Discovering Penguin Island

and the Shoalwater Islands Marine Park

DEPARTMENT OF PARKS AND WILDLIFE

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

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DISCOVERING PENGUIN ISLAND

and the

SHOALWATER ISLANDS MARINE PARK

by Kevin Crane, Carolyn Thomson and Peter Dans

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

INTRODUCTION

Penguin Island is a truly unique place. Only 42 kilometres from the centre of Perth, it is home to a diverse array of wildlife and boasts breathtaking marine and coastal scenery. It is home to the largest colony of little penguins on the west coast and probably Western Australia. The small 12.5 hectare island is less than 700 metres offshore from the growing regional centre of Rockingham.

The island and the surrounding waters of the Shoalwater Islands Marine Park provide visitors with a variety of recreational opportunities. The unique natural resources have significant educational and interpretive potential and the island is a focus of scientific wildlife research. Penguin Island also has a fascinating history.

The Department of Conservation and Land Management (CALM) has been managing the island since 1987. The Department has progressively undertaken works to enhance the natural environment and provide essential facilities to make it one of the State's premier ecologically sustainable nature-based tourism destinations. The island has something special for visitors of all ages, whether from the local or metropolitan area, interstate or overseas.

Photo – Duncan Dodd

Dept. of Land Administration aerial photograph – 5104 WA 3170(c) 920416 – Shoalwater Islands Marine Park. Lic. No. 489/95.

HISTORY

Penguin Island was probably first used by Aboriginal people, although no evidence of their presence has been found. Whalers and sealers landed there during the 1800s.

Seaforth McKenzie is the first person known to have lived on Penguin Island.

The eccentric Canadian-born mining engineer was described as a "bearded man with gallant manners and a twinkling eye". He squatted on the island from about 1914 but, at first, did not reside there permanently. In 1918, when Penguin Island was gazetted as a reserve for public use, McKenzie was given an annual lease. He planned to develop a holiday resort on the island.

McKenzie hollowed out several of the island's limestone caves. Some were crudely furnished and he encouraged campers to use them. Visitors could take supplies from a store in a small cave, as long as they left a fair amount of money or something of equal value. One of the caves was called "The Palace". Here, a ball was staged after Seaforth was crowned "King of the Island" at a grandiose ceremony. A lover of literature, Seaforth would often invite his friends to lamp-lit poetry readings in the "Library" cave. He built a timber and iron "Manor House" for himself. Visitors appear to have greatly admired and respected him, despite his eccentricities.

After leaving the island in 1926, McKenzie lived on the mainland for a short time, before returning to his previous home in New Zealand. He explained his 45 year absence (he left wife Sarah and their six children to go to work one day and never returned) by saying he had only just regained his memory of his family. Today, the only reminders of his presence are some nails in the cave walls, a few gnarled fig trees and an old well. But one of his traditions lingers on; people still escape to the island for relaxation and good times.

Photo – Eddy Smith

Above: *Seaforth McKenzie and friends*

Over the years, several private enterprises leased out parts of the island. One enterprising leaseholder in the 1950s carried visitors to the island in an amphibious vehicle, an ex-Army DUKW. Several of these were later dumped near the jetty to slow erosion and parts of them can still sometimes be seen sticking out from the sand. Shacks were built to house holidaymakers and carnival-style entertainment was provided.

In 1987 the Department of Conservation and Land Management bought out the lease, and now manages the island as a conservation park. The shacks have been removed and "The Penguin Experience" viewing and interpretation facility, the Western Mining Research and Management Centre and improved recreation facilities have been built. Visits to the island are restricted during the peak of the penguin breeding season, usually from June to about September. But for the rest of the year, visitors can enjoy the island's beaches and surrounds during daylight hours.

LITTLE PENGUIN

(Eudyptula minor)

Most little penguins land on Penguin Island in the hour or two after sunset. They assemble just offshore in small groups or 'rafts' before landing, drawn together by their barking calls. The scientific name of the little penguin means 'little diver' and they are indeed adept in the water. They are heavy for their size because of the strong skeleton needed to withstand the pressure of diving.

DESCRIPTION: Penguins are superbly adapted to the marine environment. The wings of these flightless seabirds have evolved into flippers for underwater propulsion, while their pin-like feathers form a waterproof, insulating coat which streamlines the birds in the water. The little penguin is the smallest of the 17 penguin species. Adults stand about 40 centimetres tall and weigh about a kilogram, but birds in the Shoalwater area are larger than those elsewhere in Australia.

OTHER NAMES: Fairy penguin, little blue penguin.

STATUS AND DISTRIBUTION: WA penguins have declined in number since European settlement. Predation by foxes and cats has had an impact on birds nesting on the mainland and colonies are now largely confined to offshore islands. At sea, penguins are vulnerable to hazards such as discarded plastics and fishing line, oil pollution, sea lions and sharks. Penguin Island supports about 1200 little penguins and is probably the largest breeding colony in WA.

LIFE CYCLE: Mortality of chicks is high, with about half surviving to eight weeks, when they are ready to leave land for the first time. They do not breed until three or four years of age, and can then expect to live for a further six or seven years. However, some little penguins survive for 20 years. About 15 per cent of adults die each year.

Photo – Babs & Bert Wells/CALM

BREEDING: Penguin courtship is a noisy affair. The birds constantly squabble over nest sites and squawk raucously to their mates. Breeding females lay one or more clutches of two eggs, generally between June and September. Incubation is shared by both parents over a period of five weeks. Two chicks often hatch, but usually only one is raised unless food is abundant. Little penguins often breed with the same partner in successive years. Some change mates because their partner dies but about a fifth 'divorce' their mates, especially if they do not manage to raise any young. Little penguins in the Shoalwater area breed earlier and for longer than those elsewhere.

FEEDING: The little penguin colony on Penguin Island consumes more than 100 tonnes of fish every year. When food is abundant, more chicks survive to fledging. Little penguins can swim eight kilometres per hour and dive as deep as 60 metres to catch pilchards, whitebait and other small fish. The birds may venture 200 kilometres from Penguin Island on extended feeding excursions, but during breeding they generally feed within a 15 kilometre radius.

MOULTING: Penguin feathers must remain watertight at sea. They cannot be replaced progressively like other birds. After breeding, little penguins spend some time at sea fattening up, before returning to the island to moult. During a two to three week period in December or January, plumage is shed en masse and then replaced. Penguins cannot go to sea to feed during this stressful process. Moulting penguins often stand in the open to cool themselves and are particularly vulnerable to disturbance at this time.

CALL: Penguins have up to nine different calls, ranging from puppy-like barks to loud braying sounds.

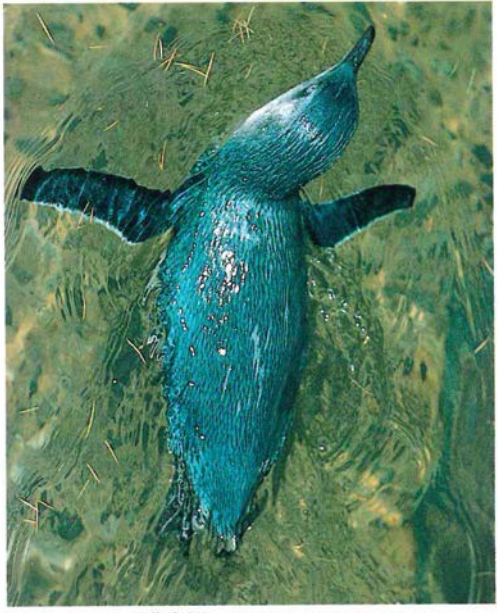


Photo – Babs & Bert Wells/CALM

AUSTRALIAN PELICAN

(Pelecanus conspicillatus)

Pelicans can often be seen on a hot day hitching a ride on spiralling thermal updrafts. The birds spread out from their colonies with slow and heavy wingbeats, searching out suitable updrafts. When one is found, the lead birds begin to circle, flapping their wings intermittently, rising steadily through the sky. Within minutes a "staircase" is formed, with 10, 20, perhaps 100 pelicans spiralling steadily upwards. When they reach a suitable height, perhaps thousands of feet, they peel off and glide towards their destination. In this way, the birds avoid expending the considerable energy needed to propel their bulk through the air by flapping.

DESCRIPTION: Pelicans are easily recognised by their bold, black and white markings, blue legs, enormous bill with pink pouch and yellow eye-rings. During courtship the pouch becomes bright red, blue and orange.

STATUS AND DISTRIBUTION: They are common throughout most of Australia and small numbers occur in Indonesia, New Guinea and the Western Pacific islands.

PREFERRED HABITAT: These birds inhabit fresh and saltwater lakes and estuaries, rivers, swamps and sea shores.

