

ABOUT SNAKES

Snakes are protected in Australia under the federal Environmental Protection and Biodiversity Conservation Act 1999, and flora and fauna protection Acts in each state and territory. Despite these protections, snakes are still villified and deliberately killed; even when the animal is not posing a threat, and just happens to come into contact with a human predator who typically lacks a basic understanding of snake behaviour and who have grown up on a steady diet of myths and misinformation..

It is illegal to kill snakes, unless there is a direct threat to human life. That threat, however, is simple to avoid. When a person moves toward a snake, they are creating the threat to themselves and their life. If they simply stay away from it, there is no threat. It really is child's play!

Snakes are important to the health of Australia's ecosystems, and play an important role in how an ecosystem functions.

Because snakes are so misunderstood, the myths that surround them have persisted for centuries. However, the more we learn about snakes and their behaviour, we grow to have a better appreciation for them. Some even grow to love snakes...like other people love puppies.

There are many resources available that try give the general public information about how to respond to a snakes when they are encountered. There are also many websites and social media platforms that debunk myths; the same myths, over and over again.



Eastern brown snake...no, seriously...this really is an eastern brown, *Pseudonaja textilis*

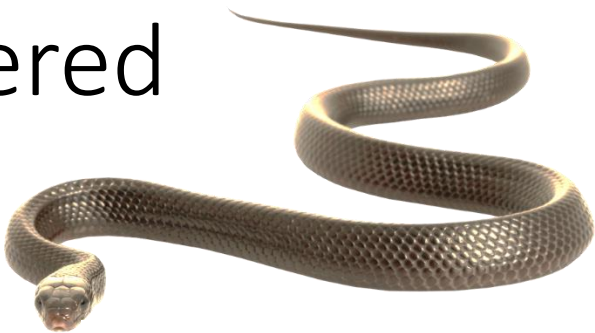
Let's try this....

No myth debunking
No lectures
No persuasive statements

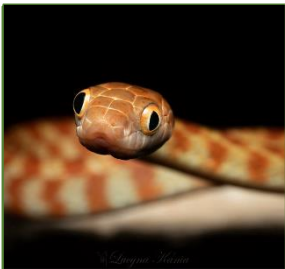
Let's just learn about snakes....

- what species do we have in Australia?
- where do they live?
- how are they identified?
- how can I tell the difference between one snake and another?

