they rely for their food are threatened by the killer dieback disease.

DESCRIPTION: Honey possums are mouse-sized, with a combined head and body length of about 70 millimetres. They have a disproportionately long pointed snout, rounded ears and a very long tail. The brownish-grey fur on the back is usually striped, with a darker central band and paler bands on either side.

OTHER NAMES: Noolbenger, honey mouse.

STATUS AND DISTRIBUTION: Honey possums are found only in the south-west of WA but they are common within this area.

PREFERRED HABITAT: They live in heathlands which support a rich assemblage of plant species such as banksias, dryandras, grevilleas and bottlebrushes.

LIFE HISTORY: In hot weather, honey possums are mostly nocturnal. However, in the cooler weather they may be active in the morning and late afternoon. They nest among leaves, in blackboy stems or foliage and even in abandoned birds' nests. Breeding is closely tied to the flowering patterns of the nectar-producing plants upon which they rely. This amazing species has the smallest newborn of any mammal but the largest sperm. The testes are suspended in a large scrotum which represents a significent proportion of the animal's body weight. Two or three young are produced in each litter.

Photo - Babs & Bert Wells/CALM

BOBTAIL SKINK

(Tiliqua rugosa)

Bobtail skinks are very common in Nambung National Park, where they often bask on roads and rocky outcrops. If approached, a bobtail will often open its mouth wide and display its bluish-black tongue and hiss aggressively. This can be a frightening spectacle. Although they are unlikely to hurt people, they may bite if handled incorrectly.

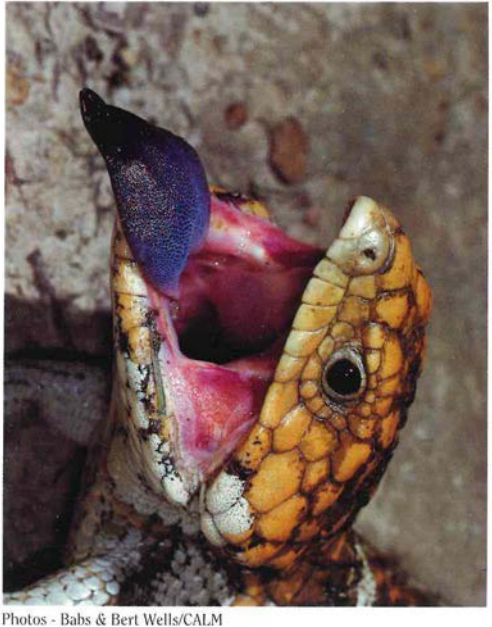
DESCRIPTION: These stout, slow-moving reptiles can reach up to 31 centimetres long. They have a large, triangular head, a flattened body, a short stumpy tail and large, rough scales on the back. Their colour is highly variable. The head and back is often orange-brown to brown with creamy spots, blotches or streaks. The belly is white, creamy or grey with blackish flecks, spots or blotches. They provide a moving home for ticks, which often live in their ears and under their scales.

OTHER NAMES: Blue-tongue lizard, shingle-back skink.

STATUS AND DISTRIBUTION: These reptiles are found as far north as Carnarvon. They are very common through southern WA and extend through the Nullarbor Plain to south-eastern Australia.

PREFERRED HABITAT: During hot weather bobtail skinks can be seen basking on footpaths, roads or rocks. Please drive slowly to avoid hitting these interesting and entertaining beasts.

LIFE HISTORY: Like many other reptiles, bobtails hibernate during winter and, if accidentally discovered under a pile of leaves or wood, should be left alone. In spring, they emerge ravenous from their hiding places and search widely for food and warmth. They eat fruit, flowers and eggs, and molluscs such as snails and slugs are also a favourite food. Bobtails give birth to one or two live young each year, which soon leave their mothers to forage alone.



Photos - Babs & Bert Wells/CALM

EMU

(Dromaius novaehollandiae)

The emu is Australia's largest native bird, and the second largest flightless bird in the world. The birds were once a favoured food of Aboriginal people, who would sometimes place poison plants in waterholes to drug their prey, or attract the birds by imitating their calls. In agricultural areas they are regarded as a pest, as they can damage fences and watering points and compete with stock for food and water. In 1932, WA farmers even declared an Emu War, calling in an Army detachment with two Lewis (machine) guns to exterminate them. They have been farmed for their valuable meat, skins and feathers for some years.