LIFE HISTORY: The bird's pouch is used mainly as a "scoopnet" for catching small fish and shrimps, rarely for carrying them. The pouch is also used for catching rain. Birds sitting on nests during heavy rain showers have been seen with bill open and pouch distended, facing head to wind. The total pouch capacity is seven litres! Pelicans are colonial nesters. Colony sizes in WA's nine regular breeding sites vary from a dozen pairs to more than 1000. They almost invariably nest on islands. Nests are little more than shallow scrapes on the ground, often lined with pieces of seaweed and discarded feathers. Two eggs are laid. Within a couple of weeks of hatching, the chicks gather in small mobs or "creches".

Photo – Babs & Bert Wells/CALM

SILVER GULL

(Larus novaehollandiae)

The silver gull is a majestic bird and its cohabitation with people has brought pleasure to many. However, the great adaptability of silver gulls to human environments - especially open rubbish tips - and the bad habits of people hand-feeding them with food scraps, have seen this bird become an urban nuisance, and made the naturally aggressive gull even bolder. The birds breed on about 100 islands around the coastline, mostly in small colonies. Around centres of human habitation such as Penguin Island, however, the colonies have exploded, possibly displacing other seabirds.

DESCRIPTION: Adult silver gulls are white, with a silvery-grey back and wings. The outer tail feathers are tipped with black. The white eye is circled with a maroon ring and the legs and beak are scarlet. Penguin Island is now a very large breeding colony for the silver gull. As a result, a high proportion of young and subadult birds can be seen on the island. See if you can pick out these youngsters by the colour of their plumage. Young birds are a mottled sandy brown with black spots. Immature gulls have black, rather than red, bills and brown legs. The shoulders and back usually have brown mottling.

OTHER NAMES: Seagull, red-legged gull, red-billed gull.

STATUS AND DISTRIBUTION: Silver gulls are common and now found in greater numbers than before European settlement. There are an estimated 80,000 in WA. They range throughout the Australian coast, and some inland areas of eastern Australia.

PREFERRED HABITAT: Most people think of silver gulls as seabirds, but they are in fact shore birds. They breed on offshore islands but on the mainland they are found anywhere where there is ample food, such as rubbish dumps, together with fresh water. They are also at home in city parks and coastal beaches.

Photo – Terry Goodlich

Above: Seagull at nest.

Below: Seagull on beach

Photo – Hamish Crawford

FEEDING: These birds eat almost anything but their diet varies with the location. They feed naturally on dead fish, plankton and crustaceans washed up on beached seaweed and also consume the kelp fly that breeds in mounds of seaweed. However, research has shown that a high proportion of gulls' food now consists of fried chicken, sausages and bread. Silver gulls will also sometimes steal the eggs and eat the young of other birds. Because people have changed the gulls' natural behaviour by feeding them, local recreation grounds and picnic spots are often turned into gull begging sites, with squabbling, noisy free-for-alls. Please resist the temptation to add to these problems by feeding the birds. In some parts of the island it is now hard to be heard over the noise of the gulls.

BREEDING: Around Australia, most gull species nest once a year, but because of Perth's climate, local silver gulls lay more than one clutch of between one and three eggs between April and November. Two broods are usually raised each year. The eggs are olive with brown and black blotches and are easy to see. The parents share the task of raising the young. Incubating the eggs takes from three to four weeks and the young leave their nests about four weeks after hatching. After this, life becomes a struggle. Younger birds are at the lowest end of the pecking order and will be driven away from feeding areas by adult birds. You can observe this behaviour if you take the time to watch a feeding flock.

CALL: Seagulls make the drawn-out, melancholy *kwarr* with which most people are familiar.

Photo – Terry Goodlich

Photo – Hamish Crawford

CRESTED TERN

(Sterna bergii)

Crested terns are common on Penguin Island, roosting in considerable numbers on the sand spit adjacent to the jetty. Their habit of plunging into the water in pursuit of small fish has given rise to the name "diver". Congregations of terns at sea usually indicate the presence of baitfish such as pilchards.

DESCRIPTION: The crested tern has long, tapered grey wings, a grey back and white underparts. Its yellow bill is fine and sharp and it has relatively short black legs. This tern's most distinguishing characteristic is its shaggy black cap or crown. During courtship and breeding this cap is jet black with a crest, but it moults and becomes mottled at non-breeding times. The crested tern is a similar size to the silver gull, but has a greater wingspan, which is evident in flight.

OTHER NAMES: Diver, greater crested tern.

STATUS AND DISTRIBUTION: The crested tern is common around Australia's entire coastline and widespread around the world. It is found in Fiji, southern Asia, southern Africa and the Red Sea.

PREFERRED HABITAT: These attractive birds are common around the Australian coast. They rarely move inland. An estimated 1500 pairs nest on small offshore islands around the coastline of metropolitan Perth. Some nest on tiny islands in coastal salt lakes. The crested tern does not breed on Penguin Island, preferring nearby Seal Island.

LIFE HISTORY: Crested terns generally breed from two years of age and at 12 month intervals. Roosting sites, known as "clubs", are the focus of courtship displays and mating. The displays often involve intricate dances and postures. As a sign of his devotion, a male bird will often present a potential mate with a small fish. If it is not eaten, the fish will be carried in a spiralling upward flight. The flight may reach 250 metres before the pair spiral, glide and twist downward, flying together as one. Crested terns nest on

Photos – Terry Goodlich

relatively clear, flat ground within sight of water. The nests are usually close together and gull nests are often present. One sandy, stone-coloured egg is usually laid (rarely two). Chicks are active a few days after hatching and usually fledge in five weeks.

CALL: These birds produce a noisy rasping *carrik* or *kirrik*.

CASPIAN TERN

(Sterna caspia)

The Caspian tern is the largest of all terns. It flies with slow, easy wingbeats and, like the crested tern, has a habit of plunging into the water from considerable heights in pursuit of food. The primary diet is fish, some quite large, taken from salt or fresh water. This bird will become aggressive if intruders enter the nesting area, swooping close and emitting a sharp *kah*.

DESCRIPTION: The large size and big bright, reddish-orange bill distinguish this tern from other species. The Caspian tern is about 55 centimetres long, with a wingspan between 110 and 130 centimetres. Like the crested tern, it has a black crown that becomes streaked and mottled with white when it is not breeding. The underside of the body is white, the upper body a pale grey and the legs black.

STATUS AND DISTRIBUTION: The Caspian tern is found all around the Australian coast, is somewhat nomadic and is usually seen individually or in pairs. It is widespread but not numerous in any area. Caspian terns are also found in North America, New Zealand, Africa and Eurasia. They have been recorded breeding on Shag Rock as well as Bird, Seal and occasionally Penguin Island.

PREFERRED HABITAT: Caspian terns generally stay close to large bodies of water. They are most common on coasts but may venture inland to large rivers, lakes and reservoirs.

LIFE HISTORY: Caspian terns engage in aerial courtship involving high speed twisting, turning dives in perfect unison before landing together. The pair may then preen each other before mating. One or two eggs are laid in a shallow scrape which may have a sparse lining of seaweed, sticks or grass. The large eggs are a stone colour, with a few small brownish splotches. Eggs are incubated by both parents for about 22 days before hatching. The downy chicks have distinctive bright orange bills and move about within a few days.

Photo – Babs & Bert Wells/CALM

CALL: The Caspian tern is generally silent, but makes a sharp *kah* as a warning or when alarmed.

BRIDLED TERN

(Sterna anaethetus)

The bridled tern is seen in the Shoalwater area during spring and summer. At first, these graceful fliers are only heard on the islands at night, feeding far offshore during the day. However, as summer and courtship approaches, they are regularly seen on Penguin Island, especially in the morning.

DESCRIPTION: The bridled tern is smaller than the crested and Caspian terns, measuring about 40 centimetres long. It sports a long, fine white eyebrow that resembles a bridle. The crown, nape, bills and legs are black. The back, tail and upper wings are a sooty dark brown and the underside is a dull white.

OTHER NAMES: Brown-winged tern, dog tern.

STATUS AND DISTRIBUTION: In Australia, the bridled tern nests from Cape Leeuwin, right around the northern coastline to Queensland. There have been some breeding records from South Australia, and the range of this species has been extending southward along the WA coast for many years. In the Shoalwater area the birds nest on Shag Rock, Bird, Seal and Penguin islands and in rocky island and stack areas at Cape Peron.

PREFERRED HABITAT: Bridled terns rarely visit mainland shores, preferring offshore islands. They are migratory, usually arriving in the Shoalwater area in October. They often leave en masse in April, a spectacular sight. Banding has shown that terns from the southern coast of WA spend our winters in the Indo-Pacific north of the Equator. Bridled terns generally nest on rocky limestone areas of Penguin Island.

