DYR 1: BOX JELLYFISH

**They are responsible for over 60 deaths in the last 100 years**

Considered to be among the deadliest marine animals in the world, the toxins that lie within the venom of a box jellyfish are known to attack the skin cells, nervous system, and heart. Humans who have been stung can go into shock and drown, or die due to heart failure before they have a chance to reach the shore. Although there have been at least 63 reported deaths since 1884, there have been many survivors. If stung, it is important to keep the heart pumping, so be prepared to conduct CPR.

**They shrink if they don’t eat**

Known to eat up to three times per day, jellyfish are prone to shrink in size if they do not eat. Whilst small jellyfish eat prawns and the larger eat fish, it has been found that the box jellyfish can lose up to 30% of its own body weight within 24 hours if it does not eat.

A group of jellyfish

Description automatically generated with medium confidence

## Turtles are their only predators

Marine and land animals can be stung by box jellyfish. Sea turtles survive being stung due to their thick skin that cannot be penetrated. However, turtles can be stung in their eyes.

## Global warming has caused them to spend more time in our waters

Previously running from November through May, the Australian box jellyfish season has been extended due to the rise in sea temperatures. The warmer waters have attracted many more jellyfish, some of whom can be found in our waters until July. So be sure to check your surroundings before swimming.

### They can see

Most jellyfish can’t see. Some have rudimentary ocelli, which can detect changes in light, and help the jelly figure out which way up it’s facing, and what time of day it is.

The box jelly has twenty of these ocelli, supporting four, far more complex real eyes, complete with retinas, lenses and corneas. This is the most elaborate visual system of all Cnidarians!

Researchers have witnessed this jellyfish avoiding capture in the ocean by changing their course in response to the presence of the researcher. They’ve also been shown to avoid dark obstacles placed in their tanks while finding it difficult to resolve an image of similar white obstacles.

It seems that they can’t see directly in front or behind them, but all other angles are covered by their field of vision.

### 6. They listen to rock

Another cool adaptation, common in cnidarians, is the mechanism that tells them which way is up. The statocyst is a type of hollow sac inside the jellyfish that contains a ball of mineralised rock called a statolith.

This rock functions similarly to the inner ear, in that it changes position inside the statocyst in relation to gravity, and triggers sensory hairs which allow the organism to figure out which way it’s facing, or give a sense of acceleration.

This statolith increases in size by adding layers over time, the number of which can be used to estimate the age of the jellyfish, much like counting the rings on a tree. [3](https://factanimal.com/box-jellyfish/#easy-footnote-bottom-3-5196)

### The Australian box jellyfish sting can cause cardiac arrest in 2mins

Chironex fleckeri, also known as the ‘Australian box jelly’ is one of the largest species of extremely venomous box jellyfish found off coasts of Australia, Malaysia, the Philippines and Vietnam.

It’s armed with 3-meter-long (10 feet) tentacles covered with millions of nematocysts, which can deliver potent venom upon contact. This venom ‘locks’ a persons heart as the venom forces it to clench.

While it’s thought to be one of the most venemous creatures in the world, it has only caused 79 deaths since 1883 in Australia. [4](https://factanimal.com/box-jellyfish/#easy-footnote-bottom-4-5196)

### Urinating on a sting to help relieve pain is a myth

Vinegar can be used to deactivate undischarged nematocysts and help prevent the release of more venom and is made available across Australian beaches.

However, there is no scientific evidence that urinating on a string helps relieve pain, although it might take the victims mind off the pain for a small moment!

Other substances such as ammonia, lemon juice and alcohol also don’t help prevent the release of venom or reduce the pain of a sting.

