Does Australia really have the deadliest snakes? We debunk 6 common myths

September 29 2020, by Damian R. Michael, Dale Nimmo, Skye Wassens

A red-bellied black snake. Credit: Damian Michael, Author provided

As we settle into spring and temperatures rise, snakes are emerging from their winter hideouts to bask in the sun. But don't be alarmed if you spot one, it's hard to imagine a more misunderstood group of animals than snakes.

Our interactions with snakes are conversation starters, with yarns told and retold. But knowing what's fact and fiction gets harder with each

retelling.

As is so often the case with wildlife, the myths pale in comparison to what science has shown us about these incredible creatures. So let's debunk six misconceptions we, as wildlife ecologists, often hear.

1. Black snakes and blue tongue lizards keep brown snakes away

This is a common old wives' tale in southern Australia. The myth goes that if you see a red-bellied black snake or a blue-tongue lizard on your property, you're unlikely to see the highly venomous brown snake, because black snakes keep brown snakes at bay.

This myth probably originates from observations of black snakes eating brown snakes (which they do).

But it's not one-way traffic. There are many reported examples of brown snakes killing black snakes, too. Overall, no scientific evidence suggests one suppresses the other.

There is also no evidence blue-tongue lizards prey upon or scare brown snakes. In fact, many snakes feed on lizards, including brown snakes which, despite a preference for mammal prey as adults, won't hesitate to have a blue tongue for lunch.

2. Snakes are poisonous

While the term poisonous and venomous are often used interchangeably, they mean quite different things. If you eat or ingest a toxic plant or animal, it's said to be poisonous, whereas if an animal stings or bites you and you get sick, it's venomous.

Venom is a specialized type of poison that has evolved for a specific purpose. For venom to work, it needs a wound to enter the body and into the bloodstream. Snakes, therefore, are generally venomous, not poisonous.

But there are exceptions. For example, the American garter snake preys on the rough-skinned newt which contains a powerful toxin.

The newt's toxin accumulates in the snake's liver, and effectively makes this non-venomous snake species poisonous if another animal or human eats it. Remarkably, these snakes can also assess whether a given newt is too toxic for them to handle, and so will avoid it.

3. Australia has the deadliest snakes in the world

Approximately 20% of the world's 3,800-plus snake species are venomous. Based on the median lethal dose—the standard measurement for how deadly a toxin is—the Australian inland taipan is ranked number one in the world. Several other Australian snakes feature in the top 10. But does that make them the deadliest?

It depends on how you define "deadly." Death by snake bite in Australia is very uncommon, with just two per year, on average, compared to 81,000-138,000 deaths from snakes annually worldwide.

If we define "deadly snakes" as those responsible for killing many people, then the list would be topped by snakes such as the Indian cobra, common krait, Russell's viper and the saw-scaled viper, which occur in densely populated parts of India and Asia.

A lack of access to antivenoms and health care contribute substantially to deaths from snake bites.

The toxins from the rough-skinned newt can stay in a garter snake's liver for up to a month. Credit: Steve Jurvetson/Wikimedia, CC BY

4. Snakes have poor eyesight

Compared to other reptiles, such as monitor lizards, most snakes have poor eyesight, especially species that are active at night or burrow in soil.

However, snakes that are active by day and feed on fast-moving prey have relatively good vision.

One study in 1999 showed people are less likely to encounter eastern brown snakes when wearing clothing that contrasted with the color of the sky, such as dark clothing on a bright day. This suggests they can see you well before you see them.

Some snakes such as the American coachwhip can even improve their eyesight when presented with a threat by constricting blood vessels in the transparent scale covering the eye.

And then there's the olive sea snake, whose "phototactic tails" can sense light, allowing them to retract their tails under shelter to avoid predation.

Credit: AI-generated image (disclaimer)

5. Young snakes are more dangerous than adults

This myth is based on the idea juvenile snakes can't control the amount of venom they inject. No evidence suggests this is true.

However, research shows the venom of young and old snakes can differ. A 2017 study showed the venom of young brown snakes is different to adults, probably to facilitate the capture of different types of prey: young brown snakes feed on reptiles, whereas adult brown snakes predominantly feed on mammals.

But it's not just age—venom toxicity can vary among individuals of the same population, or among populations of the same species.

6. Snake are aggressive

Perhaps the most pervasive myth about snakes is they're aggressive, probably because defensive behaviors are often misinterpreted.

But snakes don't attack unprovoked. Stories of snakes chasing people are more likely cases where a snake was attempting to reach a retreat site behind the observer.

When threatened, many snakes give a postural warning such as neck flaring, raising their head off the ground, and opening their mouths, providing clear signals they feel threatened.

It's fair to say this approach to dissuade an approaching person, or other animal, works pretty well.

Rhesus macaques display more fearful behavior when confronted with snakes in a striking pose compared to a coiled or elongated posture. And showing Japanese macaques images of snakes in a striking posture sets of a flurry of brain activity that isn't evoked when they're shown images of snakes in nonthreatening postures.

The same is true for humans. Children and adults detect images of snakes in a striking posture more rapidly than a resting posture. And a study from earlier this year found human infants (aged seven to 10 months) have an innate ability to detect snakes.

Snakes are amazing, but shouldn't be feared. If you encounter one on a sunny day, don't make sudden movements, just back away slowly. Never pick them up (or attempt to kill them), as this is often when people are bitten.

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