Reptiles and amphibian behaviour

Understanding how a healthy reptile and amphibian should look and act takes a lot of observation and practice. Reptiles and amphibians have behaviour that relates to them naturally being:

- ectothermic—obtaining heat from the environment
- Aestivation—avoiding hot, dry conditions
- territorial.

Other behaviours relate to their:

- breeding patterns
- need for a photoperiod—period of exposure to light.

Body temperature and behaviour

Reptiles and amphibians are ectothermic which means that they warm themselves with heat from the environment. As temperatures vary, their behaviour will also vary. This means on a cool day or first thing in the morning after a cool night they will appear sluggish and less responsive. Some may be more aggressive as they try to compensate for their inability to move fast.

Reptiles do not have skin or fur to inspect so we must go by the condition of their scales, which should have a healthy sheen. However, if they are about to shed, the scales will lack lustre and may even be peeling off. The reptile usually stops eating too, so it is important to know this and not try to force feed the animal during a shed. Some reptiles lose their skin in a single shed, whereas others will lose it in pieces.

It is important to know which way your reptile should shed. For example, a snake usually loses its skin as a whole piece. The usual reasons for a snake shedding in bits are injuries, scar tissue or if the humidity in its environment is incorrect.

Reptiles should be alert and responsive if at their preferred body temperature. Some will become immobile at the threat of danger, hoping that their camouflage will protect them, eg chameleon, where others will attempt to leave if the danger is too close—eg snakes.
Tortoises and turtles are usually alert, swim on an even keel and can move quickly when approached. When handled they will retract their head, legs and tail into their shell and these can be very difficult to extract! When they walk, they lift their bodies and support all their weight on their legs and not on the plastron, the underneath of the shell.

Examples of ectothermic behaviour

On very hot days, reptiles and amphibians will look for shade and water to keep cool, rather than overheat. On cool days they will look for warm sunny spots. They will also lower their body closer to a warm stone and/or align their bodies along the sun rays as they bask to raise their body temperature. Some species will even change to a darker colour to absorb more heat.

An example of body heat conservation behaviour is seen in the Banded Knob Tail Gecko from Western Australia. This gecko, when exposed on very cold ground with surface temperatures less than 8°C, scrapes a depression and then scoops loose soil onto its back with its front legs. This is thought to help them conserve their body heat as well as acting as camouflage.

As it gets colder reptile and amphibian metabolic rate will slow down until they eventually have to hibernate until the warmer weather returns. Reptiles in cold conditions will be sluggish and slow to respond.

Aestivation

Aestivation is an instinctive retreat from hot, dry conditions. It is common in the wild when many ground frogs and tortoises will dig themselves into the bottom of a river or dried up creek until conditions are right again.

Most Australian amphibians do this in summer and during drought conditions.

Territorial behaviour

Some reptiles are territorial. Lizards often have a burrow to which they retreat. Most reptiles and amphibians are shy, preferring to hide from humans and other large animals.

Breeding behaviour

The sexual display of chelonians takes place in spring and male tortoises can be very aggressive towards other males and even towards females, chasing them and biting at their head, feet and tail.
Some male lizards are aggressive towards other males, starting with a gaping mouth, inflated body and stiff movements. If this does not work, they will fight.

Many male snakes take part in a combat dance in which they try to force the other away. Copulation in snakes may last for several hours.

Male crocodiles will not allow another male to enter the pool, threatening them and hitting them with the side of their head.

Photoperiod

Photoperiod is the period of exposure to light. Sufficient photoperiod is important for snakes, and captive snakes. Constant light is very stressful.

Sunlight or UV light must be available as it is used in the manufacture of vitamin D which is very important for the uptake of calcium from the diet. Glass filters out UV so just having a glass fronted cage in a sunny room is not enough.

Reptiles normally kept indoors when placed in direct sunlight will become increasingly active. Rain can also produce a sudden burst of activity.

Amphibian behaviour

The skin of amphibians is not waterproof, which means they can lose a lot of body water on warm days. For this reason, frogs are most active at night when they will hop about in search of food or a mate. During the day, they find a hiding spot and wait until the heat and light of the sun has passed.

