

Snakes



Parks and Wildlife Service Tasmania

DEPARTMENT of TOURISM, PARKS
HERITAGE and the ARTS

“He that has humanity, forwarn’d
tread aside, and let the reptile live”

W D Hudson

The very thought of snakes fill some people with terror, while others are fascinated by these enigmatic creatures. Through the ages humanity has been obsessed by snakes in myths, legends and superstitions. For example the northern Australian Aboriginal community believe that the creator of life was a giant snake, the Rainbow Serpent, which caused lightning and storm.

Sadly, snakes have been endlessly persecuted because of fear and superstition. Australians have often been guilty of killing snakes for no reason other than fearing them. It may come as a surprise to learn that snakes are not habitually aggressive and venom is used primarily to secure food and not as a defence. Only in the breeding season may they become territorial. Where humans are concerned, snakes are actually shy animals preferring to move away and hide or lie still in the hope of being overlooked. Their natural camouflage generally makes them inconspicuous.

Fortunately attitudes are beginning to change and people are learning to respect these marvellous reptiles. So, before you reach for a stick, calmly assess the risks. You may even begin to admire them — certainly you should respect them.

Tasmanian snakes

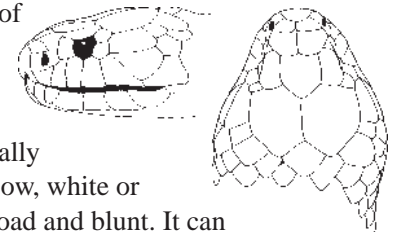
Except for rarely recorded sea-snakes, only three species of land snake inhabit Tasmania: the Tasmanian Tiger Snake or Black Tiger, *Notechis ater*,



Copperhead *Austrelaps superbus*, and the White-lipped Whip Snake *Drysdalia coronoides*. The most reliable distinguishing feature is the middle head scale — something hard to see safely in a wild snake (see diagram). All are widespread in Tasmania and Tiger Snakes are found on most large offshore islands.

Tiger Snake

The Tasmanian Tiger Snake is one of a group of closely related species. Its distinction from mainland forms and other island forms is currently undergoing revision. The markings are highly variable and should not be used in isolation to identify snakes. Colour forms range from yellow/orange with grey bands to sandy/grey with no bands. Typical forms however, are of a black snake with either no bands or faint yellow to cream bands. Generally the belly is pale yellow, white or grey. The head is broad and blunt. It can be difficult to distinguish the Tiger Snake from the Copperhead since sizes, habitat preferences and behaviour overlap somewhat.

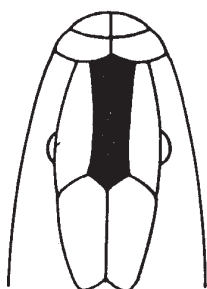


Adult length: 1 m to 1.8 m. Chappell Island subspecies up to 2.4 m.

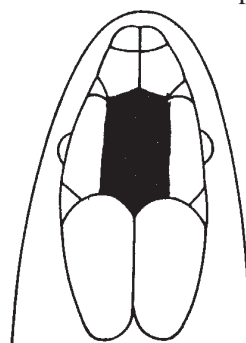
Habitat: Wide ranging from dry rocky areas to wet marshes and grasslands.

Prey: Solely vertebrate feeders — small mammals, nestling birds, lizards, smaller snakes and frogs.

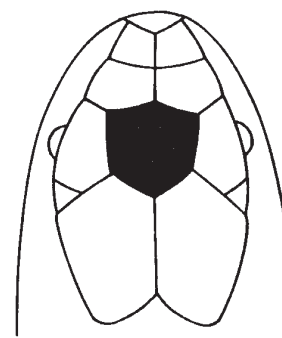
Behaviour: A slow, careful hunter which may stand its ground if surprised, relying on its impressive threat display for defence.



White-lipped whip snake



Australian copperhead



Tiger snake

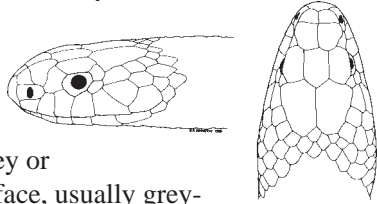
This species makes a sudden “bark” sometimes used in threat.

Fangs and poison: Large, front fangs; highly toxic and large amounts.

Copperhead

This snake has large prominent eyes and a narrow somewhat pointed head scarcely distinct from the neck.

The colour ranges from coppery red-brown to deep brick-red through to slate grey or black on the upper surface, usually grey-white on the underneath. Some adults have a prominent orange/red to brown streak underneath. This has led some people to the mistaken belief that the species is a red bellied black snake.



Adult length: 1 m to 1.5 m.

Habitat: Typically the forest edge on wetlands but occasionally in open, grassy areas. Although it is a fairly shy, retiring snake, it can be very defensive if disturbed.

Prey: Mainly frogs, lizards, smaller snakes and tadpoles. Grasshoppers rarely.