LIFE HISTORY: Bridled terns eat small fish, crustaceans and insects, often feeding many kilometres out to sea. Courtship displays feature intricate parades and flights. The male often regurgitates food for the female just before copulation. Nests are not densely packed like the crested terns. They lay one egg in a

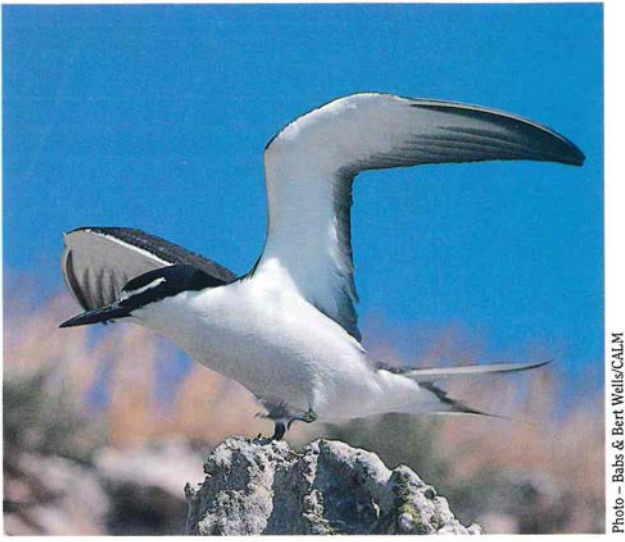


Photo – Babs & Bert Wells/CALM

shallow indentation and it hatches in about 30 days. Chicks are mobile within a week of hatching and fledge at about nine weeks of age.

CALL: The call is a bark-like *wup-wup*.

PIED CORMORANT

(Phalacrocorax varius)

Pied cormorants are often seen perched on rocky vantage points, preening themselves or hanging out their wings to dry. These versatile birds catch their prey underwater, grasping fish, crustaceans and molluscs in their strong, hooked bills. Groups can be seen flying in V-shaped formations.

OTHER NAMES: Shag, yellow-faced cormorant.

DESCRIPTION: These large birds reach up to 84 centimetres long. They are readily identified by the large bright yellow patch in front of each eye. As their name implies, they are black above and white below. Like other cormorants and darters they have a large, elongated body and long neck. The tail is relatively short. The feet are webbed, to help with underwater propulsion.

STATUS AND DISTRIBUTION: Pied cormorants are common all around the coastline of mainland Australia and they are also found well inland in most other Australian states.

PREFERRED HABITAT: In WA these birds are common on islands, coastal areas and estuaries. They nest on offshore islands. In the Shoalwater area they alternate their breeding between Seal Island, Bird Island and Shag Rock.

LIFE HISTORY: To nest, pied cormorants congregate in large colonies. On the Shoalwater Islands, laying occurs from late February to early July. The male selects a nest site and sets about attracting a female by seductively waving his wings, throwing back his head, and fanning his cocked tail. Three to five limy white eggs are laid in a nest of sticks. Both parents care for the eggs and offspring.

CALL: Male pied cormorants produce a variety of loud calls at the nest. The females make a hissing sound.

Photos – Babs & Bert Wells/CALM

OYSTERCATCHERS

(Haematopus species*)*

Oystercatchers are readily recognised by their pink legs, brilliant red eyes and long red, scissor-like bills, used to prise molluscs from their shells. Pied oystercatchers (*Haematopus longirostris*) and sooty oystercatchers (*Haematopus fuliginosus*) are either "stabbers" or "hammerers", depending on which method of feeding they learn from their parents. After first digging out their prey from wet sand flats, stabbers extract the prey with a quick jab, while hammerers beat the shell until it breaks.

DESCRIPTION: The sooty oystercatcher is black all over, while the pied oystercatcher has a black head , neck, upper breast, wings and tail. Both birds are about 50 centimetres long.

OTHER NAMES: The sooty oystercatcher is sometimes called black redbill.

DISTRIBUTION: Both species are common around all parts of the Australian coast. The pied oystercatcher also occurs in New Guinea.

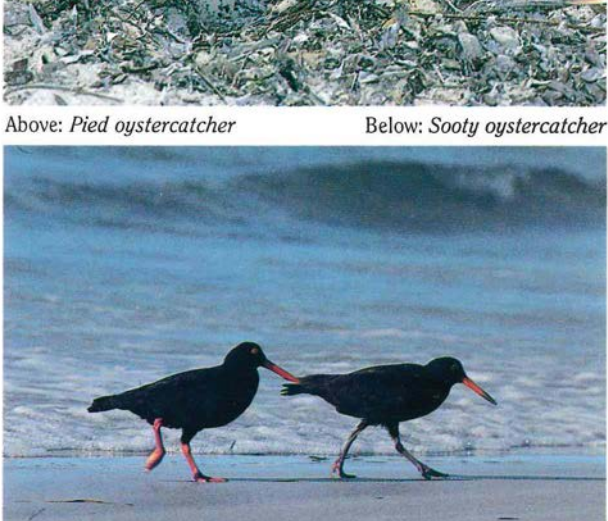
PREFERRED HABITAT: Oystercatchers live along rocky shores, beaches, estuaries and offshore islands.

LIFE HISTORY: These birds lay two to four eggs in a shallow sandy depression. Both sexes will incubate the eggs and care for the young. Sooty oystercatchers share these duties fairly equally, but female pied oystercatchers do the majority of the incubation. The young leave the nest within a couple of days of hatching but remain with their parents for several more weeks. The adults will go to great lengths to defend both the eggs and young, even to the extent of feigning their own death. Pied oystercatchers occasionally nest on Penguin Island.

CALL: They make a loud *kleep* or *hu-eep* sound.

Above: *Pied oystercatcher*

Below: *Sooty oystercatcher*



Photos – Babs & Bert Wells/CALM

GIANT PETRELS

(Macronectes species*)*

Winter storms bring a variety of wildlife to our shores. A common visitor to the metropolitan coast during winter is the juvenile southern giant petrel (*Macronectes giganteus*). The northern giant petrel (*Macronectes halli*) arrives here less frequently. Both are aggressive, piratical scavengers.

DESCRIPTION: The southern and northern giant petrels are by far the largest members of the petrel family. Males can reach almost a metre long, with a wingspan of between 185 to 205 centimetres. Their large, tube-nosed bill is nine to 10.5 centimetres long and has a sharp hook. The juvenile birds are mainly blackish, gradually fading to dark greyish-brown, with mottled white on their forehead and face. These are the birds most often seen in the Shoalwater area. It is hard to tell southern and northern giant petrels apart, but the southern giant form has a pale green tip on the bill and the northern giant form has a pinkish tinge on its bill, with a dark tip.

OTHER NAMES: Both birds are also known as giant fulmars or stinkers.

DISTRIBUTION: These petrels are found around the coastline of southern Australia including Tasmania. They are not seen in Australian waters above the 26th parallel. Both birds range to southern Africa and the intervening waters, as well as southern America.

LIFE HISTORY: These birds feed on fish but are also known to follow ships out to sea to feed on galley refuse. Quite active on land, they will make an easy meal of an unattended bird's nest or seal pup. Southern giant petrels breed in colonies of several hundred pairs from October to March. They nest on level ground of open coastal plateaus or headlands. Breeding sites include shores of the Antarctic continent, sub-Antarctic islands and various islands in the southern Indian Ocean. The northern giant petrel breeds on

Photo – Terry Goodlich

Above: *Southern giant petrel*

islands in the southern Indian Ocean and New Zealand region.

Call: Both birds make a threatening *hu-hu-hu-hu* sound. When trying to impress their mate they produce a cat-like mewing.

BOTTLENOSE DOLPHIN

(Tursiops truncatus)

Bottlenose dolphins abound in the waters around Penguin Island. Take some time to look carefully over the water surface and you may see these magnificent creatures riding on the bow wave created by boats, surfing waves or leaping playfully into the air.

DESCRIPTION: Like people, the bottlenose dolphin is an air breathing mammal. Therefore, even though they are adapted to the marine environment, they still must come to the surface to breathe through the blow hole on the top of their heads. The dolphin has a mid-grey back but its belly is a lighter colour. This countershading helps camouflage the animal. As potential predators (such as killer whales or sharks) look up from the deep, the light grey belly blends in with bright surface waters. When looking from above, the grey back blends in with the dark waters below. Bottlenose dolphins have prominent dorsal fins, which can be seen slicing through the water. This fin is slightly hooked and set midway along the body. This playful mammal is also easily recognised by its melon-shaped head and short, wide and rounded beak. The flippers are broad at the base and taper to a point. Bottlenose dolphins are very variable in size, depending on where they are found. Average length is three metres and calves are about a metre at birth.

