Marine wildlife of WA's north-west

IDENTIFICATION GUIDE

GOVERNMENT OF WESTERN AUSTRALIA

Department of **Biodiversity, Conservation and Attractions**

PARKS AND WILDLIFE SERVICE

Protecting Western Australia's marine wonders

The marine waters between Ningaloo Marine Park and the Northern Territory border are of great significance. The Ningaloo Coast was World Heritage-listed in 2011 for the area's outstanding natural beauty and exceptional biological richness. The Pilbara Islands and coastal waters provide important habitat for marine turtles, marine mammals, shorebirds and seabirds. The Kimberley region is one of the last great wilderness areas remaining in the world. This guide has been produced by the Department of Biodiversity, Conservation and Attractions (DBCA) to provide information about marine parks in WA's north-west and significant or threatened fauna in this region.

Top tips for conserving marine life

- When boating, **'go slow for marine life below'**, especially over seagrass beds, shallow and muddy areas and in channels where dugongs, turtles and other marine wildlife feed.
- **Anchor only in sand** to protect fragile reef, sponge and seagrass communities.
- Support a **'clean marine'** environment and prevent marine animals from suffering a slow death. Take your rubbish (such as discarded fishing gear, bait straps, plastic bags and bottles) home and if you find any material floating at sea or along the coast, please pick it up.
- When in a marine park **know your zones**. Some zones are set aside as sanctuaries where you can look but not take (these areas are fantastic spots to go snorkelling, as they have especially abundant marine life).
- If you find a stranded, sick or injured dolphin, dugong, turtle, whale or seabird, please call the department's **Wildcare Helpline on (08) 9474 9055**.
- If you find a tagged turtle or other animal, please note the number and contact your closest DBCA Parks and Wildlife Service office.
- **Fish for the future!** Abide by fish size, bag and possession limits set by the Department of Primary Industries and Regional Development Fisheries Division and help protect our fish, some of which are unique to WA.
- **Stay at least 100m from whales**. Slowly approach whales parallel to their direction of travel and avoid the area directly in front or behind the whale.

Cover Nesting turtle. *Photo – Paul Bester* **This page** Manta Rays. *Photo – Johnny Gaskell*

Marine parks – protecting oceans of life

Western Australia's coastline spans more than 13,500km and is home to some of the world's most remarkable ecosystems and marine wildlife, including massive whale sharks, humpback whales and several threatened species of marine turtle. Many of the State's marine plants and animals are found nowhere else in the world.

Our marine areas are unique and rival their terrestrial counterparts in scenic grandeur. They include Australia's largest fringing reef at Ningaloo Marine Park and the spectacular Muiron Islands Marine Management Area. The Montebello Islands Marine Park and nearby Barrow Island Marine Park protect more than 62,500ha of ocean surrounding hundreds of low-lying offshore islands and islets fringed with coral reefs and populated with colourful tropical fish and other marine animals. The addition of six marine parks in the Kimberley has trebled the area of marine parks and reserves in Western Australia, from about 1.5 million hectares to more than 4.6 million hectares.

Marine parks protect natural features and aesthetic values while enabling recreational and commercial uses that do not compromise conservation values. Within marine parks there may be four types of management zones:

- **Recreation zones** provide for conservation and recreation, including recreational fishing.
- **General use zones** are managed to conserve natural resources while allowing sustainable commercial fishing, as well as petroleum exploration and production where they will not affect sensitive marine habitats. Most recreational activities can be undertaken in these zones, which form the majority of most marine parks.
- **Sanctuary zones** ('no take' areas) provide the strongest form of protection for the marine environment. The public is encouraged to visit and enjoy sanctuary zones, whether by diving, boating or simply exploring rock pools.
- **Special purpose zones** are managed for a particular use or issue, such as protection of habitat or nursery grounds, seasonal events such as whale watching, or a particular type of commercial fishing. Commercial and recreational activities may be allowed if compatible with the primary purpose of a special purpose zone.

Download brochures (including detailed zoning maps) on all of WA's marine parks at exploreparks.dbca.wa.gov.au.

Marine Parks WA app

Discover Western Australia's 17 marine parks with smart phone apps for iOS and Android devices.

The 'where am I?' function means you can see which marine park zone you are in and what activities you can enjoy in each particular area, even when offline or out of mobile phone range (as long as you've downloaded the map before your trip).

Ningaloo Marine Park. *Photo – Tony Howard*

WA marine parks and reserves

Islands – an important refuge

Western Australia's islands are important refuges for many threatened species. They provide habitat free from many of the pressures (such as introduced predators, bushfires, or four-wheel-driving on beaches) and types of disturbance (people walking pets on beaches, light pollution) found on the mainland. Islands are significant breeding and nesting areas for marine turtles, shorebirds and seabirds. Many islands are nature reserves and are protected under the *Conservation and Land Management Act 1984*.

The sandy beaches of islands scattered between Dirk Hartog Island National Park and the Kimberley region provide important nesting habitat for five species of marine turtle (flatback, green, hawksbill, loggerhead and olive ridley). The flatback turtle nests on many Pilbara islands including Locker, Thevenard, Barrow and the Montebello group, and the mainland coast near Onslow, Port Hedland, Eighty Mile Beach Marine Park and Cape Domett in the Kimberley. This species only nests on Australian beaches.

