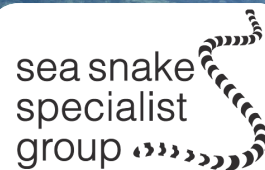


SEA SNAKES OF THE EXMOUTH GULF

Developed with support from the following partners



Department of
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SEA SNAKES OF THE EXMOUTH GULF



WARNING: All sea snakes should be treated as potentially venomous and therefore dangerous. Sea snakes should only be handled by experienced persons.

Exmouth Gulf is home to a unique sea snake fauna with 11 of the 30 known sea snake species in Australia resident in the Gulf and a further five (5) species thought to be vagrants to the region. Compared with other regions of Western Australia, a lot is known about the species within the Exmouth Gulf due to extensive ecotourism, ongoing targeted research and local prawn trawling operations which frequently encounter sea snakes as bycatch.

Identification of sea snakes is often considered challenging, particularly among the diverse genus *Hydrophis*. While this is true of many parts of the world where up to 25 species may inhabit the same area, fortunately in Western Australia and the Exmouth Gulf in particular, most species can be reliably distinguished by colour pattern and other easily observed characteristics.

This guide provides users with identification information and a summary of known behaviour and ecology for 10 of the commonly trawled species in the Exmouth Gulf, and a further four (4) species that are vagrant to the region. The following icons are used throughout to show information relevant to every species.



Snout to vent length



Colouration and patterns



Distinctive features



Water depth

RECORD YOUR SEA SNAKE SIGHTINGS

Little is known about the ecology, distribution and threats to many of Australia's sea snake species. You can help us understand more about them by recording your sightings.

Email your photos, coordinates or broad location of the sighting to aus.seasnakes@gmail.com



SHORT-NOSED SEA SNAKE (*Aipysurus apraefrontalis*)



Ruchira Somaweera



70-90 cm long



Generally pale orange/
yellow (sometimes darker)



Small, pointed head and short,
blunt tail



Found up to 70m deep

SHORT-NOSED SEA SNAKE (*Aipysurus apraefrontalis*)

Description

Short-nosed sea snakes are a small sea snake (70 – 90 cm) with a distinctly small and pointed head and short, blunt tail. Most Exmouth Gulf animals are a pale orange/yellow colour with indistinct bands, but some individuals are considerably darker. They have relatively large body scales (typically in 17 scale rows) and ventral scales (140 – 160) like other *Aipysurus* species.

Natural history

Little is known about the short-nosed sea snake and they were briefly thought extinct after their disappearance from Ashmore Reef. The species was rediscovered off Ningaloo Reef and subsequent analysis of trawl data showed that they are one of the more common species in Exmouth Gulf. Despite this, they are rarely seen at the surface and nearly all records come from trawling on the sand flats in the gulf. They have been found in water up to 70 metres deep. Diet records are limited but in Exmouth they appear to mostly eat small burrowing eels.

Similar species



DUBOIS' SEA SNAKE (*Aipysurus duboisii*)



80-150 cm long



Yellow and black pattern with dark spots (WA coast), can be entirely black elsewhere



Rounded head, striking colour pattern



Up to 100 m deep

DUBOIS' SEA SNAKE (*Aipysurus duboisii*)

Description

Dubois' sea snakes are slender and moderately sized (80 – 150 cm). They have rounded heads with small, highly fragmented head scales. On the WA coast they have a striking yellow and black colour pattern, with dark spots forming indistinct lines down the body and faint bands; elsewhere in Australia they can be entirely black. Like other *Aipysurus* species, Dubois' sea snakes have relatively large body scales (19 scale rows) and ventral scales (160 – 185).

Natural history

Dubois' sea snakes are widespread across northern Australia and inhabit a wide variety of habitats, including coral reefs as well as soft-bottomed trawl grounds. They have a wide range of depth preferences and have been trawled from as deep as 100 metres. Trawl data suggests they are common in Exmouth Gulf although they are rarely seen at the surface. It is thought that the species is largely nocturnal, with a generalist diet consisting of fish living in crevices and burrows.

Similar species



LEAF-SCALED SEA SNAKE (*Aipysurus foliosquama*)



70-90 cm long



Colour can be variable, but usually dull brown.