STATUS AND DISTRIBUTION: This species is common in cold, temperate and tropical seas and estuaries all over the world. It is often seen close inshore in estuaries, even entering rivers, and an offshore form is found in the open ocean. In some parts of the world, bottlenose dolphins are killed for food.

LIFE HISTORY: Bottlenose dolphins have a complex and fascinating social structure. Within a population, they form small subgroups which inhabit a defined home range. Members of a group, however, may change from time to time and they assist each other in activities such as fish herding and calf rearing. Even

Photo – Doug Coughran

mating is a group activity - the males co-operate to herd a female in reproductive condition and take turns to mate with her. They also try to prevent rival groups from having access to her. A calf is generally born 12 months later. The species lives for 25 to 30 years and females begin to breed from about six years of age, calving every two or three years. The calves suckle for up to 18 months. Bottlenose dolphins eat a wide variety of fish, squid and octopuses. The offshore form may be able to dive to depths of more than 600 metres to catch food.

STRANDING HISTORY: Bottlenose dolphins often strand, either singly or in small groups. Strandings should be reported to CALM.

AUSTRALIAN SEA LION

(Neophoca cinerea)

Australian sea lions are often seen basking in the sun on islands off WA's coast. Seal Island, to the north of Penguin Island, is a favourite haul-out area for these majestic animals. Once heavily hunted for their meat and oil, they are now coming under increasing pressure from a rapidly expanding society.

DESCRIPTION: Sea lions have a blunt, dog-like snout and small external earflaps. Males may reach about two metres long and weigh 300 kilograms. Their fur is a chocolate brown colour, with a creamy crown and neck. Females are silvery grey above and creamy yellow below. They are smaller than males, growing up to one and a half metres and weighing around 80 kilograms.

STATUS AND DISTRIBUTION: This animal is the rarest sea lion in the world, and the only one found solely in Australia. It is given special protection under WA's Wildlife Conservation Act, as the entire population only numbers a few thousand animals. The Australian sea lion breeds and rests on offshore islands from the Houtman Abrolhos Islands, near Geraldton, to Pages Islands, just east of Kangaroo Island in South Australia. Its range once extended east of Bass Strait before it was wiped out of this area by hunting.

HABITAT: Australian sea lions spend their time resting on sandy beaches and venturing out to sea for lengthy periods to catch food.

FEEDING: Sea lions use their quick, powerful swimming and sharp teeth to catch food. Fishing excursions can last up to two days. Fish, squid, octopus, cuttlefish, small sharks and rock lobster form the basis of their varied diet. Their torpedo-like bodies reduce water resistance. External appendages are reduced in size, like the ears, or located in slits in the body, such as the sex organs. Australian sea lions also have other refinements that increase their swimming ability. Their respiration is highly efficient, with up to 40 per cent of the lung capacity exchanged with each breath

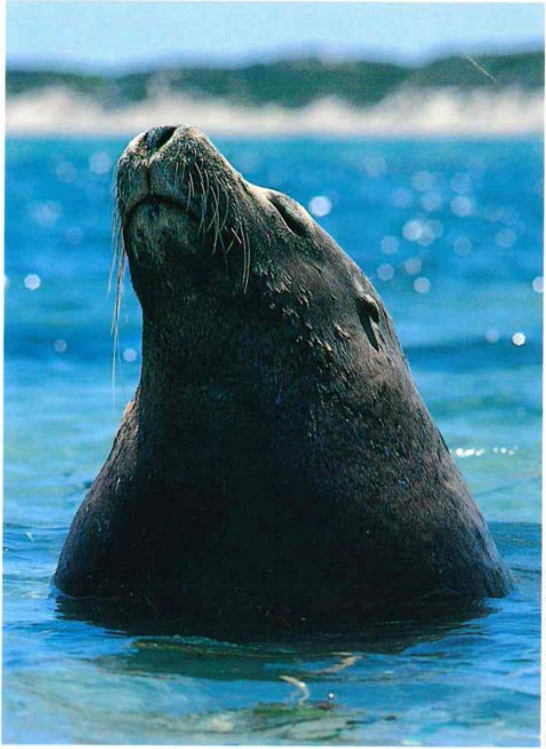


Photo – Babs & Bert Wells/CALM

(people only exchange about 10 per cent). Sea lions also have greater blood volumes and greater concentrations of oxygen in the blood than non-diving mammals. They can greatly reduce their heart rate and control blood flow to only the vital organs. All this means the Australian sea lion is a very efficient swimmer and diver.

BREEDING: Australian sea lions on the west coast of WA exhibit an unusual breeding pattern. Breeding takes place on offshore islands, about 200 kilometres north of Perth, for four to five months every 18 months. After the breeding season is over, the males migrate south to islands off the Perth metropolitan coast, probably to relieve feeding pressure from the females and young pups. As a result, the sea lions found at places such as Seal Island are all males. The cow and her pup develop a strong bond and the pup continues to take milk from its mother for 15 to 18 months after birth. While they are away fishing, mothers hide their pups under a bush or behind a rock. The mothers are extremely protective of their pups, and intruders on breeding islands have sometimes been injured as a result. Australian sea lions are the only seals or sea lions in the world with an 18 month breeding cycle. This could be because in the waters where they live there is no appreciable difference between food availability in winter and summer. Instead, mothers feed their pups over a longer period of time, which is an advantage in an environment low in food resources.

Photo – Doug Coughran

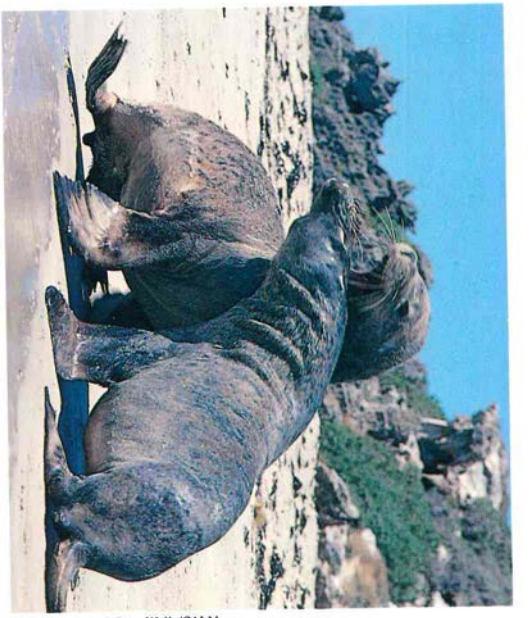


Photo – Babs & Bert Wells/CALM

MARINE TURTLES

Three species of turtle may be seen in the waters of the Shoalwater Islands Marine Park. All of the world's seven species of marine turtle are either threatened or vulnerable. They may be drowned in fishing nets, strangled by rubbish, hit by boats or killed for meat and leather, and their eggs are taken for food and aphrodisiacs.

Reaching weights of up to 150 kilograms or more, loggerhead turtles (*Caretta caretta*) usually inhabit subtropical waters. Feeding in estuaries and along the continental shelf, loggerheads use the strong jaw muscles in their large heads to crush shellfish and crustaceans. Small numbers of large juvenile and adult loggerheads live off the coast of Perth year round. Each winter, baby loggerhead turtles are carried thousands of kilometres south from northern breeding areas by means of the Leeuwin Current. Weighing only about 100 grams, and with shells between five to eight centimetres long, the youngsters are blown onto beaches along the entire western coastline. Some of these often end up in the waters of the Shoalwater Islands Marine Park.

Feeding mainly on jellyfish and similar marine organisms, the leatherback turtle (*Dermochelys coriacea*) is the largest of all marine reptiles, reaching weights up to 900 kilograms and lengths of up to two metres. Instead of having a shell of large bony plates, leatherbacks are quite unusual in having a thick, leathery skin strengthened by small embedded bones. This mosaic of interlocking bones is thickened to form seven longitudinal ridges on the back and five on the underside. They also have huge front flippers and are the fastest swimmers of all marine turtles. Found mainly offshore, these turtles sometimes venture into Warnbro Sound, mainly in summer. Leatherbacks are capable of very deep diving, to depths in excess of 1000 metres, and can remain submerged for up to 45 minutes. It is suspected that here they

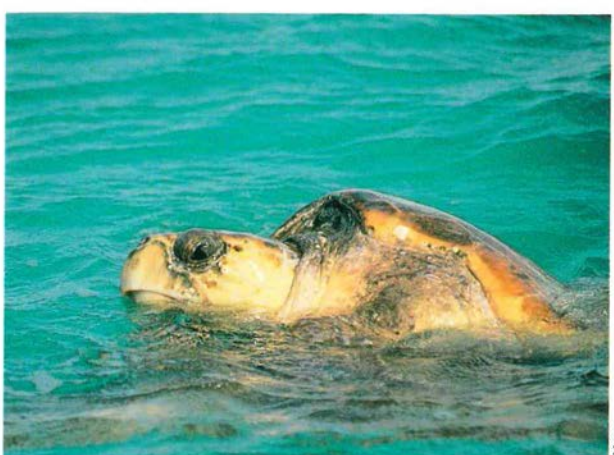


Photo – Janet Mann

Above: *Loggerhead turtle*

feed on big luminescent jellyfish the size of coffee tables.