Behaviour: An active, alert hunter that is very shy with humans. They are considered inoffensive and retiring, preferring to retreat when disturbed. However, Copperheads have extremely quick reflexes and can operate at a lower temperature than Tiger Snakes (16° C compared to 18° C).

Fangs and poison: Large front fangs; moderate toxicity and amount.

White-lipped (Whip) snake

Whip-snakes are dark olive green to a green-grey on the back with a pale grey under-surface. A thin, white line runs along the upper border of the mouth. The eyes are small and the head small and rounded at the front. Sadly, they are often the target for pet cats living near bush areas and so may be brought inside homes.

Adult length: 0.25 m to 0.5 m.

Habitat: Dry forest where they shelter under leaf litter, logs or dead branches.

Prey: Very small lizards.

Behaviour: Very quick and shy, sometimes nocturnal. They can forage in winter on fine days since their small size allows them to heat up quickly.

Fangs and poison: Small fangs; moderate toxicity but small amounts. No known human deaths.

Fascinating adaptations

Locomotion: Movement is by belly muscles and scales which grip the surface beneath them. Most snakes climb well but they can not jump. Their fastest pace on flat ground is about a fast human walk. Snakes swim well and can stay submerged for considerable periods.

Temperature: Snakes are cold-blooded (poikilothermic) and control their temperature by behaviour. To warm up they sun-bask and to cool they use shade or water. Large snakes take longer to warm and longer to cool. A snake's ability to digest food and remain active is dependent on its body temperature.

The dark colour of many Tasmanian snakes is an adaptation to a cold environment, enabling them to absorb light and heat better than light coloured snakes. By doing this they can raise their body temperature quickly and become active, even in overcast conditions. Low environmental temperatures generally limit snake activity to the warmer months between October and March. Over winter they become inactive and can go for many months without food.

Breeding: Tasmanian snakes have novel ways of breeding to make the most of the short summer for raising young. Females store sperm in their oviducts over winter so that as soon as spring arrives, the eggs are fertilized and develop inside the mother. Young snakes are born live from late summer to mid-autumn. All Tasmanian snakes bear live young (viviparous). There is no maternal bonding between the young and adults. In fact some species have been known to be cannibalistic.

Poison: None of the Tasmanian snake species can truly inject poison, relying instead on it flowing down a groove in the fangs. However, in old snakes the groove overgrows forming a hollow tooth. Tiger Snakes make up for a poor delivery system by having a large quantity of very powerful venom. The venom of the white-lipped whip snake has never been recorded as causing death to a human. Tasmanian snakes cannot bite through shoe leather or gum boots.

Eating: Snakes swallow their prey whole and can digest large meals because of the elasticity of their digestive tract. This is assisted by their skull and jaw being modified to allow them to open very wide and swallow large prey. The lower jaw is made up of two halves which are joined by an elastic ligament at the centre front. The lower jaw can dislocate from the upper jaw.

By moving the left half and then the right half, snakes seem to ‘walk’ the prey in with their jaws, helped by a flow of saliva. They hold their prey with palate teeth.

To allow the snake to breathe when swallowing large prey, the windpipe is positioned to the front of the lower jaw. No Tasmanian snakes eat whole eggs. In nature no snakes eat carrion.

Skin-shedding: For a snake to grow, it must shed (slough) its skin and grow a new one. A snake's skin is not elastic and continuously renewing like ours. They have evolved with scales which are tough, to withstand moving against the ground and preventing water loss (dehydration). Sloughing is a hazardous time for snakes because they become vulnerable to predators and therefore during this time they need to find a warm, sheltered spot. Snakes continue growing and sloughing their skins all their lives.

Fact and not fiction

The forked tongue is not poisonous but is actually a sensing organ used to smell prey.

Snakes do not have external ears and cannot hear sound. Instead they detect sound by vibrations passing through the ground.

Snake skin is not slimy - normally it is dry.

Snakes are not attracted to milk beyond the fact that it is wet and easy to find by smell.

The venom toxicity of a juvenile snake is the same as that of an adult although the quantity they produce is much less.

Less than 10% of newborn snakes survive to adulthood. Most are eaten by natural predators, mainly birds, feral cats and humans.

In Tasmania the presence of the blue-tongued skink (lizard) is no indication that snakes are absent.

Tasmanian snakes will not attack people unless they feel trapped or threatened. It is easy to mistake a snake's bluff or an attempt to reach shelter, for an attack.

Roles and values

Like other natural predators snakes are important in regulating populations of their prey. Without such predators, prey species tend to overpopulate, leading to starvation and disease.

- Because Australia has few diurnal mammalian predators, birds and reptiles are very important. In Tasmania we do not have large goannas and therefore snakes are the most important reptile predators.
- Snakes are an important food source for a number of other animals such as birds of prey.
- Snakes eat introduced rodents and birds.