Snake species encountered by humans most often



<Ctrl> Click on a Baby to View the Species



brown tree snake
Boiga irregularis



carpet python
Morelia spilota



coastal taipan
Oxyuranus scutellatus



eastern brown snake
Pseudonaja textilis



eastern small-eyed snake
Cryptophis nigriscens



highlands copperhead
Austrelaps ramsayi



keelback
Tropidonophis mairii



lesser black whipsnake
Demansia vestigiata



lowlands copperhead
Austrelaps superbus



marsh snake
Hemiaspis signata



mulga
Pseudechis australis



red-bellied black snake
Pseudechis porphyriacus



rough-scaled snake
Tropidechis carinatus



scrub python
Simalia kinghorni



spotted black snake
Pseudechis guttatus



tiger snake
Notechis scutatus

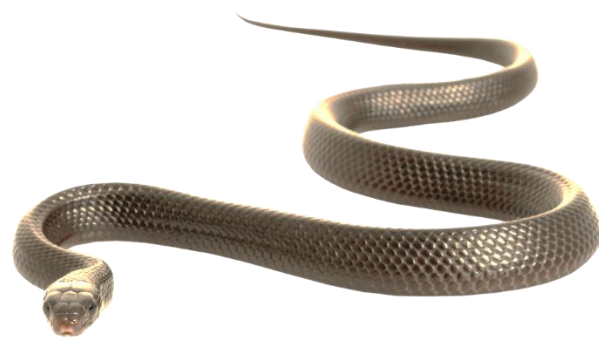


white-lipped snake
Drysdalia coronoides

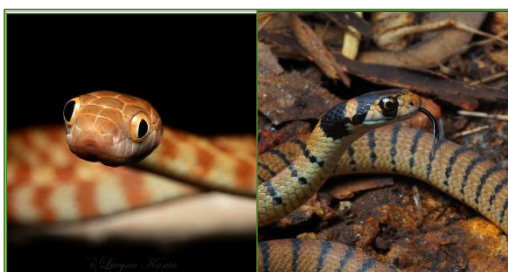


common tree snake
Dendrelaphis punctulatus

Compare commonly misidentified snakes



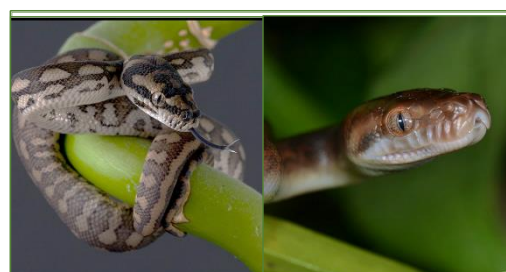
<Ctrl> Click to Compare a Pair



brown tree & eastern brown
B. irregularis & *P. textilis*



brown tree & tiger
B. irregularis & *N. scutatus*



carpet & scrub pythons
M. spilota & *S. kinghorni*



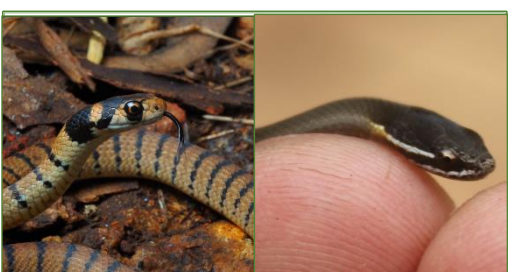
eastern brown & coastal taipan
P. textilis & *O. scutellatus*



eastern brown & keelback
P. textilis & *T. mairii*



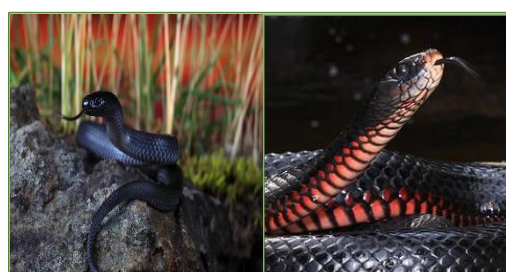
eastern brown & lesser black whip
P. textilis & *D. vestigiata*



eastern brown & marsh
P. textilis & *H. signata*



eastern brown & mulga
P. textilis & *P. australis*



eastern small-eyed & red-bellied black
C. nigrescens & *P. porphyriacus*



highlands & lowlands copperheads
A. ramsayi & *A. superbus*

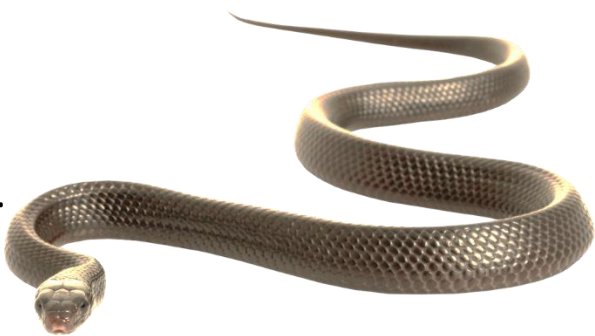


highlands copperhead & tiger
A. ramsayi & *N. scutatus*



keelback & rough-scaled
T. mairii & *T. carinatus*

Compare commonly misidentified snakes cont.



<Ctrl> Click to Compare a Pair



mulga & spotted black
P. australis & *P. guttatus*



red-bellied black & spotted black
P. australis & *P. guttatus*



mulga & tiger
P. australis & *N. scutatus*



rough-scaled & tiger
T. carinatus & *N. scutatus*



marsh & white-lipped
D. coronoides & *D. coronoides*



SNAKE SCALES

The identification of a species is a process...a puzzle to be solved

Each species has an almost unique scale arrangement. Some have large scales covering the head, while others have small, fragmented head scales. Species differ in the number of rows of scales it has down its back, or whether a particular scale is split in two (divided) or not split (single).