Small numbers of juvenile green turtles (*Chelonia mydas*), weighing up to 30 kilograms, are sometimes seen in waters offshore from Perth. Reaching about 135 kilograms, adult green turtles are vegetarian, grazing on seagrass beds and algae. Juveniles are usually more opportunistic, taking any food they can. The heart-shaped shell of the green turtle is greyish-brown to black. In the past, the animal was boiled up into soup, and its common name came about because its fat was green. Australia, along with 115 other countries, has now banned the import or export of products from sea turtles.

KING'S SKINK

(Egernia kingii)

These large blackish to olive-brown reptiles are among the most visible animals of Penguin Island. If you hear a rustling noise in the undergrowth, check to see if it is caused by one of these handsome creatures.

DESCRIPTION: King's skinks are covered with dark, shiny and quite fine scales. These are often attractively decorated with small white, cream or grey spots. The head is usually paler than the body. The undersides range from white, grey or olive-yellow in colour, while the tail is long, rounded and tapering. These animals have strong, thick bodies and relatively thickset legs, with long slender toes. They grow up to 40 centimetres long.

HABITAT: These skinks are widespread on islands throughout south-western WA, but are also found in mainland habitats such as jarrah forests and coastal heathlands.

LIFE HISTORY: King's skinks on Penguin Island are often seen hunting for birds' eggs in the undergrowth or in caves. They also eat young birds and insects, as well as the flowers of pigface and introduced dandelions. It is likely that the introduced house mice found on the island are also taken. King's skinks will rummage through seaweed for other edible delicacies. There are usually two young, which are born alive.

Photo – Babs & Bert Wells/CALM

BLUE MANNA CRAB

(Portunus pelagicus)

Although this species is commonly known as the blue manna crab, the blue colouring is found only in the male. The female is sandy brown, but both females and males have extensive white markings. This bottom-dwelling carnivore will scavenge dead drifting food. However, most of its diet consists of bivalve molluscs, crustaceans, polychaete worms and brittle stars.

DESCRIPTION: The claws are long and slender, and the fifth pair of legs has been modified to form a set of paddles used in swimming. Adult crabs usually weigh about 500 grams, with a maximum weight of up to one kilogram.

DISTRIBUTION AND HABITAT: The blue manna crab is the only ten-legged crustacean found around the entire Australian continent. It is also found in East Africa, through the Indo-Pacific islands to Japan and Tahiti.

LIFE HISTORY: Adults enter estuaries when waters become saline, during early spring and summer, to take advantage of the abundance of food. While the female blue manna mates only once a year, she has an extraordinarily high reproductive output. At a given time she may lay up to two million eggs. In WA the peak spawning period is in January and February. At this time, the female will leave the estuaries and rivers to release the eggs in the open ocean, a strategy which may help to broaden the distribution of the species. Mortality of these eggs is extremely high, and less than one per cent will survive to make their way back to shallow coastal waters and rivers. Blue manna crabs appear to live up to three years.

CONSERVATION: There are daily bag limits and minimum legal sizes. All females carrying eggs must be thrown back into the water while they are still alive. Contact the Fisheries Department for the latest rules and regulations. Follow a few common sense rules and blue manna crabs will be here to stay.

Photo – Babs & Bert Wells/CALM

WESTERN ROCK LOBSTER

(Panulirus cygnus)

More commonly called crayfish, western rock lobsters spend most of their lives among the limestone reefs and coral ledges off our coast. However, each year many of the juveniles undertake an arduous underwater crawl to the edge of the continental shelf, often in a synchronised mass exodus.

DESCRIPTION: These large, dark red animals have long feelers and have evolved defensive spikes and hard shells to deter potential predators. Despite this, their enemies are numerous and include octopuses, large predatory fish such as jewfish and snapper, sharks and people.

STATUS AND DISTRIBUTION: The western rock lobster is found only in WA, between North West Cape and Windy Harbour.

HABITAT: This species is common on limestone reefs, although it is mainly active at night. If you are prepared to do some careful searching, all you need is a mask and snorkel to observe these fascinating creatures in their natural habitat.

LIFE HISTORY: Feeding mostly at night, western rock lobsters forage for molluscs, worms and small crustaceans. Mature females can carry as many as one million eggs under their tail. When the eggs hatch, larvae emerge and are released into the ocean. The larvae drift in ocean currents for nine to 11 months. During this time they may become widely distributed before currents bring them back towards the coast, when they are about two and a half centimetres long. In late October to early November, after about four years in the protective shelter of inshore reefs, rock lobsters moult from their red shell to a light pink colour, and during this time are referred to as "whites". From late November these "whites" migrate to deeper water, some to the edge of the continental shelf, to disperse into breeding stock areas. One individual tagged by Fisheries Department scientists in 44 metres of water was caught 74 days

Photo – Dave Burton

later in 180 metres of water 280 kilometres away. A year or two after this migration the rock lobsters reach sexual maturity.

CONSERVATION: Rock lobsters are the basis of an important commercial fishery. Amateur fishers must have a license that covers a defined season, so if you plan to take them please ensure you comply with the current fishing regulations.

ROE'S ABALONE

(Haliotis roei)

Roe's abalone is common on the reefs around Penguin Island. The ear-shaped shell often has a rough, pinkish exterior, but the inside layer is very beautiful, with a pearly texture and lustrous silvery appearance. These shells are often washed up on the beach. Roe's abalone is the most common of five species that live in the Shoalwater Islands Marine Park.

DESCRIPTION: These molluscs have a flattish, ear-shaped shell that grows up to 12.5 centimetres long. Each animal has a row of small holes near the edge of the rough, spirally-coiled shell. The shell is often covered with algae when the animal is alive. The body is large and fleshy and attached to the reef by means of a broad muscular foot. It has a small head with sensory tentacles bearing simple eyes.

OTHER NAMES: Ear shell, muttonfish.

DISTRIBUTION: Roe's abalone are found from Shark Bay in WA to western Victoria. They inhabit shallow intertidal platforms up to four metres deep, preferring exposed rough water areas, where currents generated by wave action or tides increase the chance of bits of weed brushing past their mouth.

LIFE HISTORY: Abalone cling to wave-tossed reefs with their adhesive muscular foot. They are capable of movement but generally stay put. Roe's abalone is capable of spawning all year round, but in WA it does so mainly between July and December. The larvae drift freely in the open ocean for several days before settling, generally on coralline algae. The holes in this algae provide both shelter and nutrition. Adult abalone scrape algae from rocks and consume pieces of drifting weed. They may live up to 10 years.

CONSERVATION: Roe's abalone is taken by both commercial and amateur fishers under licence within a defined season. If you

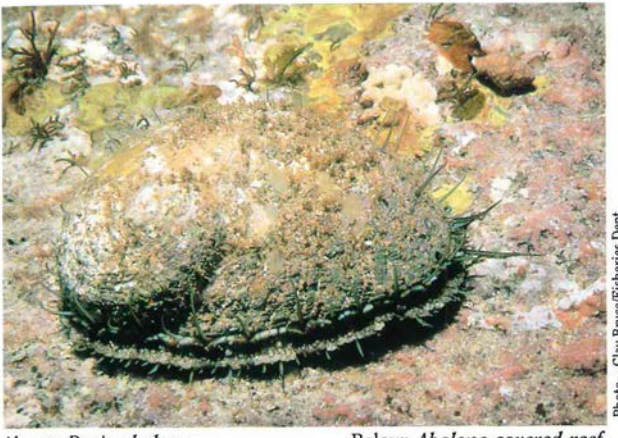


Photo – Clay Bryce/Fisheries Dept.

Above: *Roe's abalone*

Below: *Abalone-covered reef*

Photo – Courtesy of Fisheries Dept.

plan to take them please ensure you are familiar with the current fishing regulations and comply with them.

SEA ANEMONES

Sea anemones are carnivores that adopt an unusual guise. Their beautiful flower-like tentacles have a sinister purpose. Small fish, snails or crabs that blunder into these waving fronds are soon paralysed by the stinging tentacles, engulfed by the central mouth and digested within the tube-like body.