Snakes have other values. Many people enjoy watching them. Some populations, because of their long-term isolation, are excellent subjects for the study of evolution and competition.

Like all native species they have a right to exist. Tasmania snakes are protected by law in all state reserves.

Encountering snakes

Snakes may be seen in the most surprising places (including cities) especially when water is in short supply. It is best to leave them alone or watch them from uphill. If they must be disturbed, do it from a distance.

Although most will be just passing through, snakes do occasionally take up residence in suburban yards. During prolonged dry periods, they are attracted to gardens in search of water in rubbish, dog bowls, fishponds, swimming pools etc. Properties near scrubby creeks are especially prone to serpentine visits. To minimise such presence in your garden keep:

1. grass mown.
2. garden debris to a minimum.
3. wood heaps away from the house, and/or elevated 0.5 m above ground level.
4. under the house well sealed or very clear and dry.
5. standing water and wet spots to a minimum.
6. cracks in concrete sealed which may shelter lizards. Rockeries are a major attraction for lizards.
7. have a well maintained paling fence.



If you like snakes and want to encourage them it is easy to create attractive habitat.

Avoiding bites

Snakes are naturally shy animals and their first form of defence is to move away from danger. Contrary to popular belief, they will not deliberately chase humans, but if provoked or cornered they may bluff or even attempt to bite. Most people who have been bitten were attempting to kill or handle a snake or have trodden on it — an attack from the snakes' point of view. Although several people are bitten each year **the last person proven to be killed by a snake in Tasmania was a handler in 1977 and the last killed in the bush was in 1966!** The risks are very low. If you encounter a snake, the best thing to do is to let the snake go its own way.

To avoid being bitten you should:

- Step onto rather than over logs — a snake may be basking on the other side.
- Be alert at all times when in the bush, especially in the early morning during the warmer months when snakes are more likely to be sunning themselves but are slow to react. Wear shoes and trousers, instead of thongs and shorts.
- Avoid walking through long grass or reeds.
- Inspect hollow logs and rock crevices before putting a hand into them.
- Do not try and handle or kill a snake.
- Avoid snakes when sighted.

Snake bite

The venom is complex mixture of protein molecules containing neuro-toxins (nerve poisons). If enough is injected the nerves controlling the heart and lungs are adversely affected and death may result. Once in the body, poison of Tasmanian snakes flows through the lymphatic system (just under the skin), not the blood vessels. A tourniquet is **not** required.

The fangs of Tasmanian snakes are not particularly efficient so a lot of the poison is lost on the skin's surface or on garments that the snake may have bitten through. Outside the body the poison is harmless.

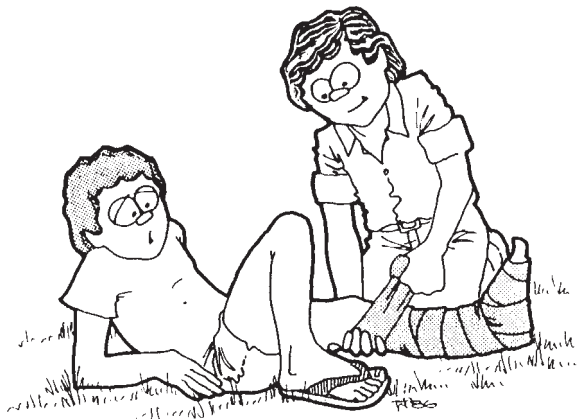
First aid

One of the early symptoms of Tiger Snake bite is a massive frontal headache.

1. Stay calm! Fear often leads to shock which makes the situation more dangerous.

Reassure the victim at all times. The chances of death are very small. Record information on allergies and medications of the patient. There is always a chance of unconsciousness. Record pulse rate.

2. Bandage the bitten area immediately with a broad, firm bandage, preferably elastic based (e.g. a sports bandage), and cover as much of the surrounding area or limb as



possible and leave it covered. Bites are usually on a limb so bandage the whole limb starting from the extremity and working up the limb. Do not remove the bandage. A tourniquet is not recommended.

3. Immobilise the bitten area immediately — if the bite is on a limb, secure with a splint.

4. Bring transport to the victim, if possible, for transfer to medical care.

5. Seek medical help.

6. Treat the symptoms, give Cardio-Pulmonary Resuscitation if necessary.

7. DO NOT cut the bitten area.

8. Snake identification is not necessary in Tasmania as all our native snake bites are treated with the same anti-venom (the same may not apply if you are bitten by a snake someone has brought into the state).

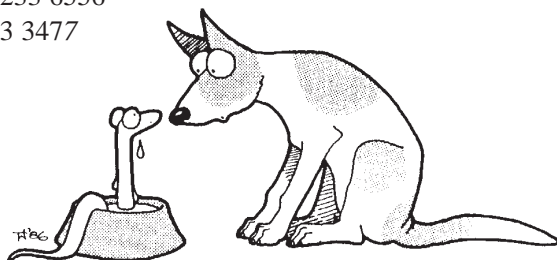
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