Most people only realise that frogs are about when they hear frogs calling near a pond or stream.

Breeding behaviour of frogs

Each frog species makes its own peculiar sound, but it is the male frog that does all of the calling to attract the females.

An exception to this is seen in the male Eungella Torrent Frog which lacks vocal sacs. Instead of calling for a mate they try to attract them by waving their ‘hands’ and ‘feet’. They then approach the female and touch her with their hands and nuzzle her with their chin.

If the female frogs are also ready to breed, they will approach the male frog. He will climb onto her back (this embrace is called amplexus), and she will carry him to the egg laying site. As she releases her eggs, the male frog
releases sperm over the eggs. Fertilisation occurs outside of her body, usually in pond water. The fertilised eggs develop and hatch to produce tiny tadpoles.

**Feeding behaviour**

The carnivorous reptiles and amphibians that eat live prey tend to be extremely quick once they strike at a particular food item.

The animal is then usually eaten alive, for example:

- frogs will munch on a live mealworm without killing it first
- pythons will hold their prey until it suffocates
- venomous snakes use venom to kill their prey.

Reptiles find their prey by sight, smell, body heat sensing and/or vibrations which are picked up through the reptile’s body as the prey moves. Usually the strike is quick and the prey is small enough that it can be eaten almost whole.

As most reptiles and amphibians have poorly developed teeth and tongues, they do not tend to bite chunks or chew their food. One of the ways swallowing is done by is through gulping motions to move the prey along inside the oral cavity.

**Snakes**

Venomous snakes use their sense of smell and their tongues to pick up vibrations from their intended prey. Once it is located they will strike very quickly, catching and holding the animal in their mouth until the venom has time to take effect.

Pythons locate their prey by using these senses and the heat sensing ‘pits’ on their jaw. They, too, strike quickly holding their prey in their mouth then throwing coils around it which they then tighten. This stops the animal from being able to expand its chest to breath and they suffocate.

Snakes then swallow their prey whole and usually head first. A snake’s upper and lower jaws do not attach at the symphysis allowing them to have a very wide gape with which they can grasp large prey. They then swallow it by ‘walking’ along it with the four jaws working independently.

Reptile keepers need to be very careful to wash their hands thoroughly to remove all scent of the prey if they have been handling carnivore food. Otherwise, these reptiles will strike at the keeper’s hands, mistaking them for their prey.
**Turtles**

The vegetarian species tend to be clumsy eaters as they either have no teeth or only poorly developed teeth. Consequently they have to bite chunks off the food item and then swallow it more or less whole, using the same gulping action as described above.

In this photo you can see this Galapagos Tortoise has no teeth, nor is it equipped to run down and capture live prey. They are vegetarian and feed slowly, using their horny ‘beak’ to bite off chunks of vegetables or fruits which are then swallowed whole.

**Housing together**

To minimise stress, reptiles should be kept out of sight of the same or similar species, if possible. All reptiles should be provided with some sort of hide box. Providing a snake, lizard or chelonian—turtle or tortoise—with a secure, dark place to hide is ideal to make them feel secure.

**Snakes**

Snakes should be housed alone. They should only be placed together for breeding. Larger snakes may consume smaller ones. Two snakes in the same container could both strike at a prey item and both may start eating it from opposite ends, with the larger snake ending up eating the smaller one along with the prey item.
Geckos

Geckos are an exception regarding housing. It’s common practice to house a group of females with one male, for breeding purposes. But, it’s still poor practice to house several males together as they can fight and cause injury to each other.

Water turtles

Water turtles may be housed together successfully if they’re all close to the same size and a few aren’t nipping at the others. A general rule is that all the residents’ shells shouldn’t exceed 25 percent of the cage floor surface. Aggressive species should only be housed with similar species of the same size.

Land tortoises

Land tortoises can often be housed in groups of similar species. If several are kept together, the cage should be as large as possible. Land turtles and tortoises are usually quite gentle and don’t harass each other. However, observe them closely for any signs of negative interactions and remove the aggressive ones.