



# THE ECHIDNA

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**The echidna is an extremely secretive animal, and it is extremely sensitive to vibrations on the ground. Echidnas have a domed-shaped back with short stubby tail, no obvious neck, and a flat belly. Back and sides are covered with spines of varying sizes and lengths.**

The echidna is easily recognisable by the covering of spines across its body which is a safety mechanism for the animal. These spines are yellow to golden with a black to brown tip. Between the spines is soft hair, longer in cooler climates and shorter in warmer areas. (In Tasmania the fur sometimes obscures the spines.) Echidnas have five toes on both the front and hind limbs, on the hind limbs they have two to three grooming claws (depending on the species). The pads of the front feet are full and firm in healthy animals. They contain mechanoreceptors that pick up vibrations from crunching feet, breaking vegetation and probably food sources.

The echidna's snout is between seven and eight centimetres long and is stiffened to enable the animal to break up logs and termite mounds when searching for food. They are key cultivators that enhance soil aeration,

moisture penetration, nutrient mixing, seed dispersal and spread of mycorrhizae. Adult echidnas vary in size from 30-53 centimetres, with males weighing six kilograms and females 4.5 kilograms. Echidnas can live for more than 50 years.

You cannot sex an echidna simply by looking at the animal. There are no external genitals. Both males and females can form a pouch. Both males and females can retain or lose the spur on the hind foot. Size and weight of an animal is not an indication of gender. The male echidna does not use the penis for urination. It is located internally and is only outside of the body when used for copulation. Until a male echidna has reached sexual maturity, it can be extremely difficult to find evidence of the penis. However, it is not impossible because a mature echidna can be palpated, especially during the courtship and breeding season.

The echidna has small external eyes, but sense of sight is highly developed. They quickly recognise human shape so it is best to sit or kneel in order to break up the normal towering human silhouette.

When threatened, the echidna can dig very quickly and bury itself in the soil, or curl into a tight ball with its snout and legs tucked beneath it and raise its spines, or quills so that it cannot be handled easily. The echidna can be found throughout all of Australia wherever there are ants or termites present, as this is its main diet source. The echidna has no teeth, but a very long tongue, which extends into ant mounds. Its tongue is around 18 centimetres long and coated with a sticky saliva substance which the ants stick to. Dirt and ant nest material is also ingested.

The echidna is a solitary animal, not territorial, but occupying overlapping ranges. Its home range can be in excess of 250 hectares, depending on food availability and habitat. Echidnas do not have fixed nest sites. Nests are only used for incubating and suckling the young, which are called puggles. Normal shelter is under thick bushes, hollow logs and other debris, and the echidna will often use rabbit and wombat burrows as well. During extreme weather such as intense heat, the echidna will shelter for most of the day, and will forage at night. In cold weather, as seen in the Snowy Mountain region of NSW, the echidna will hibernate. The echidna can be found throughout all of mainland Australia and Tasmania.

The echidna and platypus are the only Australian marsupials that lay eggs and do not bear live young.

Egg-laying mammals are called monotremes. There are only three kinds of monotremes in the world: the long-beaked echidna (three species – all residing in New Guinea), short-beaked echidna (found throughout Australia in all climatic conditions and ecosystems within the Australian bioregion), and the duck-billed platypus (found only in certain places in Australia).

**Above:** The taxonomic family name for echidna – *Tachyglossidae* – means “fast tongue”.

Normally a solitary animal, sexual maturity for the male is reached between seven to twelve years of age. For a female it is earlier and she can produce her first young at five or seven years of age. During mating times it is not unusual to see a female echidna have a train of males, head to toe, following her – up to eleven males have been seen making this train. Courtship trains can last between two and 60 days.

Echidna breeding period is between late June and early September. Echidna copulation lasts between thirty minutes and two hours.

There are no verified methods of ageing adult echidnas. However, there are two distinct stages in the life of an echidna puggle from its hatching to weaning:

**Pouch life:** For approximately the first 50 days the puggle lives in the mother's pouch. Pouch young can be divided into two further stages - from hatching up to approximately 12 days of age when the young is moist, shiny and lives in a humid pouch. From 12 days onward the pouch is dry.

**Burrow life:** From about 50 to 120 days of age (about 30 weeks) the young lives in a burrow. After weaning the young is independent. There is no parental guidance or contact with other echidnas after weaning until sexual maturity is reached.

### Pouch life

The female echidna lays a single, leathery egg the size of a grape every breeding cycle and their breeding cycle is individualistic – it can be as infrequent as once every five years where a male echidna can be sexually active each year. The mother echidna then rolls the newly laid egg into a deep pocket or pouch located on her belly to keep the egg safe, which is then incubated. The pocket or pouch is really more like a fold of skin over the abdomen area which is closed with contracting muscles.

