LAND FOR WILDLIFE
VOLUNTARY NATURE CONSERVATION

Wildlife Notes

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT
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Information Notes for the *Land for Wildlife* Scheme in Western Australia

Living with Echidnas

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Location:	Southwest
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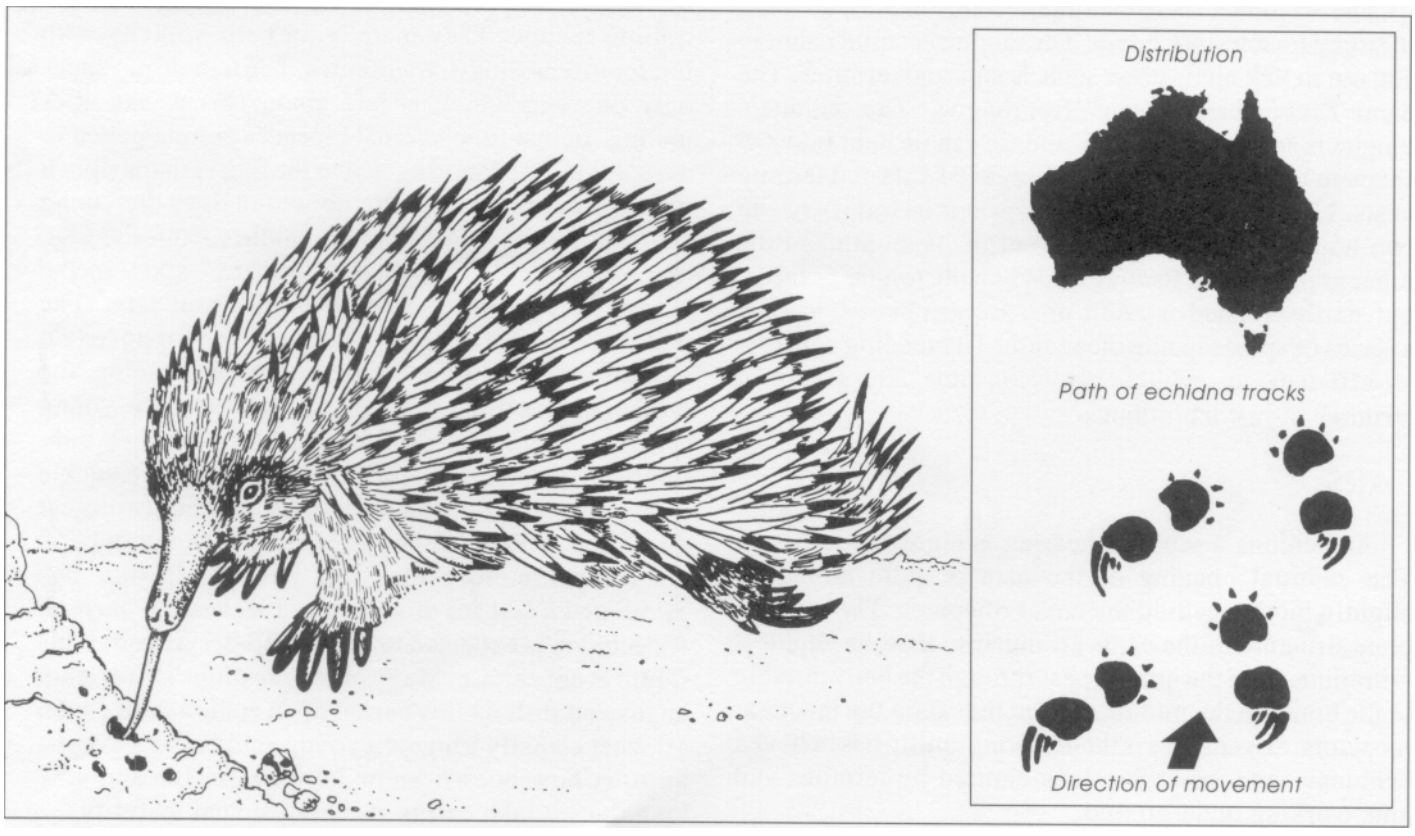
What is an echidna

Echidnas are one of Australia's most unique and widely spread of all native mammals. Their name is derived from the Greek goddess Ekhidna who was half snake (reptile) and half woman (mammal). It is this mixture of reptilian and mammalian characters which classifies this species into a special group of mammals called monotremes. Mammals as a whole are characterized by a number of general qualities such as having fur, breathe using lungs, warm blooded and the young suckle milk from their mother. Monotremes have all these mammalian characteristics plus one other unique quality which sets them apart. They lay soft shelled eggs from which their young hatch. Echidnas represent a very primitive and special mammal whose presence on the Australian continent has been traced back over 150 million years.