DESCRIPTION: This large bird grows up to two metres high. Its back is decorated with soft, brownish-grey feathers and it has long, powerful legs. Each large foot has three toes.

STATUS AND DISTRIBUTION: Emus are common and found throughout the Australian mainland. They are now absent from built-up areas, such as Perth and its suburbs.

PREFERRED HABITAT: They live in a wide range of habitats including deserts, dense coastal shrublands, eucalypt woodlands and forests.

LIFE HISTORY: Emus dine on native fruits, vegetation and ground-dwelling insects. Adult birds are usually found in pairs or small parties. They are highly nomadic and in the breeding season they move into areas of recent good rains. Breeding is usually from March to November, when a sparse nest of grass, bark and sticks is built on the ground. The father does all the parenting. He broods between five and 11 dark green eggs. The male also escorts the chicks, which have attractive black and yellow stripes. At about 18 months the large juveniles disperse.

CALL: The females make an unusual drumming sound, but both sexes make deep grunts.

Photos - Babs & Bert Wells/CALM

OSPREY

(Pandion haliaetus)

The huge nests of the osprey can be used generation after generation and often reach up to two metres high. These massive domes of sticks and driftwood are usually lined with seaweed. Early seafarers thought they must have been built by a bird the size of an Andean condor. Although it is often incorrectly referred to as a sea eagle, the osprey is in fact a hawk.

DESCRIPTION: Mature adults are between 500 and 630 millimetres long and have a wing span of one and a half metres. The creamy white head is sometimes flecked with brown markings and a dark brown stripe runs on either side of the alert bright yellow eye to the neck. The underparts and legs are also creamy white, while the upper parts and upper wings are mottled light brown, dark brown and black. The bill is black and hooked.

OTHER NAMES: Fish hawk.

STATUS AND DISTRIBUTION: Ospreys are found around most of the Australian coast. In northern Australia, ospreys are quite common and they are moderately common in the south-west, but the species has declined in South Australia and no longer breeds in Tasmania, Victoria and New South Wales. This decline may be due to pollutants causing breeding failures and deaths, and less habitat because of removal of large nest trees.

PREFERRED HABITAT: The birds frequent offshore islands and coastal areas, and in the Kimberley also move inland up rivers and on lakes. They are often seen on Lake Argyle and their nests can be seen in drowned trees at Kununurra and Lake Argyle, and along the Fitzroy River.

LIFE HISTORY: Fish are the staple diet of the osprey. In the north they breed between July and September, laying between two and four eggs. Aerial displays during courtship are quite spectacular. The male hunts while the female incubates, broods

Photo - Babs & Bert Wells/CALM

and feeds the voracious chicks. The youngsters leave the nest about eight weeks after hatching.

CALL: Ospreys typically produce a short, quavering whistle.

NANKEEN KESTREL

(Falco cenchroides)

The nankeen kestrel is usually seen over grassy areas, where it sits quietly on power poles or on the very tips of tall trees, looking around in search of insects, lizards and small rodents. It often gracefully hovers head to wind, with head downturned, looking for prey. When it spies a likely meal, the bird drops like a stone to impale its prey on razor sharp talons, then alights on a pole or fence post to dismember the food.

DESCRIPTION: These handsome, but relatively small, birds of prey are about 32 centimetres long. They have a bright rufous brown back and creamy white underparts, with thin black streaks on the breast. The tail has a black bar near the tip and is grey in the male and barred in the female. The legs are yellow, and there is a black patch below the eye.

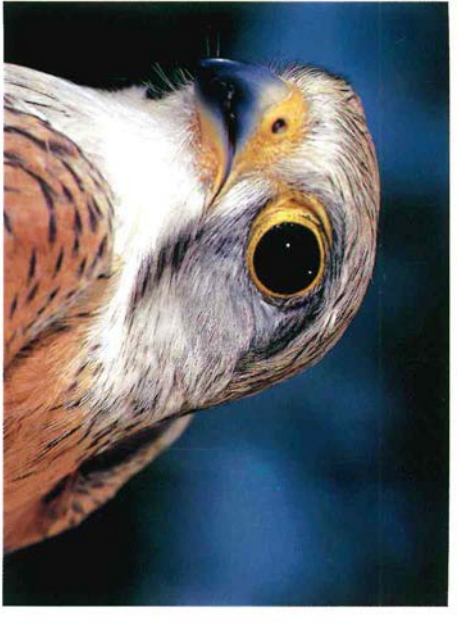
OTHER NAMES: Australian kestrel.