Small, chisel-shaped head and distinct leaf-shaped scales



Water depth unknown

James Nankivell

LEAF-SCALED SEA SNAKE (*Aipysurus foliosquama*)

Description

Leaf-scaled sea snakes are relatively small (70 – 90 cm) with a chisel-shaped head. Colouration can be variable but they usually have a dull brown pattern, sometimes with lighter brown bands. Leaf-scaled sea snakes have relatively large body scales (19 scale rows) and ventral scales (140 - 155). Their body scales have distinct leaf-shaped edges, giving the species its common name 'leaf-scaled'.

Natural history

Little is known about the leaf-scaled sea snake, and they were briefly thought extinct after their apparent disappearance from Ashmore Reef. While they are commonly trawled in Shark Bay, only a few records exist from trawls in Exmouth Gulf. They are included here because they are listed as a threatened species at the national level.

Similar species



OLIVE SEA SNAKE (*Aipysurus laevis*)



Females: up to 200 cm
Males: up to 100 cm



Beige to dark orange colour,
with dark brown head and
isolated dark scales (this can
vary outside of Exmouth)



Heaviest of all sea snakes
known in Exmouth, can
weigh up to 10 kg



Up to 150 m deep

OLIVE SEA SNAKE (*Aipysurus laevis*)

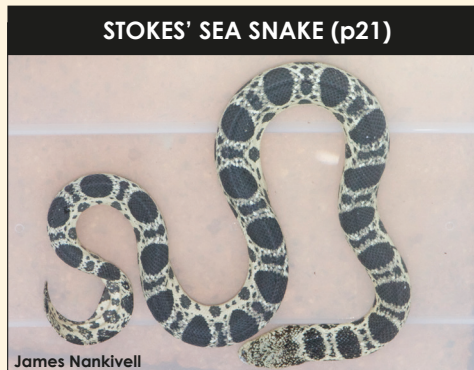
Description

Olive sea snakes have large body sizes - females can reach up to 200 cm and weigh up to 10 kg, with males rarely exceeding 100 cm. In Exmouth, adults are nearly always beige to dark orange in colour, with a dark brown head and isolated dark scales, but different colour patterns are found in other regions. Juveniles may have more dark spots on the body, sometimes forming dark lines towards the tail. They have large body scales (21 – 25 scale rows) and ventral scales (130 – 155).

Natural history

Olive sea snakes are commonly seen at the surface in Exmouth Gulf. They are found in a wide variety of habitats up to 150 metres deep. They are frequently seen sheltering in crevices or investigating them for prey, and are occasionally seen sleeping at the surface at night. They have a broad diet and will eat fish, fish eggs and squid. Olive sea snakes are generally curious and innocuous around divers and snorkellers, often approaching to investigate masks and other objects, but won't hesitate to bite if handled.

Similar species



MOSAIC SEA SNAKE (*Aipysurus mosaicus*)



60 - 80 cm long



Mosaic-like pattern of dark brown/black and yellow bands.



Large, pale eyes. Nine (9) large scales on the head. Mosaic pattern is unique to this species



Water depth unknown

MOSAIC SEA SNAKE (*Aipysurus mosaicus*)

Description

Mosaic sea snakes are relatively small (60 - 80 cm long) with large pale eyes and nine (9) large scales on the head. The colour pattern is unique, with a consistent pattern of dark brown/black and yellow bands. Mosaic sea snakes have large body scales (17 rows) and ventral scales (140 - 165).

Natural history

Mosaic sea snakes are known from around Australia, where they are typically found in soft-bottomed habitats. They appear to be relatively rare in Western Australia, with minimal sightings in the Exmouth Gulf. Mosaic sea snakes are dietary specialists that only eat fish eggs and therefore have underdeveloped fangs and venoms glands; despite this, they should be treated with care. Little is known of their behaviour because they are rarely observed underwater.

Similar species



WESTERN TURTLE-HEADED SEA SNAKE (*Emydocephalus orarius*)



80 - 120 cm long



Distinctive black and white banded pattern with black spotting within white bands.