In the monotreme group there are only three known species; the short nosed echidna *(Tachyglossus aculeatus),* the long nosed echidna *(Zaglossus bruijnii)* and the platypus *(Ornithorhynchus anatinus).* The short nosed echidna species is common to Australia and the long nosed echidna is native only to New Guinea. Within Australia there are four subspecies ranging from the mainland states across to Tasmania and Kangaroo Island off South Australia. In West Australia we have the variety *Tachyglossus aculeatu, acanthion,* which is also common in the arid zones of all the mainland states.



Characteristics and Habits

SPINES

Probably the most recognizable characteristic of echidnas are the many sharp spines covering their back and sides. Each spine is connected to a bundle of muscles which allows the animal to very quickly erect them as a formidable protective shield. In defence the echidna is able to jab the spines outwards by a sharp muscle reflex when hunching its shoulders. The spines also enable the animal to wedge itself firmly in a confined space such as among tree roots or in a rock crevice.

SNOUT

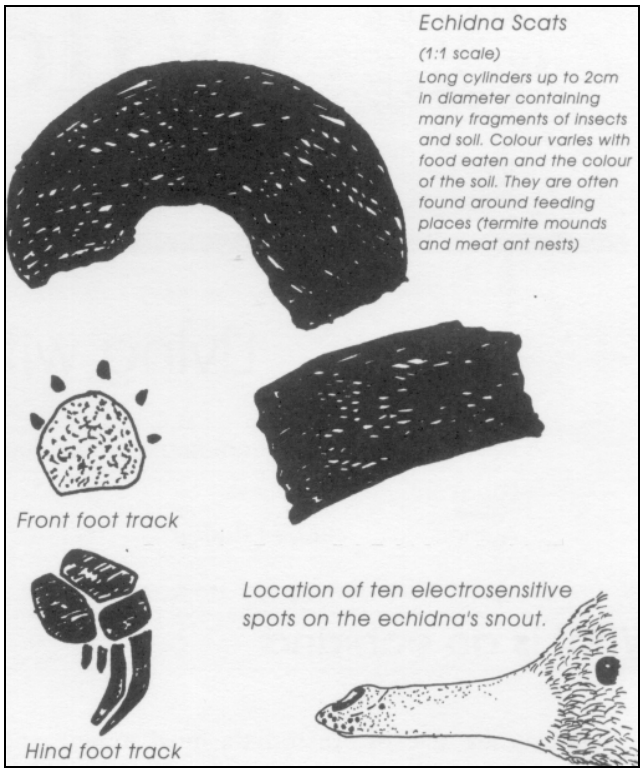
The echidna's snout performs a vital role in searching and retrieving prey. It is used to penetrate and effectively plough soil. The snout is also used to squash larvae and worms so that they can easily pass through the small mouth. The end of the snout contains an array of sensory receptors used for tracking down prey and also for determining outside temperature. The specialized electro-receptors are capable of detecting sources of electric fields produced by moving prey, which are a thousand times weaker than those humans may be able to feel. Echidnas often stop and raise their snout to apparently sniff the air. They appear to depend on their sense of smell to monitor the environment and for social purposes such as when male echidnas locate females by following their scent trails.

MOUTH AND TONGUE

The echidna's 15-18 centimetre long tongue is covered in sticky treacle-like saliva. The tongue is rapidly shot in and out to lick up its prey, such as ants and termites. The name *Tachyglossus* means `fast tongue.' The echidna's tongue is so specialised, the end tip can be bent into a U shape to trace up the tunnel passages of ants and termite nests. The echidna has no teeth; it grinds its food between two horny plates, one on the roof of its mouth and the other at the base of its tongue. When the tongue is thrust out, partly crushed or whole prey are stripped off against a series of spines inside the mouth. The feeding action is so efficient, an echidna may consume 200 grams of termites in just ten minutes.