STATUS AND DISTRIBUTION: The species is common and found throughout Australia.

PREFERRED HABITAT: This bird is most common in open woodland and agricultural land, where it can easily see prey on the ground.

LIFE HISTORY: Kestrels are a common sight over open grassy country and low vegetation. Along the coast, many pairs nest in niches in limestone cliffs, either on the mainland or on offshore islands. Inland, the birds lay their eggs in tree hollows, on buildings or on cliff faces. Like all falcons, they never build their own nest but may reuse old nests of other birds. The four or five eggs are whitish, with blotches of reddish-brown, and are incubated by the female.

CALL: A high-pitched, repeated "ki" or harsh twitter.



Photos - Babs & Bert Wells/CALM

GALAH

(Cacatua roseicapilla)

Galahs have increased in abundance as a result of agriculture. These noisy birds twist and turn as they fly overhead, to show alternately grey and then pink, and give high screeching calls. Galahs, which collect seeds from the ground, may be long-lived. They may gather in flocks where food is abundant and are common in Nambung National Park.

DESCRIPTION: Most people are familiar with galahs, which are popular pets. They are about 35 centimetres long. The head, neck and breast are pink, with a paler pink "cap" on the head, while the back, wings and tail are light grey. The male has brown eyes and the female pink eyes. The legs, feet and beak are grey.

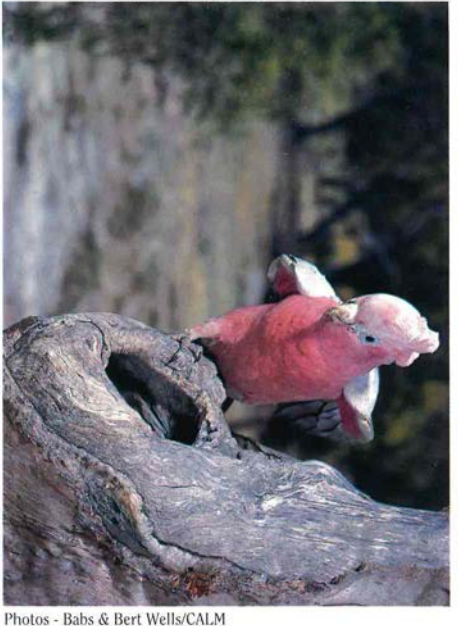
OTHER NAMES: Pink and grey cockatoo.

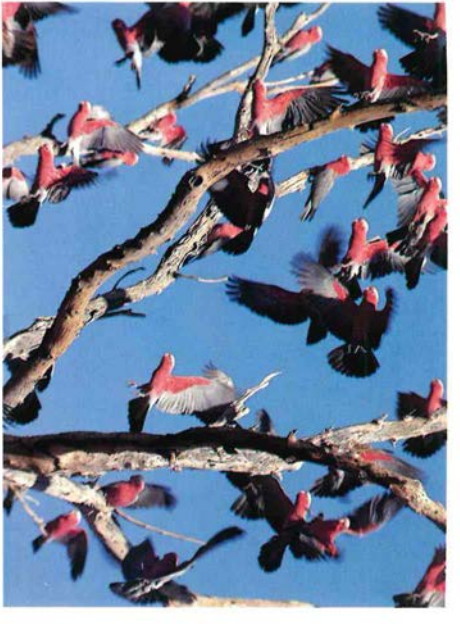
STATUS AND DISTRIBUTION: Galahs are common and may be seen in flocks of up to 1000 birds throughout most of Australia.

PREFERRED HABITAT: These colourful birds are usually seen in savannah woodlands and open grasslands.

LIFE HISTORY: Galahs pair off in the breeding season and usually form permanent bonds with their partner. They nest in tree hollows lined with eucalypt leaves, to which they return year after year. Courting males often raise their crests and wave from side to side, while chattering softly. Galahs are already superb fliers when they leave the nest. New fledglings may gather together in creches of up to 100 while their parents forage for food. After six to eight weeks they must fend for themselves.

CALL: The call is a harsh screeching. When feeding they often give high pitched, tinkling calls.