There are specific scales (diagnostic characters) used to identify a species;

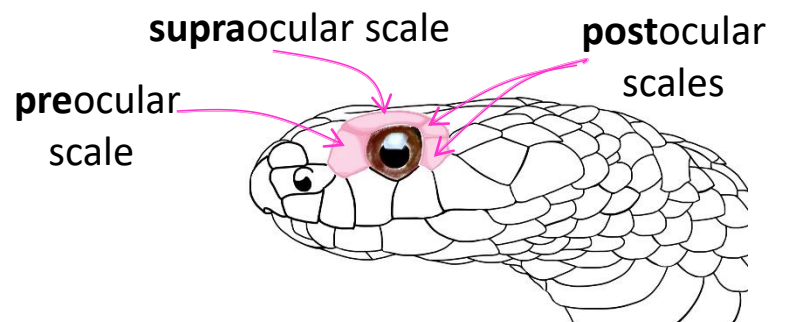
- the shape
- the way they fit together (scale arrangement)
- the count (how many?)

The diagnostic characters are described by name, and by the location on the body and the position relative to other scales of the same type. This might take a bit to learn, but you'll get the hang of it the more familiar you become with snakes and their scales.

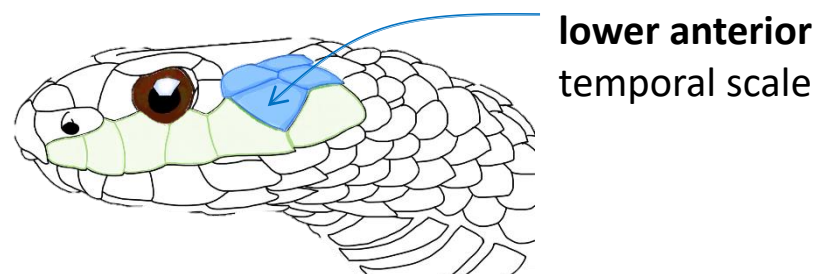


Examples:

1. the **ocular** scales
 - surrounding the eye



2. the **temporal** scales
 - located on the temple



This snake has 4 temporal scales, two at the front (**anterior**), and two more behind those (**posterior**). The two at the top are the **upper** temporals and the two at the bottom are the **lower** temporals.

Therefore, which scale is the **lower anterior** **temporal** scale?