Small head, large eyes and a large, obvious lip scale.



Water depth unknown

WESTERN TURTLE-HEADED SEA SNAKE (*Emydocephalus orarius*)



Description

Turtle-headed sea snakes are a medium-sized species (80 - 120 cm long). They have a distinctive black and white banded pattern, with black spotting within the white bands. They have small heads, with large eyes, and an obvious lip scale which lends the species its common name. Females are substantially larger than males, but males have a distinctive structure on the tip of the snout, known as a 'rostral spine'. They have large body (17 scale rows) and ventral scales (140 - 146).



Natural history

Turtle-headed sea snakes were described in 2020 and thought to be endemic to Western Australia. While little is known about these snakes, they appear to be more common in deeper, soft-bottomed habitats. They are a dietary specialist of fish eggs, using their enlarged lip scale to scrape clumps of eggs from surfaces. *Emydocephalus* species have almost no teeth and are thought to have non-functional venom. Turtle-headed sea snakes are a slow-moving, day-active (diurnal) species. They are relatively rare in the Exmouth Gulf, however they can be observed feeding, courting and sleeping in large numbers at Lighthouse Bay.



Similar species

Turtle-headed sea snakes are unlikely to be confused with any other species.

ELEGANT SEA SNAKE (*Hydrophis elegans*)



Females: 160 - 270 cm
Males: 100 - 140 cm



Complex pattern of dark blotches with small spots on lighter patches between each blotch.



Long, cylindrical-shaped body with smallish head. Narrow, banded tail.



Up to 140 m deep

ELEGANT SEA SNAKE (*Hydrophis elegans*)

Description

Elegant sea snakes are the longest sea snake in Australia, with larger females that are typically 160 - 180 cm long but can reach 270 cm. Males are smaller at 100 - 140 cm long. Despite their size, they are a relatively slender species with a long, cylindrical-shaped forebody and smallish head. They have a complex pattern of dark blotches with small spots between each blotch. They also have bars on their stomach, however these tend to fade as the animal grows. Adults are typically beige with an olive head, whilst juveniles have black heads. Occasionally the dorsal (back) blotches and ventral (stomach) bars join to form full bands, but this is much less common in Exmouth than in Shark Bay. The tail is relatively narrow and banded, with wider dark bands than beige/white bands.

Natural history

Elegant sea snakes are widespread throughout northern Australia in soft-bottomed habitats at a wide range of depths to 140 metres. They are present in Exmouth Gulf and Ningaloo Reef and are often seen resting at the surface during the day or night. They appear to feed primarily on eels, using their elongated forebody to probe burrows and other hiding spots. They give birth to small young, but in larger litters than other sea snakes (typically 10 - 20 young).

Similar species



OLIVE-HEADED SEA SNAKE (*Hydrophis major*)



James Nankivell



James Nankivell



Up to 150 cm long



Pale underside with dark and light shaded sections on body, and black bars between.



Heavy body and large head, with a cylindrical-shaped body.



Commonly less than 30 m deep

OLIVE-HEADED SEA SNAKE (*Hydrophis major*)

Description

Olive-headed sea snakes are moderately sized (up to 150 cm) with a heavy, cylindrical-shaped body and large head. The head has visible loose skin and a slight 'beak' shape in profile. Colour patterns are relatively consistent in Exmouth Gulf, with clear dark/light shading and a pale underside. Black bars appear between shaded sections, with black spots visible between the bars. Juveniles are usually more vibrant than adults but lack clear dark/light shading; instead, they have an olive-green head with black mottling across the body. Adult body scales are relatively small, each bearing a distinct central edge (keel) that is absent or indistinct in juveniles.

Natural history

Olive-headed sea snakes are common in Exmouth Gulf and found throughout much of tropical Australia. They are most frequently found in soft-bottomed habitats less than 30 m deep. They are dietary specialists that feed almost entirely on eel-tailed catfish (*Plotosidae*), especially striped catfish.

Similar species



SPOTTED SEA SNAKE (*Hydrophis ocellatus*)



Arne Rasmussen



James Nankivell



Up to 150 cm long



Short grey bars on the back, a white belly, with large spots along the sides of the body.