Photos - Babs & Bert Wells/CALM

WHITE-TAILED BLACK-COCKATOO

(Calyptorhynchus latirostris)

White-tailed black-cockatoos are frequently seen flying over Nambung National Park. Making harsh wailing cries, large flocks often wheel through the sky in search of feeding areas. They feed on marri, banksias and other hard-fruited trees and shrubs. They also strip bark off trees to feed on grubs, but this does not harm the tree.

DESCRIPTION: These large birds have long tails with a broad white band. The dusky black feathers have an off-white edge, creating a pattern of thin crescents. The bill is short and rounded, and there is a white cheek patch.

OTHER NAMES: Short-billed or Carnaby's black-cockatoo.

STATUS AND DISTRIBUTION: They inhabit the south-west of WA, including the Wheatbelt, and east to Albany and Hopetoun. They are declining in number, however, because of a shortage of nesting hollows.

PREFERRED HABITAT: Woodlands, forests and mallee areas. They breed in areas such as Lesueur National Park, north of Nambung, where there are wandoo trees with good nesting hollows close to water with an adequate food supply in the adjacent heaths to sustain a breeding population.

LIFE HISTORY: These seed-eating birds are expert at biting and tearing open thick, woody seed capsules and cones. They pair for life and nest mainly in tree hollows in wandoo woodland of the northern Darling Range or Wheatbelt. Two eggs are laid and, although both usually hatch, the second nestling usually dies within 48 hours. The chick fledges at around 10 or 11 weeks of age, but remains dependent until the next breeding season begins. After the chick fledges, the family group joins other cockatoos and moves to coastal areas in search of food.

CALL: The flight call is a high-pitched "whee-la".

Photo - Babs & Bert Wells/CALM

NEW HOLLAND HONEYEATER

(Phylidonyris novaehollandiae)

New Holland honeyeaters feed largely on nectar, especially on the flowers of banksias and other heathland species of Nambung National Park. They visit more than 100 plant species and help to transfer pollen from plant to plant. When flowering plants are scarce, they feed on a variety of insects and spiders.

DESCRIPTION: New Holland honeyeaters are streaked with black, yellow and white. The black face has white hairy tufts at the edge of the beak. There is a beard-like black throat with long, white, hairy feathers, a white eyebrow set well back, and a white ear tuft. The head, wings and tail are largely black, although the tail feathers have a broad yellow edge. The back is lighter, with white streaks, and the breast and undertail are white, streaked black. It is the only honeyeater with a white eye in the adults.

STATUS AND DISTRIBUTION: This bird is common in the south-western corner and along most of WA's southern coast.

PREFERRED HABITAT: Heath and woodlands are the primary habitat of this species.

LIFE HISTORY: New Holland honeyeaters nest mostly between July and December and sometimes throughout the year. One to three eggs are laid in a cup-shaped nest, usually in a shrub or low tree. Each pair has its own breeding area, which may be very small in areas of prime habitat, and which is vigorously defended. However, they may feed in communal groups. If food is scarce, dominant birds will expand their territories and force other residents out.

CALL: These birds communicate in flight and when feeding with a "tjitt". Territorial singing is a single, high, whistled note.

Photo - Babs & Bert Wells/CALM

WHITE-CHEEKED HONEYEATER

(Phylidonyris nigra)

These animated and noisy birds may gather into groups to forage. Wandering bands will raid areas with abundant flowering banksias, dryandras, grevilleas and other nectar-rich plants. Breeding pairs are more sedentary and the males warble musically and fly in a set pattern to stake their claim to a nesting territory.

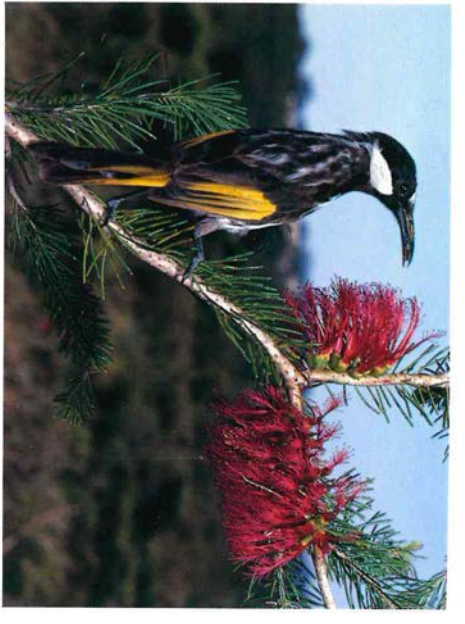
DESCRIPTION: These birds are very similar to the New Holland honeyeater, except for the large, white cheek patch and brown eye. The head, back, wings and tail are black, with some white striping. The flight and tail feathers are edged with bright yellow. The black face has a long white brow, a large white patch on the cheeks and a long, black curved beak. The breast and undersides are predominantly white, streaked with black.