DESCRIPTION: Anemones consist of a tube-like column with a muscular disc at the base for attachment, and a flared oral disc with eight or more tentacles. They are usually brightly coloured, adopting shades of white, green, blue, orange, red or mauve. The most common anemone in the intertidal zone around Penguin Island is the cherry anemone (*Actinia tenebrosa*), a brilliant red animal that withdraws its tentacles when the tide is low, resembling a cherry.

DISTRIBUTION AND HABITAT: Anemones attach themselves to rocks and underwater structures by the muscular disc at the base of the body, although some species burrow into mud or sand. The cherry anemone is strictly intertidal and ranges throughout the cool waters of southern Australia.

LIFE HISTORY: The tube-like body of anemones is divided into a number of partitions containing the digestive organs, muscles and gonads. Waste is passed out through the mouth, which is situated at the top of the body in the centre of the long tentacles. Sea anemones are capable of sexual and asexual reproduction. In sexual reproduction, the eggs may either be fertilised internally and brooded or released into the water to be fertilised. The cherry anemone produces fully developed young which are ejected through its mouth by contractions of the column. The young usually settle close to the parent and, as a result, these animals are often seen in groups. Although they appear to be fixed to the bottom, anemones can be quite mobile. By creeping along the bottom with its muscular disc, the cherry anemone

Photo – CALM Marine Operations

has been observed to move up to 21 centimetres each day, although over a two year period most individuals barely move at all.

OTHER ANEMONES: Two other anemones, the reef anemone (*Isanemonia australis*) and the speckled anemone (*Oulactis macmurrichi*) are also common in the shallows of the Shoalwater Islands Marine Park. The reef anemone has a similar body form to the cherry anemone, except that the tentacles are green. If two anemones come too close to each other, they will fire their stinging tentacles at each other in an attempt to drive the other away. The speckled anemone is common in rock pools, where its body column is buried under several centimetres of sand. As a result, only the tentacles and oral disc are visible. The greyish-green tentacles are often covered with bits of sand and shell, possibly helping to camouflage the animal.

SEA URCHINS

Many species of sea urchin are found in the waters of the Shoalwater Islands Marine Park, including regular urchins, heart urchins and sand dollars. These unusual animals provide an endless source of fascination. They have a skeletal shell, known as a test, which is often found washed up on beaches after the animal has died.

DESCRIPTION: Regular urchins are spherical animals with a case or shell of close-fitting limy plates. These plates have a covering of delicate living skin. Movable spines also perform an important defensive role in some species. The mouth is always on the bottom of the body. The tips of five teeth are often visible, but these are only part of a complicated jaw apparatus known as Aristotle's lantern. The most common urchins around Penguin Island are the rock urchin (*Heliocidaris erythrogramma*), which varies in colour but has spines about three centimetres long, and the urchin *Holopneustes porosissimus,* which is greenish-grey but has a dense covering of very short reddish spines. Sand dollars are so-named because they are exceptionally flat and usually circular. Heart urchins are oval-shaped. Unlike regular sea urchins, the tests of sand dollars and heart urchins are clothed with many small spines, although they have the same basic structure as those of regular sea urchins. However, both of these urchins are rarely seen alive, as they burrow into the sea floor.

HABITAT: Sea urchins are most common in intertidal habitats and on shallow reefs, but have been found as deep as 7000 metres. Rock urchins usually live in hollows and cracks of solid rock, though young animals are often found under stones. The urchin *H. porosissimus* lives mainly among fronds of seaweed, especially kelp.

LIFE HISTORY: These animals are closely related to starfish, sharing the same five-fold symmetry, and they too move about

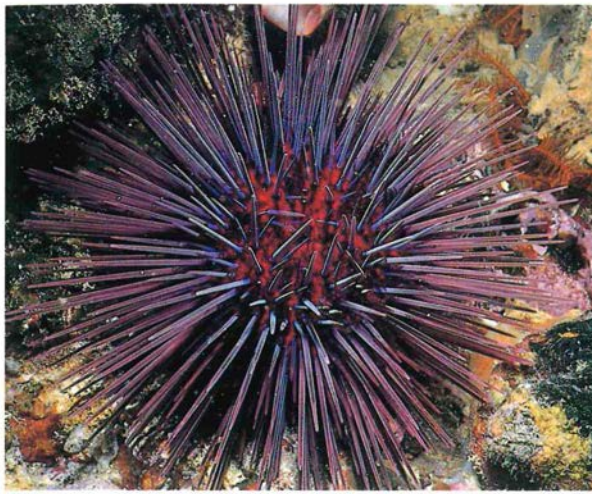


Photo – Duncan Dodd

on hundreds of hydraulically-operated tube feet. Starfish and sea urchins are from a group known as echinoderms, a word that means "spiny skins". Sea urchins use their teeth to scrape up kelp and green algae growing on rocks, and this forms the bulk of their diet. Most sea urchins reproduce by releasing the egg and sperm into the water column, where fertilisation takes place. Some species also brood their eggs, using their spines to hold the eggs in position. People and fish are one of their main predators and they have been a source of food in some countries for centuries. In some parts of the world, sea urchins are also thought to be powerful aphrodisiacs.

OCTOPUSES

The name octopus comes from *Octopoda*, which means "eight-footed". They are molluscs and, along with their close relatives the squids and cuttlefish, are the most highly developed invertebrates, with a well developed brain and eye structure. Around Penguin Island, at least two species of octopuses can sometimes be seen in rock pools.

The common octopus (*Octopus* sp.) grows up to one and a half metres and has no hard parts, except for its parrot-like beak. When disturbed or attacked, octopuses will eject a cloud of ink which will hopefully distract the predator and allow them to escape. They usually crawl along the sea floor but are capable of swimming for short distances by forcing water through their bodies. They are usually well camouflaged and can change colour to merge into their surroundings.

They are bottom-dwelling creatures and hide themselves under rocks and other debris and in crevices. A pile of recently dead shells is usually a tell-tale sign of their lair. Most octopuses have short lives and only live a year or so.

One small but colourful creature to be wary of is the blue-ringed octopus (*Hapalochlaena maculosa*). It kills its prey with a potent toxin injected with the bite, and, although such cases are very rare, has killed people. The toxin causes paralysis and respiratory failure.

Blue-ringed octopuses grow up to 12 centimetres across, living in reef flats and tidal pools. They can be recognised by their brilliant blue rings when disturbed. Be cautious when handling dead shells, or discarded cans and bottles, and when exploring tidal pools or underwater crevices and caves. If you are unlucky enough to be bitten you should keep the injured limb still, put direct pressure on the wound and seek medical aid urgently.

Photo – Duncan Dodd

SEAGRASSES

All animal life in the ocean is in some way linked to marine plants. Seagrasses, in particular, provide an important food source and shelter for marine organisms. As you cross to Penguin Island, take some time to look below the surface at these carpets of life.

DISTRIBUTION: Seagrasses grow in sheltered and shallow waters throughout the world, except for Antarctica. About 50 species of seagrass grow worldwide. Australia has 31 species, more than any other continent, and 14 of these grow in the Perth region. New Zealand, in stark contrast to Australia, has only two species of seagrass growing in its waters.

DESCRIPTION: Although often confused, seagrasses differ from seaweeds. Seaweeds are simple plants with no root systems or flowers. They require a firm surface, such as a rock, to grow on. Seagrasses, in contrast, are true flowering plants that have a root system that grows on and stabilises sand. The seagrass meadows around Penguin Island are mainly ribbon weed (*Posidonia* spp.) and wireweed (*Amphibolis* spp.), though *Halophila ovalis* and *Heterozostera tasmanica* are also common. Ribbon weed has long, ribbon-like leaves that provide a handy attachment point for many plants and animals. They have an extensive rhizome root system, with up to 90 per cent of the plant below the sand. Wireweed has branched woody upright stems up to two metres long, with clusters of leaves at the end of each branch.

LIFE HISTORY: Ribbon weed produces flowers with both male and female parts. These flowers produce floating fleshy fruits from December to January which are washed up on beaches around Rockingham. Wireweed, in contrast, has separate male and female flowers. The male flower releases pollen into the water column, which drifts until reaching a female flower. The seedling then continues to grow on the parent plant for several months until it breaks away to form a separate plant.

Photo – Duncan Dodd

ECOLOGICAL ROLE: Seagrass meadows provide an important food source and habitat for hundreds of animals and help stabilise the sea floor. Such beds attract a wide range of animals, such as tiny worms, molluscs, echinoderms and crustaceans. These in turn attract larger animals and so begins a complex food web. The importance of this cannot be underestimated. Seagrass beds provide nursery areas for many commercially important species, including the western rock lobster, tiger prawn and herring.