Migratory shorebirds including the critically endangered bar-tailed godwit, eastern curlew, curlew sandpiper and the great knot forage and roost on the intertidal flats, mangroves, sandy spits and beaches of many Pilbara islands. Adult shorebirds are usually seen from August through to May each year, while the juveniles may remain year-round. Seabirds such as roseate, caspian and fairy terns nest on many of the islands during winter, at times in colonies numbering in the thousands.

Protecting island habitats is crucial for the survival of threatened species which rely on them.

- **No uninvited visitors**. Introduced species have caused many extinctions of island flora and fauna worldwide. Keep your boat clean inside and out. Ensure it is free from soils, seeds, rodents and insects and the hull fouling is kept to a minimum.
- **Pets may stress**, injure or kill turtles, shorebirds and seabirds, so leave them at home.
- **Camp only on islands where camping is permitted**. Minimise the use of lights at night, as this may disturb turtles and birds. Use a portable fuel stove (not heat beads) as an alternative to campfires. Contact the local DBCA Parks and Wildlife Service office for more information.
- **Minimise disturbance**. Keep visits ashore brief and avoid areas used by turtles, shorebirds and seabirds for nesting, resting and feeding.
- **Leave no trace**. Take rubbish home and dispose of it properly.

Sunday Island. *Photo – DBCA*

Management of our unique marine animals

The Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and *WA's Wildlife Conservation Act 1950* allow species, subspecies and varieties of native wildlife to be listed as threatened or specially protected if they are at risk of extinction, are rare, or are otherwise in need of special protection. Species featured in this guide may have the following conservation status listed under the EPBC Act:

- **Critically endangered** – at extremely high risk of extinction in the wild.
- **Endangered** – at very high risk of extinction in the wild.
- **Vulnerable** – at high risk of extinction in the wild.

Many species in this guide are also granted protection in Australia under the EPBC Act as a '**migratory**' species due to being listed under international conventions and agreements that Australia is party to, '**marine**' species which have been specially listed by the Minister for Environment, or '**cetacean**' in which all species of whales and dolphins are protected in Australian waters.

Western Australia's Wildlife Conservation Act also provides for protection of species deemed at risk from extinction across their range. This allows for protection of species that may not yet be listed as threatened nationally, but in WA may be facing significant threats such as population decline, are rare, or deemed to need special protection.

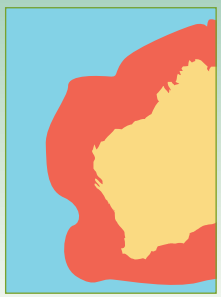
Green turtle. *Photo – Johnny Gaskell*

Humpback whale

(Megaptera novaeangliae)

Vulnerable

Description Humpback whales have distinctive throat grooves and bumps on their heads (tubercles). They have very long pectoral fins with knobs on the front edge and a humped dorsal fin that shows as the whale arches its back when it dives. They are blackish, with white undersides and sides. The underside of the tail fluke is usually white with black patterning. Adults are approximately 12-16m long, with females generally slightly larger than males. Adults may weigh up to 45 tonnes.



Habitat and behaviour From May to August, humpback whales migrate north to calving grounds between Ningaloo Marine Park and the Kimberley, and between September and November they travel south to their feeding grounds in the Antarctic. As they are often accompanied by calves on the southern migration, they tend to stay much closer to the coast than they do when heading north. Important resting areas during this migration include the Lacepede Islands, Pender Bay, Eighty Mile Beach Marine Park, Nickol Bay, Exmouth Gulf, Shark Bay Marine Park and Ngari Capes Marine Park. Whales are sensitive to disturbance, so boats must not approach closer than 100m, or separate a group, or mother and calf.

Photo – Doug Coughran

Other large whales

Blue whale (*Balaenoptera musculus*)

Endangered

The largest living animal on Earth, the Antarctic blue whale averages 25-26m long, but females can reach more than 30m and weigh more than 160 tonnes. The pygmy blue whale (*Balaenoptera musculus brevicauda*), the cousin of the Antarctic blue whale, is occasionally encountered off the Ningaloo coast and reaches about 24m in length. The huge size, mottled bluish-grey colour and small stubby dorsal fin positioned well back on the body distinguish blue whales from other species.

Sei whale (*Balaenoptera borealis*)

Vulnerable

These threatened whales are rarely seen. They are long and streamlined, with a single central ridge on the top of the body and a bi-coloured head. Adult sei whales can grow to 17-21m.