<https://en.wikipedia.org/wiki/Jellyfish_stings_in_Australia>

Facts:

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| **Habitat:** | Warm coastal marine |
| **Location:** | Indo-Pacific regions and worldwide |
| **Lifespan:** | 3 months in the wild, up to 9 in captivity |
| **Size:** | Up to 30cm (1ft) diameter and 3m (10ft) long |
| **Weight:** | Up to 2.2kg (5lb) |
| **Color:** | Translucent, clear blue, with spots and long, cream-coloured tentacles |
| **Diet:** | Shrimp, small fish |
| **Predators:** | Mostly turtles, some crabs, predatory fish |
| **Top Speed:** | Reports of up to 7.5kmph (4.6mph) (unverified) 0.3kmph (0.2mph) confirmed |

TAIPAN SNAKE

Often cited as the world’s most venomous snake, the Inland Taipan is far from the most dangerous. Unlike its congener, the common and fiery-tempered Coastal Taipan, this shy serpent is relatively placid and rarely encountered in its remote, semi-arid homeland.

#### Habitat

Inland Taipans are associated with the deep cracking-clays and cracking-loams of the floodplains, however they also venture onto nearby gibber plains, dunes and rocky outcrops if cover is available. The vegetation in these areas is usually sparse, consisting of chenopod shrubs, lignum and the occasional eucalypt near the water channels.

The snakes shelter in soil cracks and crevices, and in holes and mammal burrows.

#### Distribution

The species occurs in the Channel country of south-western Queensland and north-eastern South Australia. There are two old records for localities further south-east, i.e., the junction of the Murray and Darling Rivers in northwestern Victoria (1879) and "Fort Bourke" (= Bourke?), New South Wales (1882); however the species has not been collected in either state since then.

#### Seasonality

Road-killed specimens have been found in "winter", hence the species is presumably active on the surface at this time of year.

The seasonal change in body colouration presumably helps the Inland Taipan to warm up quickly during the cooler months (dark colour) and avoid overheating in the warmer months (pale colour).

#### Feeding and diet

In the wild Inland Taipan appear to feed entirely on small to medium-sized mammals, particularly the Long-haired Rat *Rattus villosisimus*, as well as the introduced House Mouse *Mus musculus* and various small dasyurids. Prey is usually cornered in a burrow or soil crack before being bitten several times in quick succession. The venom acts so rapidly that the snake can afford to hold on to its prey instead of releasing (to avoid injury) and waiting for it to die.

In captivity Fierce Snakes may also accept day-old chicks in addition to rats and mice.

### They are the most venomous of all snakes

Tests using human cell cultures show that they are the most venomous of all tested snakes. The venom in one bite is thought to be enough to kill 100 adults. [1](https://factanimal.com/inland-taipan/#easy-footnote-bottom-1-2007)

### They have evolved specifically to kill mammals

This is what makes them so venomous to humans as the toxins in their venom are designed to be deadly to warm-blooded animals. Symptoms of a bite include headache, vomiting, stomach pain, collapse, and convulsions.

### 3. They rarely bite people

So, while they are the most venomous, they are not the deadliest snake. This is because they live in areas where there aren’t many people. [2](https://factanimal.com/inland-taipan/#easy-footnote-bottom-2-2007)

### 4. The anti-venom was developed in 1955

An amateur studier of snakes called Kevin Budden was the first person to catch a live taipan snake and died in the process. His research was key for developing the anti-venom. [3](https://factanimal.com/inland-taipan/#easy-footnote-bottom-3-2007)

### 5. There have been no recorded deaths since the creation of the anti-venom

Essentially all bites from the inland taipan in recent years have been herpetologists studying the snakes, and none of these have been fatal.

### 6. They are not aggressive

Reptile handlers consider them relatively easy to work with as they are rarely aggressive. When encountering humans in the wild, they are most likely to run away.

### 7. They attack fast and strike up to 8 times

They strike at lightning-fast speed, with as many as 8 bites in one attack.

### 8. Their colour changes with the seasons

They become lighter in summer and darker in winter. This helps them regulate their temperature as darker colours absorb more heat, helping them stay warm in winter.