NEXT

SNAKE SCALES & SCALE ARRANGEMENTS

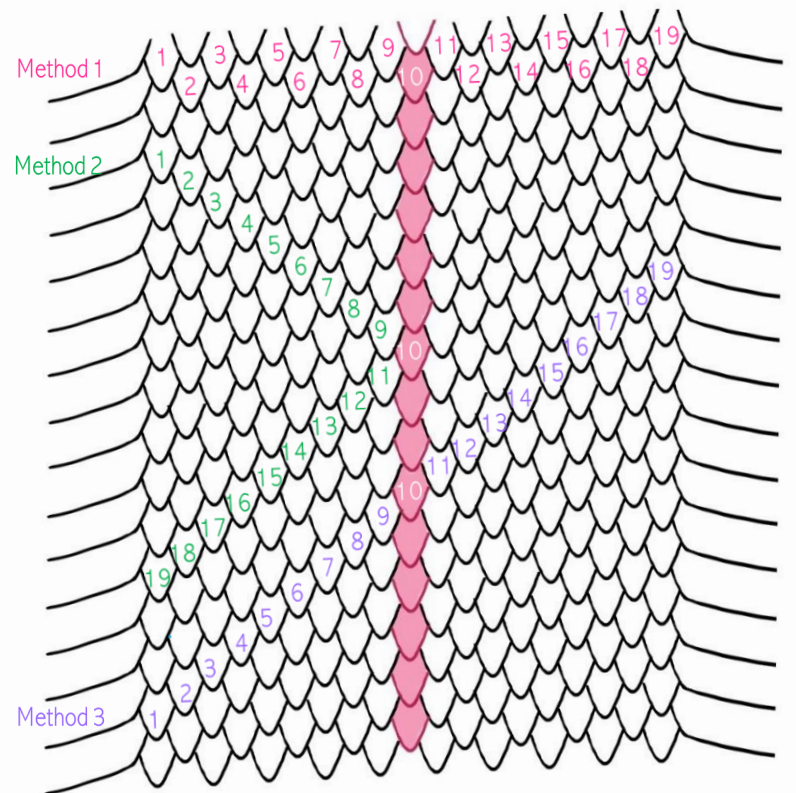
Midbody scale count

The number of longitudinal scale rows across the midbody differs between species.

It is important for identification, that the midbody count is taken at the midbody and not another location across the dorsal surface of the snake.

The midbody is located at the midpoint between the base of the skull and the start of the tail.

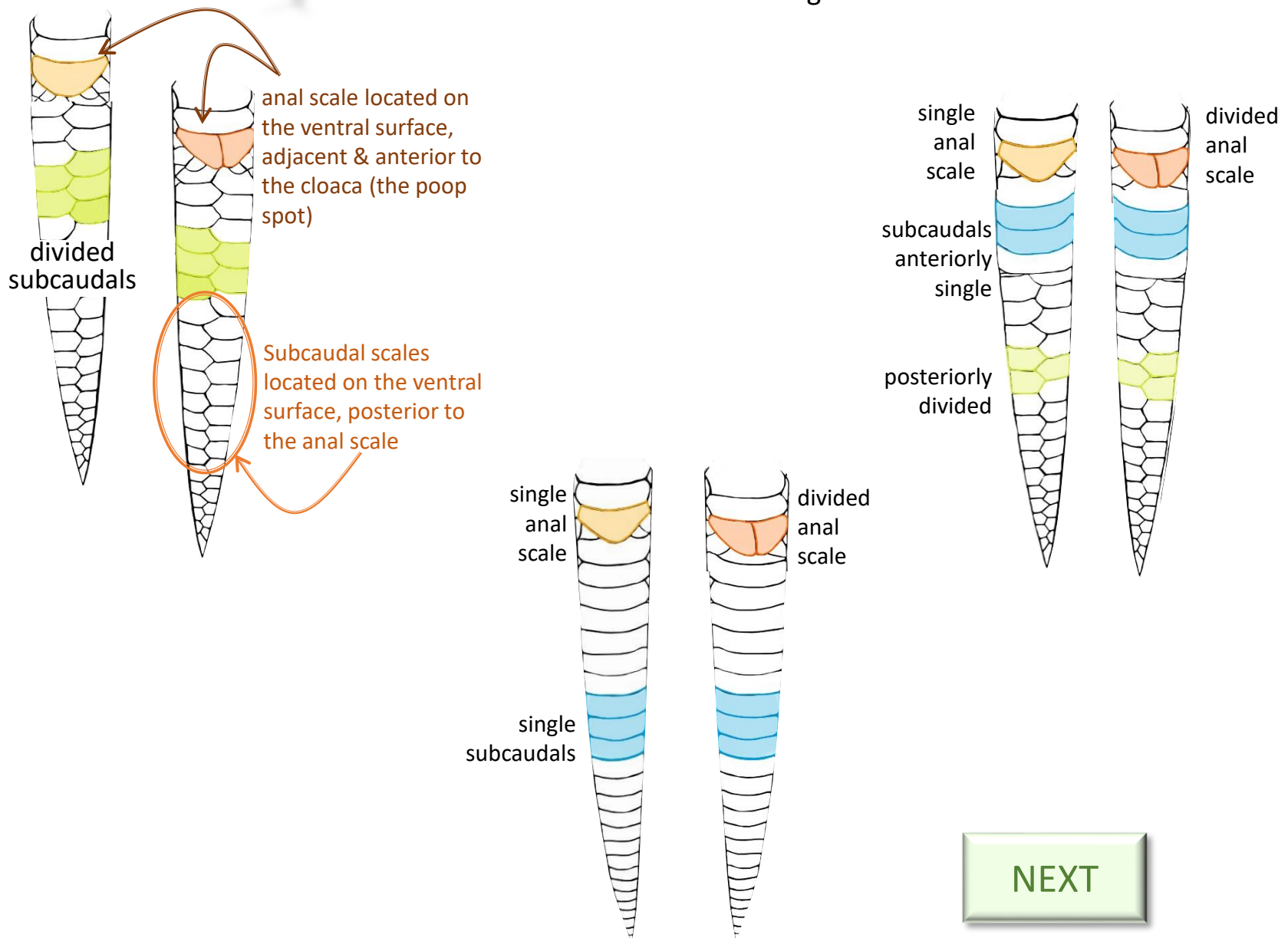
There are three methods for counting the rows across the midbody, as shown below.