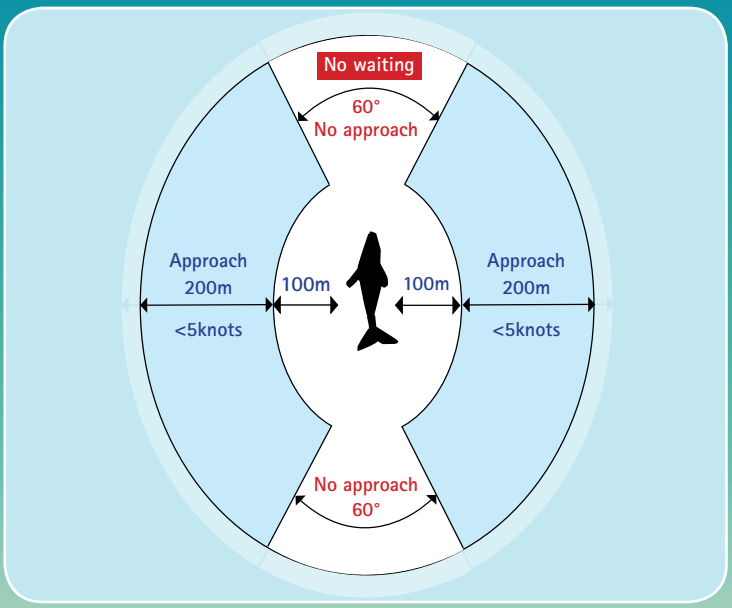
Bryde's whale (*Balaenoptera edeni*)

This species is distinguished from the sei whale by the three ridges which run from the front of the head to the blowhole. It has broad, notched tail flukes, pointed flippers and a dorsal fin set well back along the slender body. It is dark grey, with white patches on the chin and throat. Adults may reach up to 14m long. The blow rises in a cloud 3-4m high.

Dwarf minke whale (*Balaenoptera acutorostrata*)

The smallest of the seven great whales at about 8m long, minke whales are regularly seen off WA's coast, particularly at Ningaloo. The most distinctive feature is the narrow, sharply triangular head on which there is a single raised ridge. The pectoral fin is white at the base. Minke whales arch their backs while diving, but do not raise their tail flukes. Their blows are about 2-3m high. They are inquisitive and will approach boats.

From top Pygmy blue whale. *Photo – Dani Rob*, Sei whale, Bryde's whale. *Photos – Mark Carwardine/ Oceanwidelmages.com*, Dwarf minke whale. *Photos – Holly Raudino/DBCA*



Whale watching protocol

A vessel within 300m of a whale must not approach a whale from within an arc of 60 degrees of the whale's forward direction of travel, or an arc of 60 degrees behind the whale (the opposite of direction of travel).

A vessel must not approach a whale within 100m.

Where a whale approaches a vessel and the distance between the whale and the vessel becomes less than 100m (known as the 'contact zone'), the vessel master must place the motor/s in neutral or move the vessel, at less than five knots, away from the whale until the vessel is outside the contact zone.

A vessel must not block the direction of travel of a whale.

A vessel must not cause a whale to alter its direction or speed of travel.

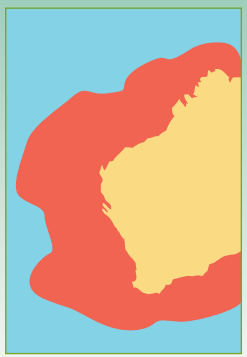
A vessel must not disperse or separate a group of whales.

Swimming with, feeding or touching whales is not permitted. Such actions may cause stress to whales and endanger people. If you are in the water and a whale approaches, you must maintain a minimum 100m distance between yourself and the whale.

Please note the above protocol is for whale watching in Western Australian State waters. Please refer to the National Guidelines for Whale and Dolphin Watching 2017 when whale watching in Commonwealth waters.

Indo-pacific bottlenose dolphins. *Photo – Tim Hunt/Flinders University*

Bottlenose dolphins



Description The common bottlenose dolphin (*Tursiops truncatus*) is largely found in offshore waters, while the coastal Indo-Pacific bottlenose dolphin (*Tursiops aduncus*) is usually seen closer to the coast. Bottlenose dolphins are sleek and streamlined, have a prominent dorsal fin and can vary in size, shape and colour depending on where they are found. In general, they have a dark grey back and light grey belly. The larger common bottlenose dolphin can grow to 2-4m in length and weigh 220-500kg. The smaller Indo-Pacific bottlenose reaches a maximum length of 2.7m and weigh up to 230kg.

Habitat and behaviour Bottlenose dolphins may be seen along the coast, in estuaries and even in rivers, or well offshore in the open ocean. They can be found in all of WA's marine parks. Dolphins eat fish and cephalopods such as squid, octopus and cuttlefish and their predators include orcas, tiger sharks and white sharks. Other risks include entanglement in fishing equipment, boat strikes, habitat destruction and degradation, pollution and disease. It is also possible that the dolphins' key prey species are in decline, reducing the amount of food available to them.

Photo – Holly Raudino

Australian humpback dolphin

(Sousa sahulensis)

Description The most obvious features of this dolphin are the long thin beak, small triangular dorsal fin and distinctive hump under the dorsal fin. The maximum length is less than 3m. Its colour varies by age, with juveniles tending to be darker than adults. The undersides are pale and the dorsal fin may be white in older animals and males. The tail is relatively large.