EARS

An echidna's sense of hearing is highly specialised. The external opening of the ears is quite large and slightly hidden behind the cover of spines. The internal bone structure of the ear is arranged so that the slightest vibrations from the ground pass through the body directly to the bones in the middle ear and then onto the inner ear receptors. So sensitive is their hearing ability it is believed echidnas can sense vibrations emitted by termites and ants working underground.



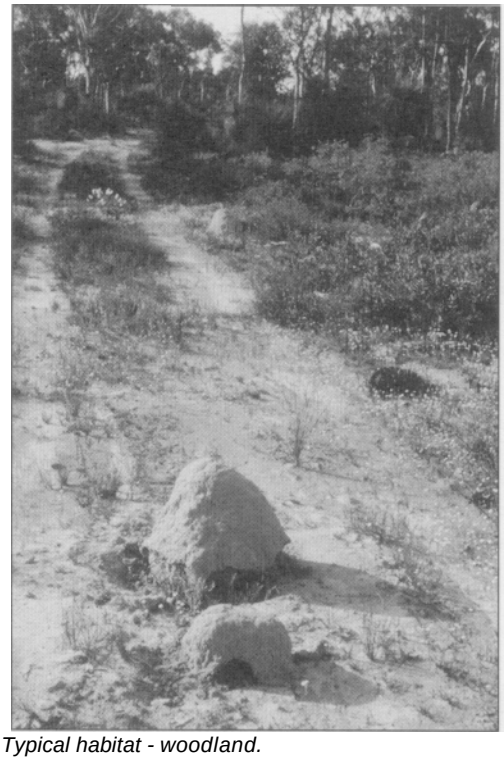
REPRODUCTION

Echidnas live mostly solitary lives moving about their home ranges (about 50 hectares) and only coming together to mate. Males can be recognised from females by the presence of a spur on each ankle of the hind legs. During the mating season, from June to September, males are actively seeking out the females and sometimes `echidna trains' of as many as six males can be seen moving in line behind a scenttrailing female. They mate lying belly to belly with intercourse lasting 3-15 minutes. The female produces only one egg which is laid about two weeks after mating. In that time a female forms a simple pouch to accept the 13-17mm egg. Once the egg is in the pouch hairs hold it in place. After about ten days the young echidna, only 13-15mm long, hatches from the egg. The young echidna, called a "puggle," stays in the pouch holding on to hairs with its front legs. The puggle continues to develop in the pouch for up to two months. At some time before the spines develop, the mother makes a burrow in which she leaves the young echidna. From this time onwards the mother only returns to her burrow about every five days to suckle the young. The mother conceals the entrance to protect the young echidna while she is away. After about 240 days from conception, the young echidna has developed a full set of spines and leaves the burrow. An echidna is expected to live for 10-16 years but this figure is not certain. Many other questions still remain unanswered about this period of an echidna's life such as: what actually triggers a young echidna to leave the burrow, how does it know how to survive and how long does it take before reaching sexual maturity?

Encouraging Echidnas

Typical habitat - rocky.

Feeding hollow In termite mound.



Typical habitat - woodland.

Feeding holes in leaf litter.