Posterior ventral scales (under the tail, touching the ground)

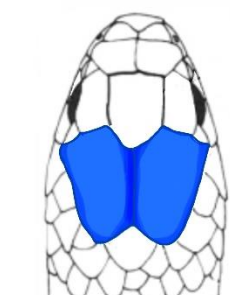
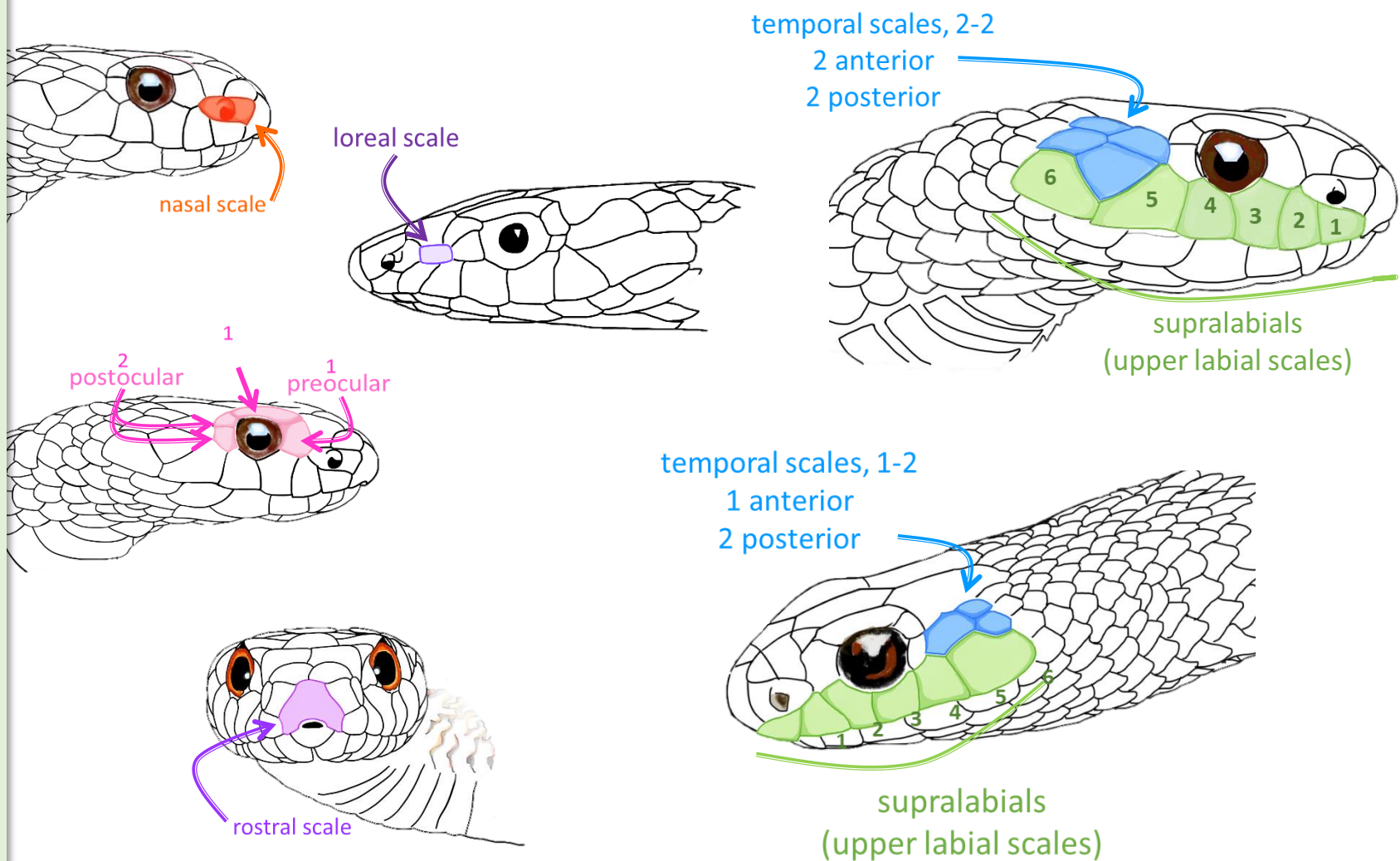
1. anal scale – is it single or divided?
2. subcaudal scales – are they single, divided, or half and half?