Habitat and behaviour Though largely tropical, the Australian humpback dolphin is found in some subtropical areas in association with warm currents e.g. Shark Bay. Australian humpback dolphins occur in tropical waters along the coast and around islands, favouring shallow water depths, but they have been sighted at the Montebello Islands some 60km from the mainland, where the water gets to 20m. They also live in mangrove channels, bays and estuaries. They are generally boat shy, do not bowride and spend less time at the water surface than bottlenose dolphins. They are frequently seen in Ningaloo Marine Park and Dampier Archipelago, where they are relatively abundant.

Photo – Marguerite Tarzia

Australian snubfin dolphin

(Orcaella heinsohnii)

Description The Australian snubfin dolphin is dark on top, a lighter shade of brown around the middle and the belly is white. Depending on the light and water colour, this species can look as though it is white to dark brown. It has a rounded forehead with no beak, unlike most other dolphin species in Australia. It has a particularly small, rounded (snubbed) dorsal fin and a distinct crease around the neck, which is quite flexible. The average length of this animal is about 2m. With age, their bodies become very scarred from interactions with each other and sharks.

Habitat and behaviour The Australian snubfin dolphin inhabits rivers, estuaries and coastal waters of northern Australia, from Exmouth Gulf in WA to Queensland. This species is found in groups of up to 20. The largest known population in Western Australia is in Yawuru Nagulagun / Roebuck Bay Marine Park, which is home to about 130 individuals. They are occasionally sighted in Exmouth Gulf and across the Pilbara and thought to be visitors rather than viable populations. Australian snubfins are not known to bowride, but have been observed occasionally leaping from the water. Snubfins are sometimes seen spitting water when capturing their prey.

Other species of whales and dolphins

Orca (*Orcinus orca*)

These stocky, black and white whales have broad flippers and rounded heads. The dorsal fins are extremely high and the straight fins of males may reach 1.8m. Females have shorter, more dolphin-like fins. Males may reach more than 9m in length though females are smaller. They live in pods of up to 40. Orcas are transient in WA waters and often follow migrating humpback whales to feed on the calves and old, sick or injured animals. They are sporadically seen off Ningaloo in winter, preying on the newborn humpback whale calves.

False killer whale (*Pseudorca crassidens*)

This medium-sized whale has a long, slender body and narrow, tapered head with a rounded snout. Its dorsal fin is high and curved and the narrow, tapered flippers have a distinct hump or elbow on the front edge. The body is black with a grey chest, although the sides of the head are sometimes light grey. Average length is 4.5–5.5m. Large pods occasionally visit inshore areas to feed and sometimes strand en masse.

Spinner dolphin (*Stenella longirostris*)

Spinner dolphins have a distinct tri-colour pattern, with a dark dorsal surface, light grey sides and a white underside. The head is slender, with a long narrow beak. They range in length from 1.3–2.3m and weigh from 23–78kg. Spinner dolphins are predominately a pelagic species and occur in tropical and suptropical waters. Large groups are occasionally seen in Ningaloo Marine Park.

Short-finned pilot whale (*Globicephala macrorhynchus*)

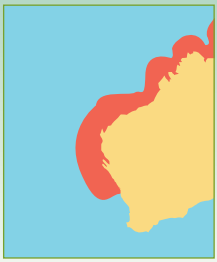
These whales are brownish-grey to black, with a pinkish-grey anchor shape on the undersides, but have shorter flippers (less than 18 per cent of the body length), with less of an elbow than long-finned pilot whales. They grow to 5.5m long. They live in large groups in tropical and subtropical waters and often strand en masse.

Clockwise from left Orca, false killer whale, spinner dolphin and short-finned pilot whale. *Photos – Aimee Jan, Kelvin Aitken/Marinethemes.com*

Dugong

(*Dugong dugon*)

Description Dugongs are light brown, with rotund bodies. Young calves are pale brown. Adults can grow up to 3m long and weigh between 200-400kg. They have a flattened, fluked tail like a dolphin, but (unlike dolphins) have no fin on the upper back. They also have paddle-like flippers and a distinctive head shape. Their nostrils are near the front of the head and they have whiskers to help them locate the seagrass they forage on. Male dugongs have tusks that scar the females' backs following mating.



Habitat and behaviour Dugongs live in the shallow, warm waters of northern Australia from Shark Bay Marine Park in WA, around the north to Moreton Bay in Queensland. Often referred to as 'sea cows', dugongs feed on seagrass, usually in quite shallow water 1-5m deep, but are known to feed on seagrass at depths of over 20m. They are the only herbivorous marine mammals. Their movement over an area can be followed by the sand cloud made as they move along the sea floor. Their movements are usually slow and graceful. Shark Bay, Ningaloo Coast, Exmouth Gulf, Pilbara coast, Eighty Mile Beach and the Kimberley are known areas which support dugong populations.

Photo – Blue Media Exmouth

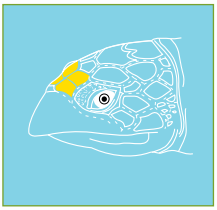
Hawksbill turtle

(*Eretmochelys imbricata*)

Vulnerable

Description This turtle species is best recognised by the prominent beak and thick overlapping scales on the shells of juveniles and younger adults. In older and larger hawksbills the overlapping scales are much less obvious. The shell is variable in colour and ranges from a light honey colour through reddish-brown to almost black. This turtle species can reach lengths of up to 1m and adult females weigh about 50-60kg.