STATUS AND DISTRIBUTION: White-cheeked honeyeaters are found throughout the south-west of WA, where they are abundant in some areas but uncommon in others. They are common along most of Australia's eastern coast. In WA, they are regularly seen in Kings Park and Bold Park and many areas of coastal bushland.

PREFERRED HABITAT: They favour coastal heath and woodlands with an abundance of flowering plants, especially dryandras and banksias.

LIFE HISTORY: White-cheeked honeyeaters are most likely to nest from August to September and from March to May. They build a neat cup, woven from bark, grass and small twigs, in low dense vegetation. There are usually two eggs, which are incubated by the female. Both parents, however, hunt insects to feed to the hatchlings.

CALL: The call is a harsh "chak-a-chak" and the song a prolonged series of whistles and chirps.



Photos - Babs & Bert Wells/CALM

TUART

(Eucalyptus gomphocephala)

Stately tuart has dense foliage, dull grey bark and showy white to cream flowers. It is restricted to coastal areas. The largest stands of tuart forest can be seen around Wonnerup and Ludlow, near Busselton, where the trees intermingle with peppermints. Tuart buds are very distinctive; they have swollen bud caps and are shaped like small ice-cream cones.

OTHER NAMES: White gum, duart.

DESCRIPTION: This medium-sized to tall tree grows up to 40 metres high. Its rough, fibrous grey bark flakes into small pieces. The leaves are often curved, 90 to 160 millimetres long, and are a shiny light green above and paler below. The almost stalkless buds cluster in groups of seven. Each bud is 14 to 23 millimetres long, including the prominent broad bud cap which is eight to 10 millimetres long. The fruits are narrow, cup-shaped and 13 to 25 millimetres long, with a fairly broad rim. They have four internal compartments.

DISTINCTIVE FEATURES: Tuart trees have ice-cream cone shaped buds, as the bud cap is broader than the base.

HABITAT: This tree favours sandy soils over limestone in areas near the coast.

DISTRIBUTION: Tuart grows from Jurien Bay to near Busselton.

FLOWERING TIME: Summer and early autumn.

USES: In the past, tuart timber was used to craft whim and wagon wheels, decking for wagons, telegraph pegs and tool handles. After World War II a tuart mill was built at Ludlow especially for rolling stock construction.

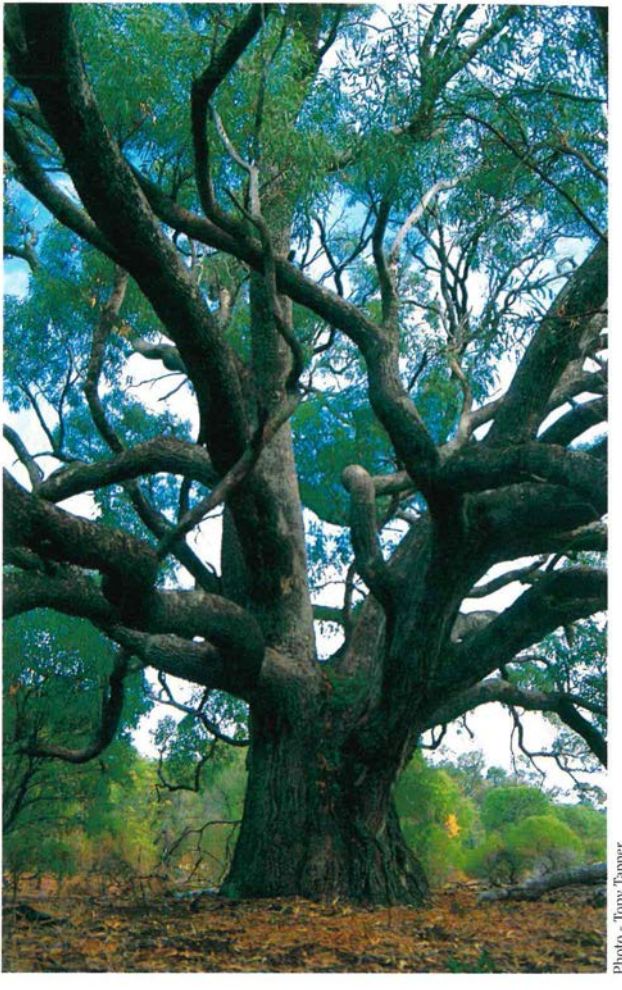


Photo - Tony Tapper

SAWTOOTH BANKSIA

(Banksia prionotes)