There are a bunch of different configurations....

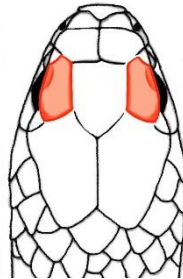


SNAKE SCALES & SCALE ARRANGEMENTS₂

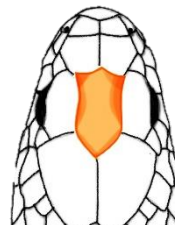
The head scales — what are they called and how are they arranged?



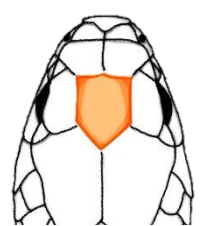
parietal scales



supraocular
scales

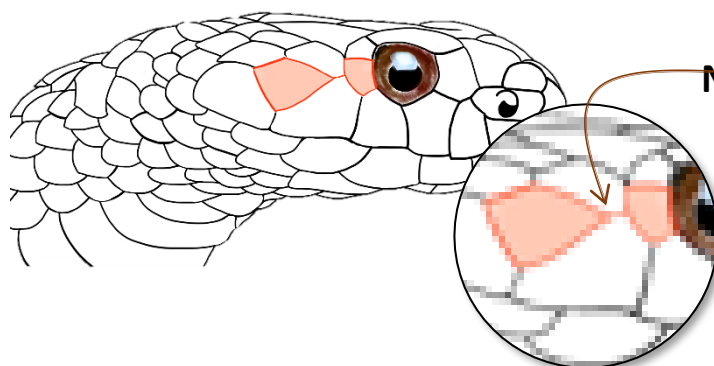


rectangle

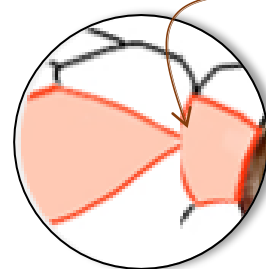


square

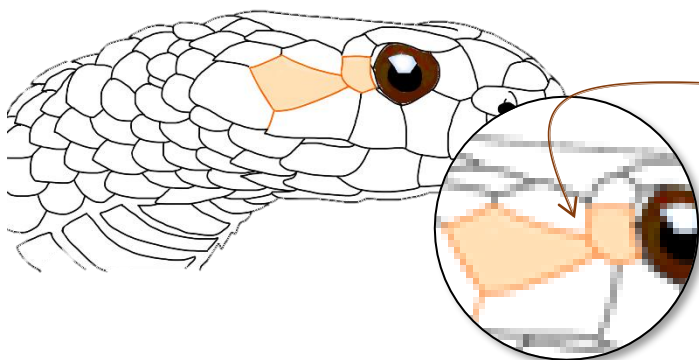
frontal scale



NO contact



The lower anterior
temporal scale is in
POINT contact with the
lower postocular scale



BROAD contact

LET'S GO!