Habitat and behaviour WA has the only large population of the hawksbill turtle remaining in the Indian Ocean. These turtles live near coral and rocky reefs in warm tropical waters. In WA they nest from the Ningaloo Marine Park northwards and there is a major colony on Rosemary Island in the Dampier Archipelago. Nesting may occur all-year-round, but in WA it peaks between October and January. Females only breed once every two to four years or more, but may nest up to six times during the breeding season.



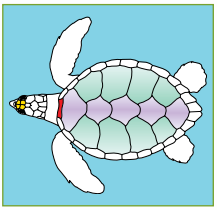


Photo – Adam Williams/DBCA
Far left illustration Unlike green and flatback turtles, hawksbills have two pairs of prefrontal scales (the scales between the eyes highlighted in yellow).

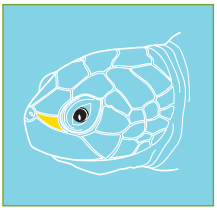
Flatback turtle

(*Natator depressus*)

Vulnerable

Description The flatback turtle has an olive-grey shell. The shell is flattened on top, has four pairs of costal scales (the large scales on either side of the shell) and upturned edges. This large marine turtle reaches up to 1m long and weighs up to 90kg.

Habitat and behaviour Flatback turtles inhabit coastal waters, rather than deep oceans. This species nests only in northern Australian waters, although it also forages in nearby waters in Indonesia and Papua New Guinea. Flatbacks nest on most islands with beaches in the Dampier Archipelago and on Barrow and Thevenard islands. From Onslow northwards, most turtle nesting beaches on the mainland are flatback rookeries, with significant rookeries at Mundabullungana, Port Hedland, Eighty Mile Beach Marine Park and Cape Domett.



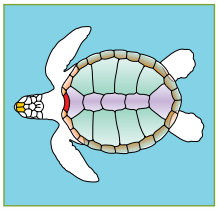


Photo – Felicity Kelly/DBCA **Far left illustration** The flatback is the only turtle to have a pair of preocular scales (the triangular scales between the eyes and the nostrils highlighted in yellow).

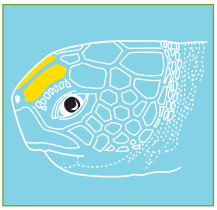
Green turtle

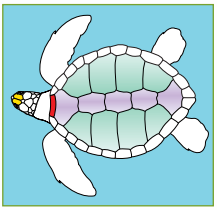
(Chelonia mydas)

Vulnerable

Description The high-domed shell of the green turtle is light to dark green, with grey mottling and with four pairs of costal scales. They are cream-coloured underneath. Adults reach about 1m long and weigh from 100-125kg.

Habitat and behaviour The green turtle is found in all of the world's tropical and temperate oceans and is listed as threatened under WA legislation. Like other sea turtles, the species spends almost its entire life at sea. During the summer months, the females come ashore to nest on some mainland beaches and many offshore islands in northern Australia. The hatchlings dig their way out of the nests and journey to the sea from January to April. Individual female turtles breed once every 3–6 years.





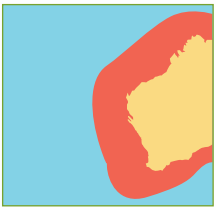


Photo – Ningaloo Turtle Program **Far left illustration** Unlike the flatback turtle, the green turtles have one pair of prefrontal scales (the scales between the eyes highlighted in yellow)

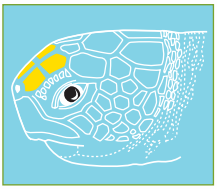
Loggerhead turtle

(Caretta caretta)

Endangered

Description Most loggerhead turtles are less than 1m long and weigh up to 150kg. The huge head is characteristic – the loggerhead is the only turtle where the head comprises at least a fifth of the body length. The shell is more or less heart-shaped, quite elongated and has five pairs of costal scales (shown in green in the illustration). It is usually tan to dark brown above and much lighter below.

Habitat and behaviour The loggerhead turtle is the most threatened turtle which nests in Australia. It mostly inhabits warm, shallow seas and estuaries, but also occurs in the deep ocean where people fish with long lines. Some loggerhead turtles which nest in WA waters migrate to feeding grounds in the Northern Territory and Indonesia. They mate and nest in tropical and subtropical areas including those in WA, predominantly in Shark Bay Marine Park, Ningaloo Marine Park and Muiron Islands Marine Management Area. They begin to breed in about October. Individual females only nest every 2-5 years. The young hatch from late December to early April.