Slender forebody and heavy hindbody, with wide paddle tail.



Up to 100 m deep

SPOTTED SEA SNAKE (*Hydrophis ocellatus*)



Description

Spotted sea snakes are moderately sized (up to 150cm) with a slender forebody, heavy hindbody and wide paddle tail. They have a very distinctive colour pattern, with short grey bars along the back, a pale belly and large blotches along the sides of the body. Juvenile colouration is similar to adults but they typically have more vibrant patterns. Male spotted sea snakes often have large spines on each body scale, giving them a rough appearance. Spotted sea snakes are strong and muscular, with large fangs, and will bite without hesitation when handled; they are therefore one of the more hazardous sea snakes encountered by fishers.



Natural history

Spotted sea snakes are widespread across northern Australia and are particularly common in tropical Western Australia. They inhabit coral reefs, soft-bottomed habitats and sponge gardens, and can be found up to 100 m deep. They are one of the most commonly seen species in Exmouth Gulf at night. Few diet records exist, although this species appears to be a generalist predator of benthic fish.



Similar species

Due to their unique pattern, colouration and body shape, spotted sea snakes are unlikely to be confused with any other species in the Exmouth region.

STOKES' SEA SNAKE (*Hydrophis stokesii*)



James Nankivell



Vinay Udyawer



Vhon Garcia



Up to 200 cm long and
up to 10 kg in weight



Colour pattern is variable,
but typically consists of large
black blotches along the back,
separated by smaller black spots
that extend onto the flanks.



Large, broad head with
compressed ribbon-like body
shape in water.



Up to 100 m deep

STOKES' SEA SNAKE (*Hydrophis stokesii*)

Description

Stokes' sea snakes are extremely large, reaching up to 200 cm in length and up to 10 kg in weight - with females generally much larger and heavier than males. The body is strongly laterally compressed, appearing almost ribbon-like in water, though this shape is lost quickly once out of water. They have very large, broad heads and the longest fangs of any sea snake. Colour pattern is variable, but usually consists of large, black blotches on its back, with black spots between them that extend onto the flanks. This colouration and pattern can fade with age.

Natural history

Stokes' sea snakes are widely distributed across the shallow tropical and subtropical seas of the Indo-west Pacific and Australia. They are commonly seen at the surface in the Exmouth region during the day. They inhabit coral reefs and soft-bottomed trawl grounds up to 100 m. They are often seen wrestling with prey at the surface and are known to prey on a variety of spiny and toxic fish such as stonefish, porcupinefish and stargazers. When caught, they can be relatively calm and slow moving but are capable of delivering a dangerous bite.

Similar species



RARE OR VAGRANT SPECIES IN EXMOUTH GULF

All of the below species have been recorded in or near Exmouth Gulf but are rarely caught in the trawls. Most of these species are typically associated with deeper waters than those found within the Gulf.

Horned sea snake
(*Hydrophis peronii*)



Small-headed sea snake
(*Hydrophis macdowelli*)



Spectacled sea snake
(*Hydrophis kingii*)



Geometrical sea snake
(*Hydrophis czeblukovi*)



Extremely distinctive species.
Relatively small head, with distinctive
horn-like projections.

In adults, every body scale bears a
spine, giving the skin a rough texture.

Banded pattern that is reddish in
juveniles, fading to brown or beige
in adults.

Broad paddle-tail and tiny head.
Very similar in colour pattern to
the **elegant sea snake - *Hydrophis elegans* (p.15)** and difficult to
distinguish.

The head is smaller in relation to
H. elegans, with larger eyes. The
tail is also much broader than *H.*
elegans and generally has fewer
than 40 bands.

Very long and thin species, often
confused with the **elegant sea
snake - *Hydrophis elegans* (p.15)**.

Can be distinguished by their black
head and white eye ring, and by the
pattern of semi-circles on the side of
the body.

Relatively small-headed sea snake,
similar to the **spotted sea snake -
Hydrophis ocellatus (p.19)**.

Can be distinguished by the dark
pentagons on the side of the body
and blackish belly (which is usually
pale in *H. ocellatus*).



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WARNING

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