### 9. They have only one predator, the mulga snake

The mulga snake (Pseudechis australis) eats multiple snake species and is immune to the venom of the inland taipan snake.

### 10. They compete with large monitor lizards for food

The perentie is the largest monitor lizard in Australia. These giant lizards will aggressively compete with the inland taipan for food.

### 11. They lay 12 -24 eggs

They lay these eggs in abandoned burrows and they take 2 months to hatch.

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In September 2012, in the small city of [Kurri Kurri, New South Wales](https://en.wikipedia.org/wiki/Kurri_Kurri,_New_South_Wales), north of Sydney, more than 1000 kilometres away from the snake's natural environment, a teenage boy was bitten on the finger by an inland taipan. The teenager's rapid self-application of a [compression bandage](https://en.wikipedia.org/wiki/Elastic_bandage) above the wound[[88]](https://en.wikipedia.org/wiki/Inland_taipan#cite_note-youtube.com-88) and the availability and administration of a polyvalent (broad-spectrum) [antivenom](https://en.wikipedia.org/wiki/Antivenom) in the local hospital saved his life. The police worked to find out how the inland taipan got to this part of Australia. The snake was most likely a stolen or illegal pet and the boy had tried to feed it.[[89]](https://en.wikipedia.org/wiki/Inland_taipan#cite_note-89)[[90]](https://en.wikipedia.org/wiki/Inland_taipan#cite_note-90)

In December 2013, reptile handler Scott Grant (age 40+), who was conducting a demonstration in front of 300 people at the annual building union's picnic in [Portland, Victoria](https://en.wikipedia.org/wiki/Portland,_Victoria), had just finished showing the crowd an inland taipan and was trying to put it into a bag when it struck him. He got into his utility and tied a bandage around his arm. A few minutes later, however, he was lying on the ground and [convulsing](https://en.wikipedia.org/wiki/Convulsion). He was flown in a serious condition to [Essendon Airport](https://en.wikipedia.org/wiki/Essendon_Airport) and driven to the [Royal Melbourne Hospital](https://en.wikipedia.org/wiki/Royal_Melbourne_Hospital), where his condition was stabilised and over time he recovered. Only a tiny amount of venom from the inland taipan had entered his body, and the adverse reaction he felt shortly after was an allergic one, presumably due to his past snake bites.[[91]](https://en.wikipedia.org/wiki/Inland_taipan#cite_note-91)[[92]](https://en.wikipedia.org/wiki/Inland_taipan#cite_note-92)[[93]](https://en.wikipedia.org/wiki/Inland_taipan#cite_note-93)[[94]](https://en.wikipedia.org/wiki/Inland_taipan#cite_note-94)

In October 2017, Weinstein et al. published a [case report](https://en.wikipedia.org/wiki/Case_report) in [Toxicon](https://en.wikipedia.org/wiki/Toxicon) journal, writing "The victim was seeking to observe members of an isolated population of this species and was envenomed while attempting to photograph an approximately 1.5 m specimen. He reported feeling “[drowsiness](https://en.wikipedia.org/wiki/Somnolence)” and [blurred vision](https://en.wikipedia.org/wiki/Blurred_vision) that progressed to [ptosis](https://en.wikipedia.org/wiki/Ptosis_(eyelid)); he later developed [dysphagia](https://en.wikipedia.org/wiki/Dysphagia) and [dysarthria](https://en.wikipedia.org/wiki/Dysarthria). The patient was treated with 1 vial of polyvalent antivenom, which was later followed with an additional two vials of taipan monovalent. He was intubated during retrieval, and recovered after 3 days of intensive care. He had a right [ophthalmoplegia](https://en.wikipedia.org/wiki/Ophthalmoparesis) that persisted for approximately 1 week post-envenoming.".[[85]](https://en.wikipedia.org/wiki/Inland_taipan#cite_note-Weinstein_15–18-85)