Snakes species are distributed across Australia to fill specific ecological niches. For example, the lowlands copperhead (*A. superbus*) is a cooler climate, ovoviviparous species whose distribution is limited to southern Victoria and Tasmania, while the spotted mulga (*P. butleri*) only occurs within a limited range in central Western Australia. Therefore, you know that the chunky, speckled, black coloured snake that you found in Alice Springs is NOT a spotted mulga; because that species does not occur in that location.



unidentified snake
found here

1. LOCATION

Based on the location, you can immediately eliminate many species and focus only on the species that occur within your target location...near Rockhampton, Qld.

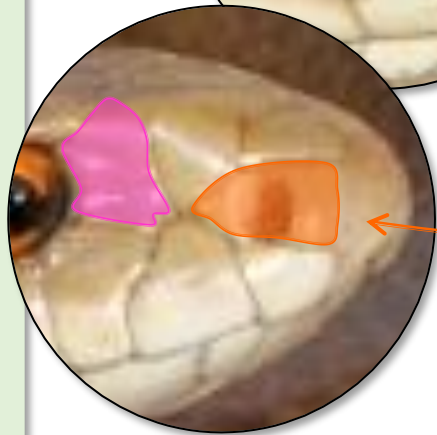
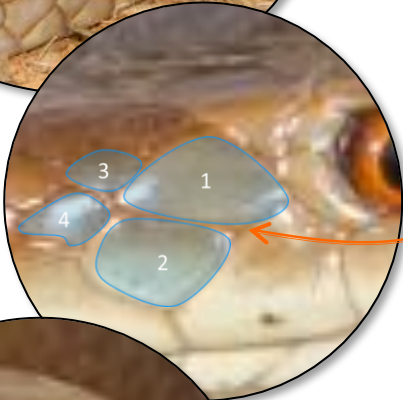
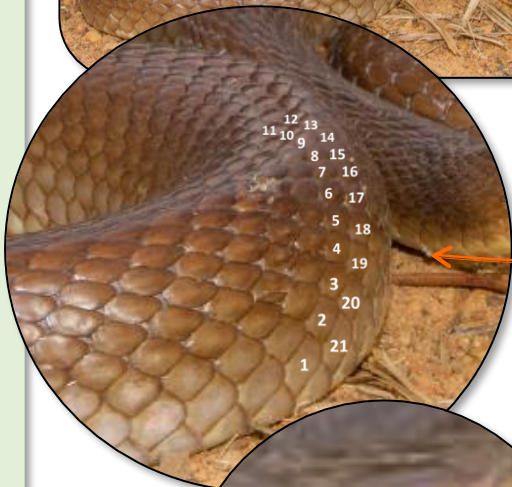
Elimate all of the species that occur outside that area and there are only 28 species that occur in and around that region (excluding blind snakes).

DO NOT HANDLE THE SNAKE! Take a photo of the animal



2. MIDBODY SCALE COUNT

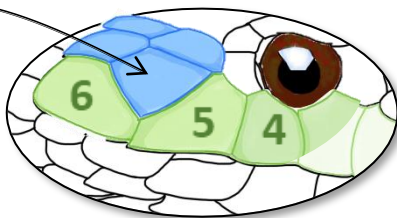
Find the midbody and using the most appropriate method, count the rows. In the example, the midbody is around the bottom centre of the photo. The snake has a midbody scale count of 21.



3. OTHER DIAGNOSTIC CHARACTERS

The temporal scales have a 2-2 arrangement; 2 anterior temporals, and 2 posterior temporals, for a total of 4. The **lower anterior temporal scale intrudes** between the 5th & 6th upperlabial scales.

The preocular scale and the nasal scale have NO contact.



Try and identify this snake using the visual key.

ID KEY

The answer is [here](#).

The same process is used to identify a slough (a skin that's been shed, pronounced SLUFF). However, determining species from a slough is far easier, as you are able to handle it and closely study both the dorsal and ventral surfaces, which is not possible with a live animal.