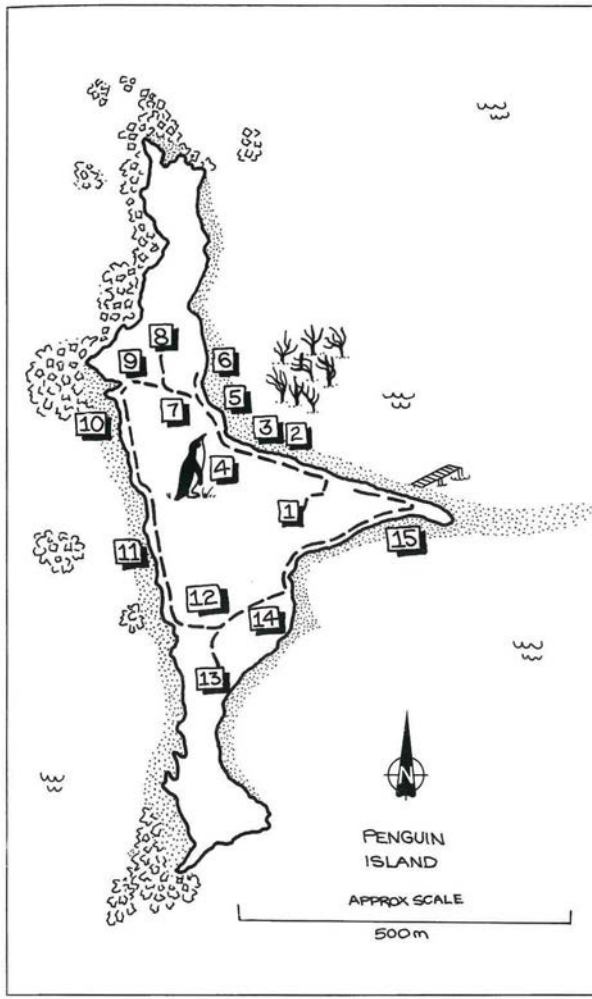
PENGUIN ISLAND NATURE WALK

Up to 80,000 people visit Penguin Island each year, and this number is steadily increasing. The island is only open during the day but this was not always the case. In 1969 the lease of the island was sold to a syndicate which built some holiday houses for their own use and for renting to overnight visitors. In 1984 the National Parks Authority took over the island and bought out the lease in 1987. CALM now administers and manages the island for the National Parks and Nature Conservation Authority. The majority of the buildings have been removed. Much of the Penguin Island Conservation Park is a big, vegetated sand dune and is very fragile. Degradation caused by uncontrolled access in the past has been largely restored. The boardwalks and walkways that criss-cross the island have helped the vegetation to grow back. Putting down brush wood on eroded areas has also allowed revegetation.

1. Begin the walk at "The Penguin Experience" viewing and interpretation facility. This facility allows visitors to learn about penguins and see them without disturbing the wild population on the island. Penguins lay two eggs but usually only raise one young - the other is rejected and it dies. The birds that live in this facility have either been rejected by their mothers as chicks, and raised by wildlife carers, or nursed back to health after injury. They would otherwise have died. They have now become so used to people that they would probably be unable to survive in the wild.

2. The picnic area is just in front of the viewing and interpretation facility. Norfolk Island pines, Rottnest Island tea trees (*Melaleuca lanceolata*) and watered lawns were not part of the original flora.

3. Take a quick detour down to the beach. Offshore seagrasses form meadows around our coasts and grow extensively in the Shoalwater Islands Marine Park. They provide shelter for many varieties of small sea creatures including the cobbler, a fish with venomous spines on its fins.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PENGUIN
ISLAND
APPROX SCALE
500m

4. Return to the boardwalk. In nearby vegetation you may well see a penguin in its burrow or beneath the boardwalk. The bird-sized paths you can see through the bushes are made by the penguins and you can also make out their tunnels in many places. However, avoid disturbing the birds and the vegetation and keep to the boardwalk. Penguin Island is thought to be the largest breeding colony for these birds on WA's coast. The little shearwater (also known as the muttonbird) and the white-faced storm petrel also nest in burrows on the island.

5. Caves fringe the beach. Seaforth McKenzie, a colourful local character lived on the island from about 1918 until 1926. He enlarged and used the island's caves for many purposes. One was a library, for instance; another was a store room. McKenzie encouraged visitors and kept rations in one of the caves. There was also a well, that was formed from the seepage of rainwater through the limestone crevices, where people could place their milk cans and butter to keep them cool. He moved to Mersey Point in 1926.

6. Bridled terns (see page 20) are among five species of tern found on Penguin Island. They nest in the hollows of rocks. Their eggs have a slightly triangular shape to prevent them from rolling out of the nest scrape. Up to 1000 pairs of these terns have been recorded on Penguin Island. However, competition from silver gulls may be responsible for a decline in the population. Gulls have increased from 200 pairs to more than 3000 pairs in the last 50 years, due to the availability of additional food sources at places such as Rockingham tip and hand feeding by people.

7. Go back along the beach to the steps and walkway which lead to the northern path. Take a close look at the plant species growing here. Use the photographs on page 55 to identify sea spinach (*Tetragonia decumbens*) and berry saltbush (*Rhagodia baccata*). Sea spinach is very good habitat for penguins.

8. Move up to the summit lookout on the northern path. From the lookout, you can clearly see Shag Rock, and then behind

Photo – Stephanie Crawford

Above: *Sea spinach*

Below: *Berry saltbush*

Photo – Terry Goodlich

it Seal Island, which has a sandy beach used by Australian sea lions to rest between their long fishing trips (see page 30). To avoid disturbing these mammals, visitors are not permitted to land on Seal Island. However, this policy is as much to protect people as it is to protect the sea lions, which can deliver a painful bite if angered.

9. You may see some of the reptiles that live on Penguin Island. There are no snakes on the island but several reptile species live here, including legless lizards and skinks. King's skinks are the largest and are often seen searching for birds' eggs in the undergrowth or in the caves. They also eat young birds.

10. As you move down to the beach, look at the pigface (*Carpobrotus virescens*) that grows near the walkway. This species has fleshy leaves up to 65 millimetres long and pinkish-mauve flowers. The leaves are used to store moisture in the harsh dune environment. King's skinks eat the flowers of pigface and introduced dandelions.

At the beach you can see the limestone rocks that form the core of Penguin Island. The limestone may have a hard crust or form hollow circular formations within the rocks called solution pipes. These features withstand erosion, while softer areas are weathered away to form caves or archways. If these formations collapse, rock slopes are formed.

Look at the rocks close to the sea for a covering of cyanobacteria (a blackish film on the surface) and for small sea shells. You may also notice rock pools in which sea anemones, chitons and sea shells may be found.

11. Shells found here may include those of abalone and chitons. Strict regulations control the capture of live abalone and these shellfish can only be taken under licence during a limited season. A large turban shell (*Turbo torquatus*) may have scars on the surface where small limpets have adhered to it. These limpets feed on the host shell's mucus and body wastes. In one species the largest of these limpets (*Hipponix*) is female and the smaller ones are males. Should the female die or move away there is competition

Photo - Terry Goodlich

Left: *Sea rocket*

Photo - Stephanie Crawford

Right: *Native rosemary*

among the smaller males. The strongest will then grow in size and change to a female.

You may also find fan shells (parts of bi-valves). Some of these may have neat round holes in them. This is as a result of the soft meaty occupant having been eaten by another mollusc, which drills a hole with a tongue-like structure that is coated with teeth. Acid digestive juices aid the process.

12. Turn left up the southern path. There is a different vegetation community in this part of the island. Use the photograph above to find native rosemary (*Olearia axillaris*), a silver plant with aromatic leaves. Squeeze a leaf and then smell your fingers. This plant was used by early settlers as a herb. Sea rocket (*Cakile maritima*), a small plant with four mauve petals, grows low down on the beach. The area is also infested with dune strapweed (*Trachyandra divaricata*).

13. Walk up the path to the lookout. This is the highest point on the island. From this vantage point, you can clearly see that Penguin Island is part of a chain of islands that originally

Photo - Terry Goodlich

Above: *Pigface*

formed as a row of coastal sand dunes when sea levels were lower. The sea level was 130 metres lower 18,000 years ago, but rose to two metres above the present level 5,000 years ago. As a result, WA's coastline is constantly changing. At one time Penguin Island was part of the mainland and more recently it was virtually submerged. The lookout overlooks Warnbro Sound. Cape Becher, south of Rockingham, is the southernmost point of the Shoalwater Islands Marine Park. The platform reefs you can see on the western side of the island have been cut by constant wave action against the limestone and possibly by grazing marine animals.