This neat little tree has leaves with a strongly defined sawtooth pattern, and the scientific name comes from the Greek *prion* for "saw" and *otes* for "like". Sawtooth banksia is killed by fire but readily regenerates and can be seen recolonising burnt areas or disturbed areas along roadsides. It was first collected by Colonial botanist James Drummond near the Swan River in 1839.

DESCRIPTION: Sawtooth banksia is a spreading shrub or small, erect tree up to 10 metres high. It has pale grey bark. The leaves have triangular teeth and can be quite variable in length, ranging from 15 to 27 centimetres long and usually one or two centimetres wide. Flower-spikes are between 10 and 15 centimetres high and are very attractive. The buds are white, while the flowers are orange when they open. The flowers at the base open first, creating an acorn pattern on the flower-spikes. Each cone contains up to 60 follicles.

OTHER NAMES: Orange banksia, acorn banksia.

DISTINCTIVE FEATURES: The compact shape of sawtooth banksia contrasts with the straggly habit of firewood banksia. Its leaves are more regularly toothed and the colour of the flowers differs.

HABITAT: The species usually inhabits yellow or white sand, growing in tall shrubland or low woodlands, and favouring coastal areas.

DISTRIBUTION: Sawtooth banksia is found from Tamala Station, south of Shark Bay, to Wagin. Isolated pockets are found as far inland as Wongan Hills and Quairading.

FLOWERING TIME: Flowering is between February and August, but most spikes bloom between March and May.

Photos - Babs & Bert Wells/CALM

THICK-LEAVED FANFLOWER

(Scaevola crassifolia)

Thick-leaved fanflower has spikes of pale blue flowers, which can form dense thickets in many coastal areas. It is similar to shining fanflower (*Scaevola nitida*), which is also found along the WA coast. Fanflowers (*Scaevola* species) form a large genus of almost 100 species. Almost three quarters of these are restricted to Australia.

DESCRIPTION: The thick-leaved fanflower grows as a shrub up to one and a half metres high. Its young foliage is often shiny and somewhat sticky. The broad, thick and slightly fleshy leaves may be up to eight centimetres long. Pale blue to violet, or rarely white, fan-like flowers are clustered into elongated flower-spikes. Each flower is eight to 13 millimetres long, with five lobes. There are five stamens. The spherical fruits are three to five millimetres across.

DISTINCTIVE FEATURES: Thick-leaved fanflower can be distinguished from shining fanflower by its stalked leaves (stalkless in shining fanflower), smaller flowers (13 to 22 millimetres long in shining fanflower) and its slightly warty, rather than smooth, fruits.

HABITAT: This wildflower is restricted to heath and shrubland in coastal areas, usually on sand or limestone soils.

DISTRIBUTION: Thick-leaved fanflower grows on the west coast of WA, from Carnarvon south to Cowaramup, and on the State's southern coast, from Cape Riche to Cape Arid.

FLOWERING TIME: August to January.

Photo - Andrew Brown

SIGHTING			
	DATE	TIME	
western grey kangaroo			
brush wallaby			
echidna			
honey possum			
bobtail skink			
emu			
osprey			
nankeen kestrel			
galah			
white-tailed black-cockatoo			
white-cheeked honeyeater			
New Holland honeyeater			
tuart			
sawtooth banksia			
thick-leaved fanflower			

