



# SPECIES FACT SHEET

## Sea snakes

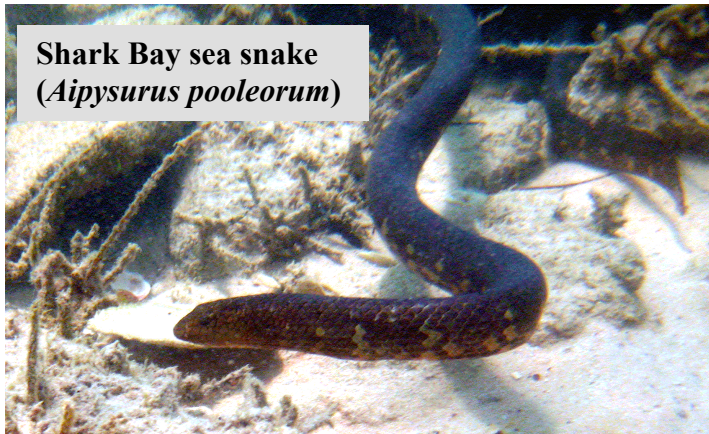
### Classification

|          |              |
|----------|--------------|
| Kingdom: | Animalia     |
| Phylum:  | Chordata     |
| Class:   | Reptilia     |
| Order:   | Squamata     |
| Family:  | Hydrophiidae |

**Conservation Status:** Not Evaluated



Olive headed sea snake  
(*Disteira major*)



Shark Bay sea snake  
(*Aipysurus pooleorum*)



Bar Bellied sea snake  
(*Hydrophis elegans*)

**Identification:** Sea snakes evolved from the Elapidae family of land snakes, the family that contains all of Australia's venomous snakes. Their transition into the seas involved a suite of morphological and physiological changes for surviving in the oceans. Sea snakes have laterally compressed tails that act as paddles to move them through the water. Some sea snakes have heavily keeled ventral surfaces adding to their efficiency in moving through the marine environment. Sea snakes breathe through a pair of valved nostrils on the front of their upper jaws that keep water out when the snake is submerged. Sea snakes also get some oxygen directly from the water through their skin, which allows them to dive for greater lengths of time. Most sea snakes have a pair of small fangs at the front of their jaws with highly neurotoxic venom, mainly used to stun prey. They also have a special gland at the base of their tongue which helps remove excess salts from the snake's bodies. The Elapids gave rise to the Laticaudids, or sea kraits, and the Hydrophiids, or true sea snakes. In Shark Bay, there are six species of true sea snakes, the olive headed sea snake (*Disteira major*), the bar bellied or elegant sea snake (*Hydrophis elegans*), the Shark Bay sea snake (*Aipysurus pooleorum*), the turtle headed sea snake (*Emydocephalus annulatus*), the southern mudsnake or northwestern mangrove sea snake (*Ephalophis greyi*), and the yellow bellied sea snake (*Pelamis platura*). In the Eastern Gulf of Shark Bay, the olive headed, bar bellied, and Shark Bay sea snakes are the most common. The Shark Bay sea snake can easily be distinguished from the former because it has a solid brown or purple color. The olive headed sea snake has a wide, yellow to olive head and a fairly stout body with 24-31 broad dark bars with narrower lighter bars between. The coloration of these

bars can be yellow, brown, or olive. The bar bellied sea snake has a head that is indistinct from its slender body. The head is usually a grey, black, or olive-yellow color and the body's dorsal color pattern consists of wide and narrow grey or yellow-brown bars with spots in the lighter areas.

**Distribution:** Sea snakes are generally found in shallow tropical and subtropical coastal waters throughout the Indo-Pacific region. They inhabit shoals, reefs, mangroves, sand flats and seagrass beds. Only one species is known to venture into deeper waters, the yellow bellied sea snake, and can be found in flotsam and sargassum weed rafts. The five species of sea kraits have somewhat of a smaller distribution in the Indo-Pacific including the northern coastline and northeast waters of Australia.

**Age and Growth:** Most sea snakes in Shark Bay don't grow longer than two meters, but some species, the yellow sea snake (*Hydrophis spiralis*) and the blue banded sea snake (*Hydrophis cyanocinctus*), may grow up to three meters long. Most species are born at around 25 cm long and must reach a meter in length before they reach sexual maturity, which takes two to three years. Mortality rates of sea snakes are high, especially in juveniles, but some sea snakes found on the Great Barrier Reef have been known to live for up to 15 years.

**Reproduction:** One of the main differences between sea snakes and sea kraits is their mode of reproduction. The sea kraits are oviparous and lay their eggs on land while the true sea snakes are ovoviviparous and give birth to live young without leaving the water. Because of this, sea kraits rely on land for part of their lifecycle but sea snakes do not and are restricted to the sea. All of the species found in Shark Bay are true sea snakes and give birth to live young. Gestation periods are short at around five to six months after which females give birth to two to six young. Some species like the bar bellied sea snake have larger clutches of 12 – 23 live young.

**Diet:** Most sea snakes feed only on fish. Their two short fangs are used to inject neurotoxic venom that quickly paralyzes their prey. Sea snakes voluntarily inject venom into their prey and when they do they can control how much. This allows the snakes to save energy in venom production and also means that an accidental bite by a sea snake isn't always fatal. Sea snake venom is very toxic and one drop is said to be enough to kill three adults. In contrast to most sea snakes, the turtle headed sea snake only eats fish eggs and doesn't have any well developed teeth or fangs.

**SBERP Research:** SBERP has investigated the diets and habitat use of sea snakes. We have found that bar bellied sea snakes tend to be very specialized in their diets, eating burrowing snake eels almost exclusively. These snakes are often found in shallow waters near the coast, but rarely venture into the sandy habitats where their prey is common at high tide because that is when they are at risk from tiger sharks. Instead, they wait until low tide when the sharks can't get into the shallows. Because their prey burrow into the sand and the snakes poke their head into the sand to find them, they are easy prey for tiger sharks. Most tiger sharks that have regurgitated while next to our boats had eaten at least one sea snake! We also have found that olive headed sea snakes that are found over offshore seagrass banks change how they use habitats in response to tiger sharks.