SHELTER

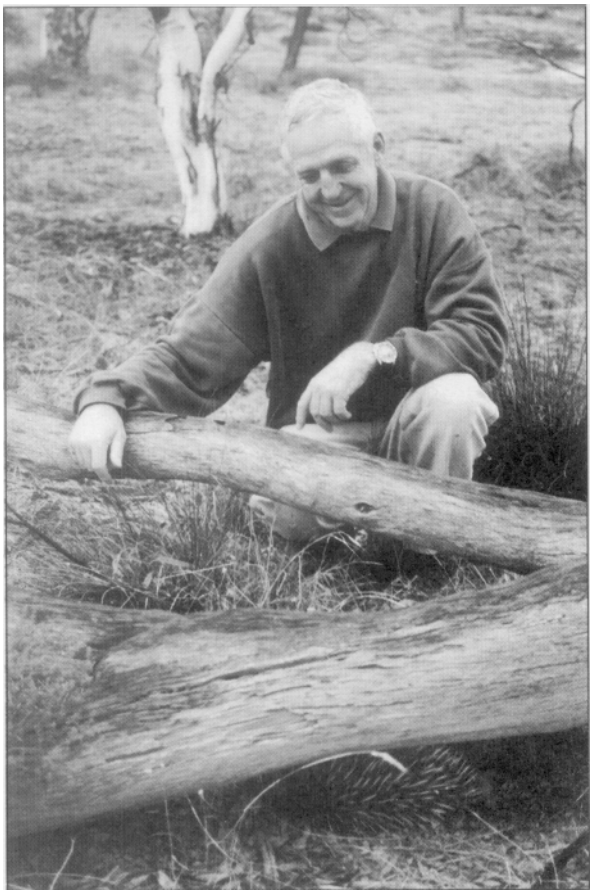
Echidnas are active mostly during the daytime, however this can change to the evening on very hot days. Echidnas are particularly sensitive to heat stress as they do not sweat or pant to aid body cooling. As a consequence they seek shelter in hollows, old burrows or in rock piles to escape the heat of the day. In very cold weather they become torpid and seek the same refuges. Providing as many of these places as possible is very important, as echidnas simply take advantage of any suitable shelter available wherever they may be. They have no "fixed address" within their home range.

DIET

The echidnas' preferred diet is termites but they will also eat ants, beetles, worms and other invertebrates. Swarming ants will attack an echidna, so they prefer termites, seeking out the succulent nymphs and queens. Echidnas forage through rotting logs, stumps and the leaf litter in search of termites and other invertebrates. Echidnas obtain most of their water needs from the animals they eat but they will also occasionally drink from pools or lick droplets of water from plants moistened by dew or rain.

HOME RANGE

Echidnas have a home range of approximately 50ha, which is where they move about searching for food and shelter. They do not defend an exclusive territory like some mammals. Each individual has no fixed boundaries and may overlap into other echidnas' home ranges. The numbers of echidnas in an area will depend on the quality of the habitat. This is not only defined by food abundance which is related to the quality of the bushland, but also includes access to shelter such as secure burrowing sites; and survival from predators, for example dingoes and dogs, depends on the quality of shelter available.



In *wandoo woodland an echidna has many hiding places! John Young, Wyening.*

FIRE

The use of fire in managing bushland has important implications. Fire has the potential to be as much a destructive tool as a creative tool in encouraging wildlife in bushland. Taking into account the habitat needs of echidnas, bushland managers need to consider carefully what effects the use of fire may have on encouraging their survival. For example leaf litter is important habitat for many of the invertebrate animals echidnas feed on. How well will echidnas cope with fire practices which turn all the leaf litter to ash? It has been mentioned how important hollows and burrowing places are for echidnas, how will fires affect these important places?

Bushland managers should refer to Managing Your Bushland Chapter 9 Fire Management for detail on how fire can be used to encourage wildlife as well as evaluate the effects of wildfires.

ACKNOWLEDGMENTS

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Some "Do's and Don'ts" for Injured Echidnas

- Echidnas do not make good pets because they prefer to live a free life wandering their large home ranges. It also is very difficult to feed them their diverse natural diet like other pet animals.
- Echidnas are a protected native species therefore they cannot be taken from the wild without a permit. However injured echidnas can be taken for treatment without a permit. Contact your local CALM Office for advice.
- Echidnas are very powerful animals for their size and will tear their way out of any flimsy box, so only boxes made of a very sturdy material will contain them.
- Injured echidnas are heat sensitive as they operate with a lower body temperature compared to other mammals, so they do not need to be kept artificially warm using heat lamps or hot water bottles.

An injured echidna taken into care may choose not to eat, however do provide drinking water in a broad shallow container and seek help from a Carer as soon as possible.

In the situation of rescuing an infant echidna simply keep it in a moderate temperature and in the dark. Do not try to feed it. Contact your nearest Carer through your local CALM office.

- Always release a rescued echidna back where it was found within its familiar home range.

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