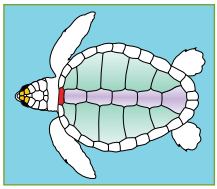


Photo – DBCA. ***Far left illustration*** *Similar to the hawksbill turtle, loggerheads have two pairs of prefrontal scales (the scales between the eyes highlighted in yellow)*

Photo – Colin Limpus **Far left illustration** Similar to the hawksbill turtle, olive ridley turtles have two pairs of prefrontal scales (the scales between the eyes highlighted in yellow)

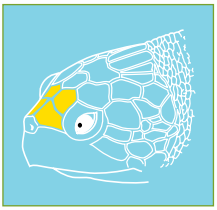
Olive ridley turtle

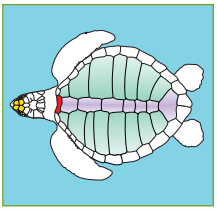
(*Lepidochelys olivacea*)

Endangered

Description The olive ridley turtle is the smallest of Australia's sea turtles and only grows to about 70cm long. The almost circular, greyish-green shell has six or more pairs of costal scales (shown in green in the illustration below). There are two claws on the front and rear flippers.

Habitat and behaviour It has recently been discovered that olive ridley turtles nest in WA, in the Lalang-garram / Camden Sound Marine Park and elsewhere in the Kimberley, but they are very scarce. They live in shallow, protected tropical and subtropical seas, particularly in soft-bottomed areas, where they forage for jellyfish, gastropods, sea stars and small crabs. Turtles found off WA rarely leave Australian continental waters.





Nesting turtles

Turtle watching is becoming increasingly popular. To avoid disturbing turtles, increase their nesting success and support long-term survival of the species, it is important to follow the Turtle Watching Code of Conduct:

- **No glow**. Refrain from using torches to search for turtles. This discourages turtles from emerging and may make nesting turtles return to the water. Avoid flash photography at all times.
- **Move slow**. Turtles can detect sudden movements, so move slowly.
- **Stay low**. Walk close to the water's edge, out of sight of nesting turtles.
- If you see a marine turtle nearby **STOP** where you are, **DROP** slowly to a sitting position and stay very still like a **ROCK**. Wait until she has moved up the beach to begin digging.
- Walk or sit on the beach in a tight group. The recommended group size for self-guided visitors is five people.
- Avoid excess noise.
- If you can see sand being flicked into the air, stay at least 15m away.
- When sand flicking has stopped you may approach a nesting turtle. Wait until she is laying before crawling up behind her on your stomach ('commando crawl').
- Do not move closer than 1m behind her. She will be quite still when laying her eggs. If sand is spraying or she is using her flippers, she is not laying.
- Always position yourself behind the turtle and stay low (sit, crouch or lie on the sand). If you are getting covered in sand as she digs, you are too close!
- Be patient. She may take time to rest or abandon the nest for a variety of reasons, including hitting an obstacle or the sand being too dry.
- Let her return to the ocean unimpeded. Sit behind her at all times, no closer than 2m. Do not attempt to touch the turtle.
- Avoid using lights, torches or campfires on turtle nesting beaches. Light can deter nesting turtles and disorientate hatchlings.
- Do not leave litter on nesting beaches. Please leave all beaches by 11pm to allow a period of undisturbed nesting to occur.

Photo – Marissa Speirs

2 DIGGING BODY PIT

Lots of sand flicked into the air using front flippers only. Turtle may move and repeat this process until finding the correct spot.

Estimated time 20-40mins

3 EXCAVATING EGG CHAMBER

Sand stops being flicked as turtle scoops out egg chamber with rear flippers only. Rocking motion side to side.

Estimated time 10-20mins

4 LAYING EGGS

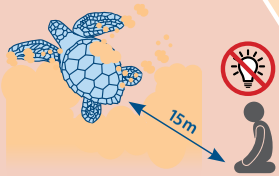
Turtle remains very still, with a gentle heaving motion. If her flippers are moving and sand is being flicked she is NOT laying yet.

Estimated time 3-10mins

5 COVERING NEST

Turtle covers egg chamber with sand using rear flippers then gradually moves forward, camouflaging nest, flicking lots of sand into air.

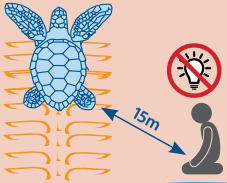
Estimated time 20-40mins

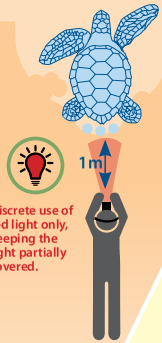


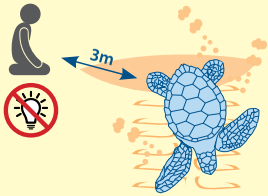
1 EMERGING TURTLE

Crawls from ocean towards potential nesting area.

Estimated time 5-20mins



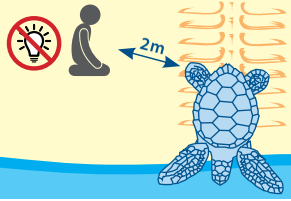


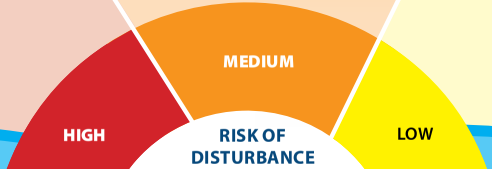


6 RETURNING TURTLE

Crawls back from beach to ocean. May stop to rest at water's edge to restore energy.