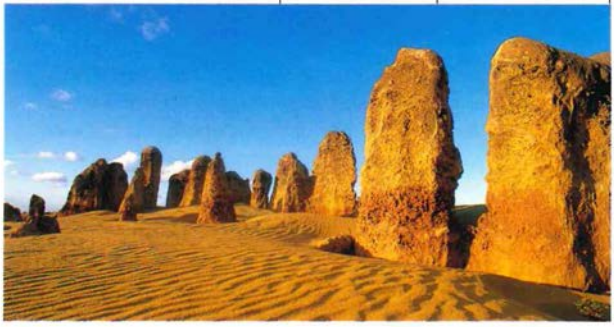


Photo - Jiri Lochman

RECORD

LOCALITY	REMARKS

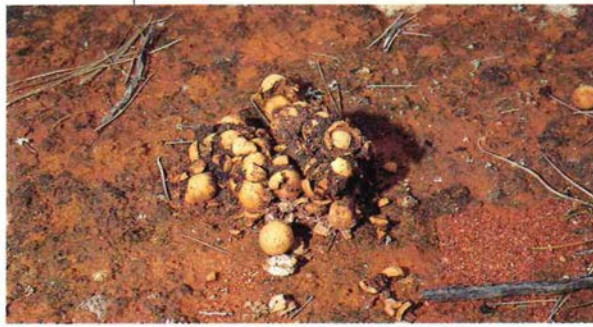


Photo - Babs & Bert Wells/CALM

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Carolyn Thomson is a special projects officer for CALM. She has written and edited numerous publications about WA's natural environment and wildlife, including CALM's successful **Bush Book** series.

Keith Hockey is the Senior National Park Ranger for CALM's Moora District. He is responsible for the day-to-day management of eight parks, including Nambung National Park. Keith has been a park ranger for 18 years. He has built up a wealth of knowledge relating to the area and is only too happy to help you make the most of your visit.

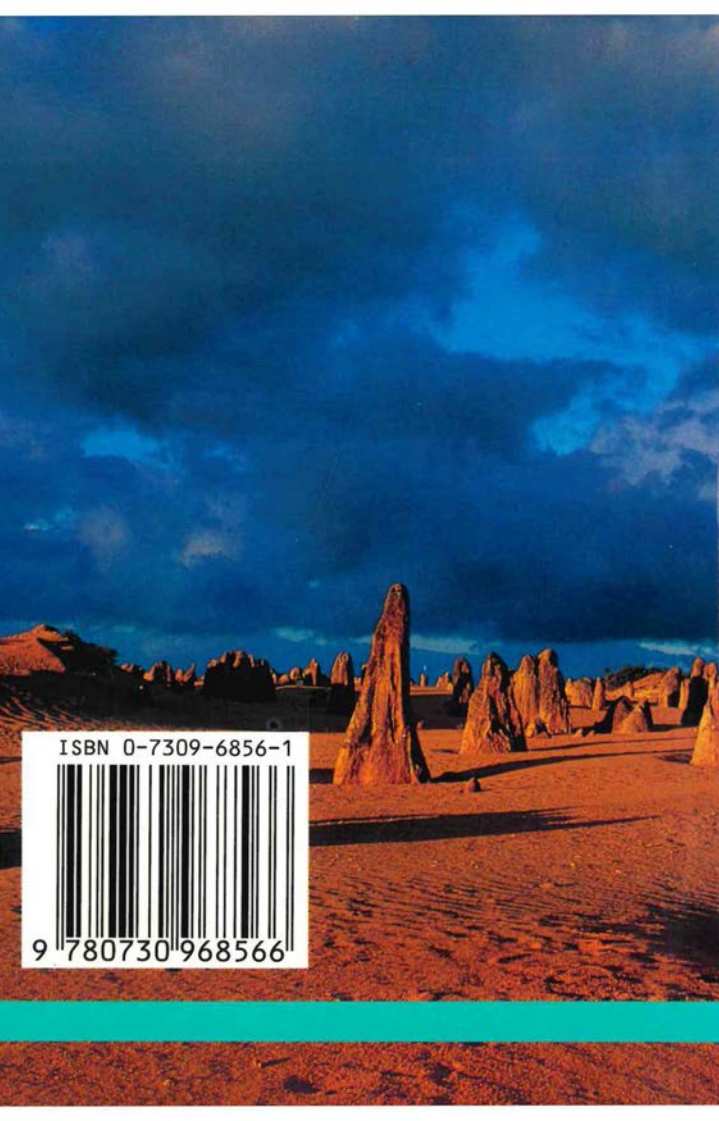
Dave Rose has been the District Manager of CALM's Moora District since 1990 and has been involved in forestry, park management and nature conservation work for 25 years. This work has been carried out in diverse parts of Western Australia, from the Kimberley to the south-west forests.

OTHER BOOKS IN THIS SERIES

Discovering Penguin Island and the Shoalwater Islands Marine Park

Discovering the Shark Bay Marine Park and Monkey Mia

Discovering Yanchep National Park



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