SLOUGH ID

HOME

SNAKE
PROFILES

COMPARE
SNAKES

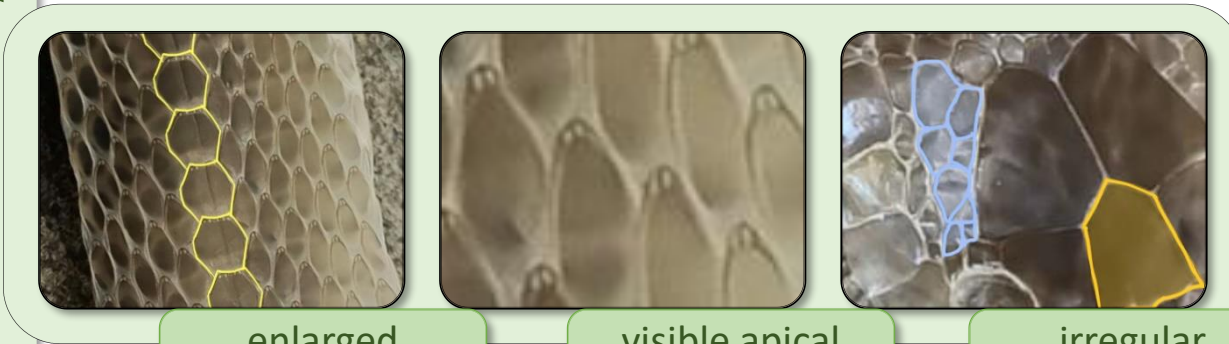
SLOUGH IDENTIFICATION

B. irregularis

1. Head and body slough found hanging in a tree ...



examine the features and take note of the scale arrangement

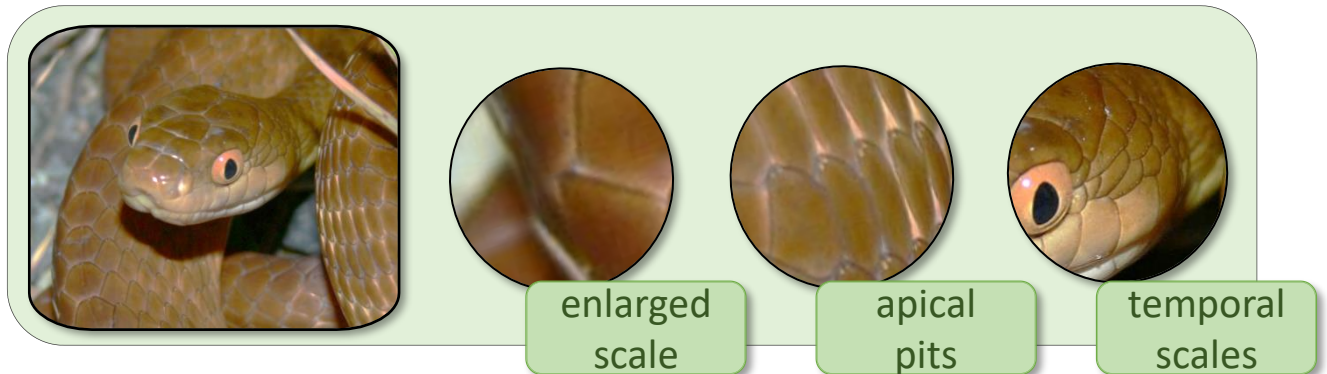


enlarged vertebral scale

visible apical pits

irregular temporal scales

compare the scale arrangement to photos of a snake you suspect has similar characteristics



enlarged scale

apical pits

temporal scales



are there other scales that are the same size and shape?



the frontal scales on the slough & the photo of the live snake, are the same shape



The final step might be to do a midbody count, and to examine the anal and subcaudal scale arrangement.

The two pieces of slough used in the example came from a brown tree snake.



Snake identification by slough is a puzzle that can be easily solved by using the process of elimination described in the **tutorial**. Each species has an almost unique scale arrangement.

Unlike identifying live animals, slough identification can be hands-on. It's a great way to learn the diagnostic characters for each species.

BACK

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