14. Walk back along the southern path, turn right and go down towards the beach. The vegetation here is dominated by summer-scented wattle (*Acacia rostellifera*), a shrub about three metres tall. Old man's beard (*Clematis microphylla*), an attractive creeper with fluffy white seeds, climbs through the wattle.

15. Descend to the beach, where penguins emerge shortly after the sun goes down. There is an old wreck, the *Belle of Bunbury*, just offshore. This 42-tonne coastal schooner was wrecked in December 1886. It struck a rock just off the island and

sank in about six metres of water. Six tonnes of potatoes and 70 bales of wool, but no lives, were lost.

A bar of sand, or tombolo, connects Penguin Island with the mainland. Similar bars link Seal Island and Bird Island with the mainland. Point Peron was once an island but was captured by the mainland.

As you approach the spit, you will notice the sea birds standing there, mainly gulls and crested terns. Forty-eight species of birds have been described on the island. Pied oystercatchers, roseate terns, Caspian terns, crested terns, little pied cormorants, buff-banded rails and singing honeyeaters nest on the island. So, unfortunately, do feral pigeons. You may see some wading birds, such as ruddy turnstones, which may be migrants from as far afield as Siberia. Arctic and pomerine skuas (jaegers) can sometimes be seen over the sea, chasing gulls. These birds are larger than gulls and are magnificent fliers. They feed by chasing gulls which, having been disturbed and wishing to lighten themselves to get away, regurgitate the food they have just eaten. This is caught by the skuas and consumed with gusto.

This will bring you back to the jetty. Near the jetty you can see spinifex (*Spinifex longifolius*) growing up to a metre high.

Below: *Ruddy turnstones*

Photo – Babs & Bert Wells/CALM

NORTH PENGUIN ISLAND SNORKEL TRAIL

This shallow (two to five metres) and very sheltered area is an ideal place to explore interesting underwater ledges and overhangs, lumps, low broken reef and seagrass areas. It can be dived in most weather conditions and there is no need to use SCUBA or launch a boat. It is a good area for beginners, but more experienced divers will also find it fascinating. You can reach the entry point by walking around the rocks along the north-eastern side of the island. Take extreme care if getting to this point by foot and do not venture off the water's edge into the seabird breeding areas. The underwater world around the island is protected by the Shoalwater Islands Marine Park, so be careful to look but not touch.

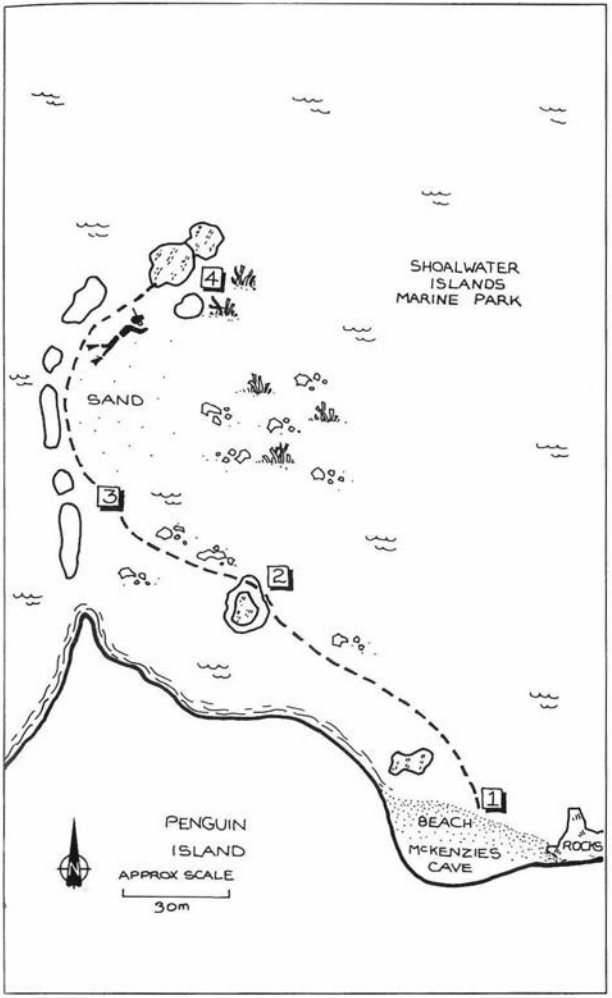
1. A small sheltered beach near a collapsed cave, known to locals as McKenzie's Cave, is the starting point. Immediately off the beach is a reef platform that is overgrown with seagrass and algae. Beyond this is a sandy area and low broken reef. Head towards the small limestone rock about 30 metres from shore.

2. As you approach the rock, the broken reef becomes more prevalent. Just around it, there are interesting ledges and reefs inhabited by splash zone species such as chitons and snails. There is a large seagrass patch to the east of the rock.

3. Swim in a westerly direction and locate a number of areas of upstanding reef platform. Follow these platforms, which have formed a gentle curve, towards a large rock on which birds such as cormorants often sit between fishing forays. Fish species, such as wrasse, and invertebrates, such as sponges and starfish, shelter in the dense vegetation that has grown over the reefs.

4. The rock is also surrounded by high broken reef to just below the surface – an interesting area for exploration.

5. You can either follow the same route back or swim directly back to the beach over the low broken reef, seagrass patches and sandy areas.


SHOALWATER
ISLANDS
MARINE PARK
SAND
4
3
2
1
BEACH
McKENZIES
CAVE
ROCKS
PENGUIN
ISLAND
APPROX SCALE
30m

SIGHTING			
	DATE	TIME	LOCALITY
little penguin			
Australian pelican			
silver gull			
crested tern			
Caspian tern			
bridled tern			
pied cormorant			
pied oystercatcher			
sooty oystercatcher			
giant petrels			
bottlenose dolphin			
Australian sea lion			
marine turtle			
King's skink			
blue manna crab			
western rock lobster			
Roe's abalone			
sea anemones			
sea urchins			
octopuses			
seagrasses			
sea spinach			
berry saltbush			
sea rocket			

RECORD

REMARKS

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Photo – Duncan Dodd

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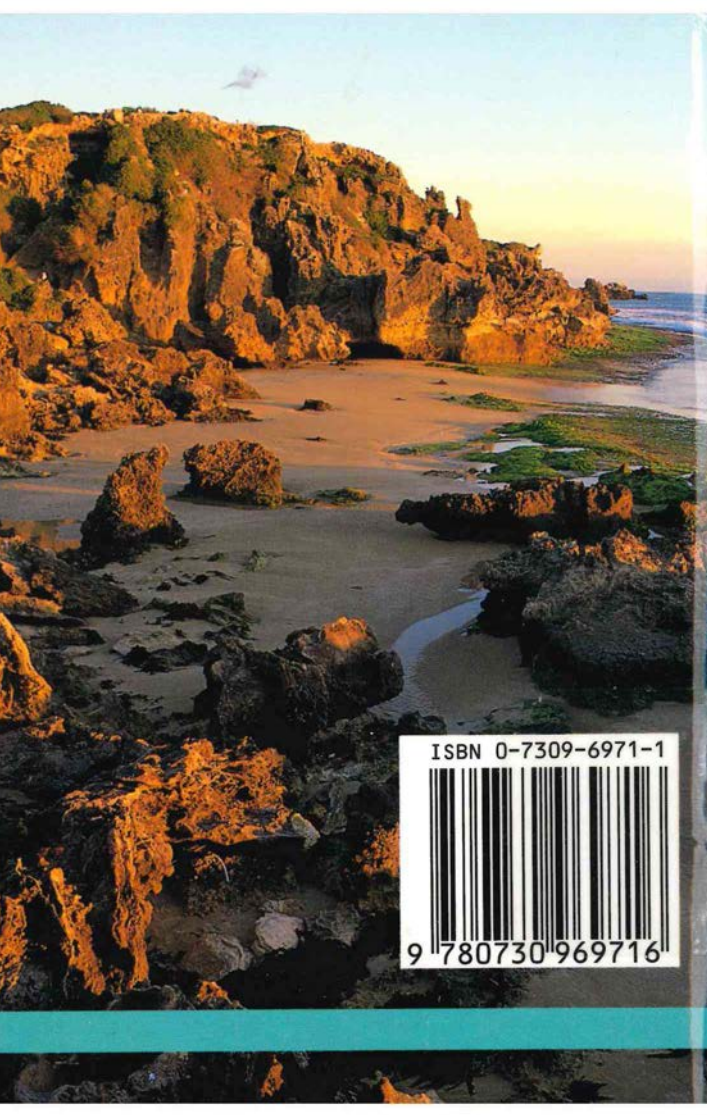

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