The newborn is called a puggle, it is hatched around ten to eleven days later and is less than 1.3 centimetres long and around 0.3 of a gram, smaller than the size of a jellybean! Luckily for the mother the puggle is not born with spines, instead it is a tiny mass of pink flesh. The puggle uses its tiny,



Puggles will stay within their mother's den for up to a year before leaving.



The front foot has five toes the same as the hind foot but is without the grooming claws. This echidna is healthy because of its fat pads under its feet.



This skeleton was most likely put together in a museum, the tibia and foot of the hind leg are rotated in the incorrect position (thanks to Peggy Rismiller for seeing this). Photo credit Wikipedia

# In the Wild

with Harry Butler

There's something else that's not a bird, though it does lay eggs. It's something special – probably the most primitive mammal in the world, except for the platypus. It's the Echidna or Spiny Anteater. As soon as it sees me he goes into his defensive position – but the poor fellow's got one problem: his hind claws are so well developed for digging that one has to stick out. If you touch one it retreats, but the other one has to poke out, so you can get a grip on him. It's the one weakness in his protection against foxes and dingoes and other predators.

He has a lovely long nose and seven inches of tongue. He's out hunting for termites: most mammals here come out at night, but this one's an exception. He comes out in the afternoon and goes termite-hunting, scuffling around in the bushes looking for termites which live just under the surface. He digs with his powerful claws and then ... slurp! Seven inches of instant death goes up the tunnel and zaps the termites. He eats about three or four thousand of them in a day.

His back claw is very long for obvious reasons: how do you scratch yourself if you get an itch under all those prickles? That long claw is for getting in among the spines and having a good old scratch, because he gets ticks and lice the same as other things do in the bush.

He's threatened by one of our introduced animals, the fox, who's learned a way to handle Echidnas. The fox comes along, the Echidna sees him and rolls up in a tight ball. The fox will roll him with his nose to a pool of water, if there's one handy, and as soon as he hits the water the Echidna unrolls to start swimming and – zap! The fox has got him, because the belly underneath is soft and unprotected.

see-through claws to grip the special hairs within the mother's pouch. The mother does not have nipples the way other mammals do. Instead, the little puggle will suck at milk that is excreted from special glands on the skin in her mother's pouch. The puggle is carried in the pouch for about 53 days when its spines begin to break through. At this stage the mother leaves it in a nursery burrow and the puggle is left alone. The mother blocks up the entrance to the burrow to stop the puggle crawling out. Temperature in the burrow is 15–21°C. The mother returns every five to six days and feeds 40 percent of the baby's bodyweight in one feed, so a new baby in care may not need feeding immediately. All echidnas, and especially immature puggles, suffer heat stress and overheat rapidly, so they should be kept in a semi-torpid state.

The young echidna leaves the burrow at around six to seven months of age weighing approximately one to two kilograms and is weaned approximately four weeks later.

If you see an echidna and it is not injured or in danger, then leave it alone. Remember: echidnas are a protected species in all states and territories. If the echidna is in danger, i.e. on a road or being threatened by a predator, move it away. Only authorised wildlife carers



Nestling echidnas only require milk once every 48 hours. A puggle fat from a good feed. Source: perthzoo.wa.gov.au / via: zooborns.com

or researchers with permits are allowed to pick up an echidna for transport or rescue.

When echidnas wake from hibernation they often become disorientated. Many have been found under carports with a brick wall and concrete. All they need is to be turned around and headed back in the right direction. Most have wandered in from local parks or scrub.

Never remove a healthy echidna from the area in which it is found. It could be a female echidna with a puggle in a burrow nearby. If you take the mother away to relocate in another area, her baby will starve to death. Echidnas have also been known to try to find their way back home. They then face the risk of having to cross roads and being hit by cars.

An echidna does not have ear flaps like we do. Its ears are large, vertical slits just behind its eyes. It has an amazing sense of smell, therefore if needing to capture an echidna you must approach it from downwind so that it cannot smell you. It was once believed that echidnas had extremely poor eyesight, however, latest findings show the exact opposite is true.

Many thanks to everyone who provided photos and to Fourth Crossing Wildlife for photos and information.

The majority of this article came from the book by Dr Peggy Resmiller *"Biology Rescue and Rehabilitation of Short-Beaked Echidnas"*.

Thank you Dr Peggy Resmiller for allowing us to utilise this great source.



Echidna baby just born from the egg. Pink, blind and totally reliant on its mother.  
Credit: [www.arkive.org](http://www.arkive.org)



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