Estimated time 20-40mins





NO GLOW: turtles are easily disturbed by lights, use the moon to light your way.
MOVE SLOW: at all times to avoid disturbing turtles, walk along the water's edge and slowly follow an emerging track.
STAY LOW: out of sight of nesting turtles - sit, crouch or lie in the sand.

No flash photography at any time

TURTLE WATCHING CODE OF CONDUCT

Hatching turtles

In natural conditions very few marine turtle hatchlings survive to adulthood. Additional human-induced pressures have further decreased their likelihood of survival. To minimise human impact on hatchlings:

- Do not touch or handle hatchlings.
- Do not use any form of light or flash photography as this will disturb and disorientate hatchlings. Disorientated hatchlings are exposed to greater predation and risk being stranded on the beach, where they will dehydrate and die.
- Do not disturb the nest.
- Stand at least 1m away from the nest.
- Do not compact the sand. Other hatchlings may still be in the nest waiting to emerge.
- Stand still when hatchlings are moving down the beach to avoid stepping on them.
- Allow hatchlings to move to the sea without disturbance or assistance. It is important that hatchlings make their own way to the ocean by using their flippers. This helps to exercise their lungs, allowing them to swim and dive when they reach the water. As a result, hatchlings are able to find their nesting beach when they are mature enough to breed.
- Remain behind hatchlings at all times.
- Do not illuminate hatchlings in the water.
- Please do not drive your vehicle on turtle nesting beaches. Hatchlings become trapped in wheel ruts, greatly decreasing their chance of survival.

Green turtle hatchlings. *Photo – Megan Segers/Ningaloo Turtle Program*

Estuarine crocodile

(*Crocodylus porosus*)

Description The upper bodies of estuarine or saltwater crocodiles are a mottled grey, brown or blackish colour. The snout is broader than that of the freshwater crocodile. They can reach up to 7m, but individuals more than 5m long are rarely seen.

Habitat and behaviour Estuarine crocodiles inhabit the open ocean, seashores, mudflats, estuaries, freshwater rivers and billabongs along the Kimberley coast and northern Pilbara. Adult crocodiles feed on fish, crustaceans, birds, mammals and reptiles such as turtles. During the wet season, females lay up to 50 eggs in nests on riverbanks. They become especially aggressive while breeding. Crocodiles are superb hunters and are exceptionally fast on both land and in the water. They can remain hidden underwater for long periods so you won't always see them. Visitors to the Kimberley should not paddle, clean fish, prepare food or camp at the water's edge. Returning regularly to the same spot at the water's edge is dangerous. If in doubt do not swim or use small boats where crocodiles may live and never hang any part of the body over the boat's edge.

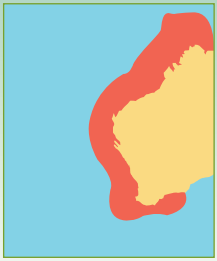
Photo – Tim Willing

Whale shark

(Rhincodon typus)

Vulnerable

Description The whale shark is the world's largest fish, growing to at least 14m long. They have a mouth up to 1.5m wide, a broad, flat head and two small eyes near the front of the head. The body is mostly grey, marked with lots of white spots and stripes (in a pattern unique to each individual whale shark), with a white belly. Three ridges run along each side of the shark and there are five large pairs of gills.



Habitat and behaviour Whale sharks are known to inhabit both deep and shallow coastal waters of coral atolls and reefs. From around mid-March to early August each year they are common in Ningaloo Marine Park. They tend to be solitary and are rarely seen in groups unless feeding at locations with abundant food. Despite their enormous size, snorkellers can safely swim with this giant fish, as long as they follow the whale shark interaction protocol for swimmers. You must not disturb, harm or fish for whale sharks in Australian waters. Due to their habit of swimming at the surface, whale sharks are vulnerable to boat strikes, so you should carefully monitor boat speed during the whale shark season and keep a lookout at all times.

Photo – Aimee Ian

Green sawfish

(Pristis zijsron)

Vulnerable

Description One of only a handful of fish listed as threatened in WA, the green sawfish is a ray that grows to more than 7m. It has a shark-like body, a flattened head and an exceptionally long snout, studded with 24-28 pairs of unevenly-spaced teeth which resemble a saw. The upper body is greenish-brown or olive with whitish undersides.

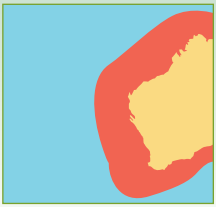
Habitat and behaviour This species was once widely distributed in the northern Indian Ocean to South Africa, around south-east Asia and around northern Australia. It may now be extinct in south-east Asia and has disappeared from New South Wales and southern Queensland, so northern Australia may be the last region with significant populations. Green sawfish occur in inshore marine waters, estuaries, river mouths, embankments and along sandy and muddy beaches, from 1m to more than 70m in depth. A recent study has identified the Ashburton River as the only known pupping ground for the green sawfish in WA. They are fully protected in Australian waters, it is illegal to take green sawfish.

Photo – David Morgan

Grey nurse shark

(Carcharias taurus)

Vulnerable



Description The grey nurse shark has a large, stout body, grey to greyish-brown above and off-white below. Reddish or brownish spots may occur in the tail fin and the rear of the body. They grow to at least 3.6m. They are slow, but strong swimmers and are thought to be more active at night.

Habitat and behaviour A cosmopolitan species, the grey nurse shark is found in inshore subtropical and temperate waters around continental landmasses. It has occasionally been recorded off the continental shelf. Grey nurse sharks are often seen hovering in or near deep sandy gutters or rocky caves, and near inshore rocky reefs and islands, usually at depths of between 15-40m. These sharks are generally harmless to people, but have been greatly depleted through fishing.

Photo – Christopher Jansen

Manta rays

Description These gentle giants are the largest of all rays. They have a small tail that lacks a stinging barb. In 2017 scientist reclassified the oceanic manta ray and the reef manta ray to the genus Mobula. Both the larger oceanic manta ray (*Mobula birostris*) and the smaller reef manta ray (*Mobula alfredi*) are frequently seen off the Ningaloo Coast. Their dorsal surface is typically black with a white underbelly. A unique black, blotchy pattern on the underbelly can be used to identify each individual. The oceanic manta ray can attain widths of up to 7m, whereas the reef manta can grow to around 5m in width.

Habitat and behaviour Manta rays can be found throughout the world's temperate to tropical waters. The reef manta is common in Ningaloo Marine Park, particularly Coral Bay, where there is a resident population year-round. The oceanic manta is less common, but is encountered from time-to-time. Despite their size, manta rays are filter feeders, feeding on small microscopic organisms called zooplankton.

Photo – Johnny Gaskell

Keeping our islands pest free

Thousands of islands lie off the Pilbara and Kimberley coasts. These incredibly special places can act as arks, preserving wildlife, wildflowers and ecological communities which are threatened or no longer found on mainland Australia. It is therefore crucial that non-native animals and plants, even small insects and seeds, are not carried to the islands. When boating, please follow these important quarantine procedures:

- Ensure your boat is clean and baited with anti-rodent baits.
- Check that your clothing and footwear are not carrying soil or seeds.
- Check your food to ensure it is free of pests and insects.
- Don't take pets.
- Take all rubbish with you on departure and dispose of it on the mainland.

Cane toads

Cane toads (*Rhinella marina*), which were deliberately introduced into Australia in 1935 in an attempt to control sugar cane beetles in Queensland, are now major environmental pests. They have spread, both naturally and with human assistance, throughout much of Queensland, northern New South Wales, northern parts of the Northern Territory and northern WA. Cane toads have a significant impact on native fauna, with some species becoming locally extinct.

Cane toads can swim reasonable distances, but are often transported to islands by hiding in cool moist places like camping gear, fishing gear and any other equipment that provides them with protection from the heat. They have colonised some offshore islands in Queensland and the Northern Territory, where they have had a major impact on wildlife.

Please help protect important islands and carefully check your boat and gear before leaving, to ensure you don't have any toad 'hitchhikers'. If you find a suspected cane toad stowaway, capture the animal using gloves, bring it back to shore and send a photo to 0400 693 807 to confirm its identification before it is euthanased.

All WA cane toad sightings should be reported to 0400 693 807 or email canetoads@dbca.wa.gov.au

KEEPING OUR ISLANDS PEST FREE

Cane toads. *Photos – DBCA*

Reporting interactions with protected species

If you find a dead, injured or entangled animal (of a species featured in this guide), or are involved in a protected species interaction, please note down as many details as you can from the list below:

- Time and date of the sighting or event.
- Species name and description (take pictures if possible).
- Number of animals.
- Size or special markings on the animals (note if there are juveniles or adults present, or both).
- Location (use a GPS if available, recording the latitude and longitude in decimal degrees ddd.ddddd). Please also note the datum your GPS has been set to (preferably WGS84 or GDA94).
- Incident type e.g. sighting, by-catch, collision, entanglement.
- Any comments that could help explain the event.
- Your contact details to assist us if we need to follow up.

Pass this information to the nearest DBCA Parks and Wildlife Service office. If you plan regular visits to an area where you note protected species, and are willing to help marine managers and scientists learn more about threatened and other little-known marine wildlife species in north-western Australia by developing a time-series of recordings, please contact us.

Top Whale shark with boat propeller injury. *Photo – Rich Pillans* **Bottom** Humpback whale with strike injury. *Photo – John Totterdell/MIRG Australia*

More information

Department of Biodiversity, Conservation and Attractions
Parks and Wildlife Service

Kununurra Regional Office
Ph: (08) 9168 4200

Karratha Regional Office
Ph: (08) 9182 2000

Broome District Office
Ph: (08) 9195 5500

Exmouth District Office
Ph: (08) 9947 8000

GOVERNMENT OF WESTERN AUSTRALIA

Department of **Biodiversity, Conservation and Attractions**

PARKS AND WILDLIFE SERVICE

Information current at March 2018. This information is available in alternative formats on request.

Whale shark. *Photo – Dani Rob*

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