



Wildlife Notes



DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

Information Notes for the Land for Wildlife Scheme in Western Australia

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Encouraging Quendas

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Author: Emma Bramwell

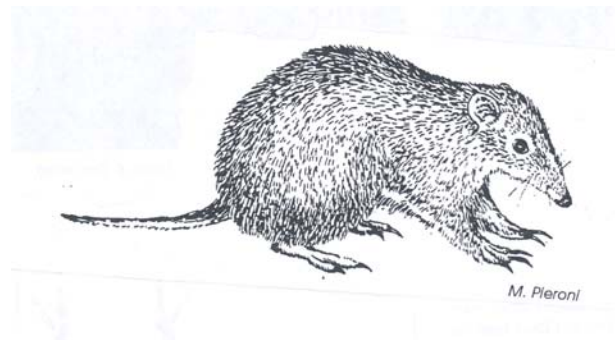
Often mistaken for large rats by unsuspecting people, the Quenda is an occasional visitor to many properties around the southwest of Western Australia. An insect-eating inhabitant of bush understorey, the presence of this marsupial is a good indicator of a balanced ecosystem. The management of habitat suitable for Quendas requires some forethought and planning, but with a little time and patience you will be rewarded by visitations of the native kind!

WHAT IS A QUENDA?

The Quenda is sometimes known as a bandicoot, and is member of the family Peramelidae which also includes the Bilby. Bandicoots are a group of marsupials (animals which have a pouch) with compact bodies and pointed heads. They are roughly the size of a rabbit, have short forelimbs, longer hind limbs and a short stiff tail. They eat insects, small vertebrates and plant matter. The Quenda is a dark greyish or yellowish brown colour with a pale cream belly, and is reasonably small in size, with adults ranging from 280 to 360 millimetres in body length and weighing anywhere between 400 and 1600 grams, the females being smaller and lighter than the males.

Sixteen species and subspecies of bandicoot currently occur in Australia, with Western Australia playing host to six of these. Three species of bandicoot have become extinct since European settlement. One species, the Southern Brown Bandicoot (*Isodon obesulus*), has five subspecies which occur in isolated patches across the southern part of Australia. 'Quenda' is the indigenous name given to the sub-species, *Isodon obesulus fusciventer*, found only in the southwest of Western Australia.

Fossil evidence suggests that prior to European settlement the Quenda was found as far north as Jurien Bay, west of a line between Moore River and Jerramungup, and east along the south coast to Israelite Bay. Since European



settlement, they are now only found in a coastal strip from Guilderton to Esperance with low numbers in Banksia woodland, Jarrah and Karri forests.

CONSERVATION STATUS OF THE QUENDA

Because of habitat loss since European settlement, all species of bandicoot are considered to be in need of protection to some degree. The Quenda is soon to be removed from the State Threatened Fauna List as a result of their recent recovery due to feral predator control programs such as Western Shield, and is perhaps the most common species of bandicoot to be seen around the southwest of Western Australia.

The major current threat to the Quenda is loss of habitat due to the clearing of land for urban and rural use. Another major threat is predation by foxes, cats and dogs, and to a lesser extent displacement by other species such as rabbits through competition for space.

Baiting with 1080 poison baits has been found to be an effective way of controlling foxes, and in many areas regular baiting has resulted in an increase in Quenda populations. On a private 72 ha wildlife sanctuary near Perth baiting for foxes has resulted in a three-fold increase in Quenda numbers over three years.

QUENDA HABITAT AND HABITS

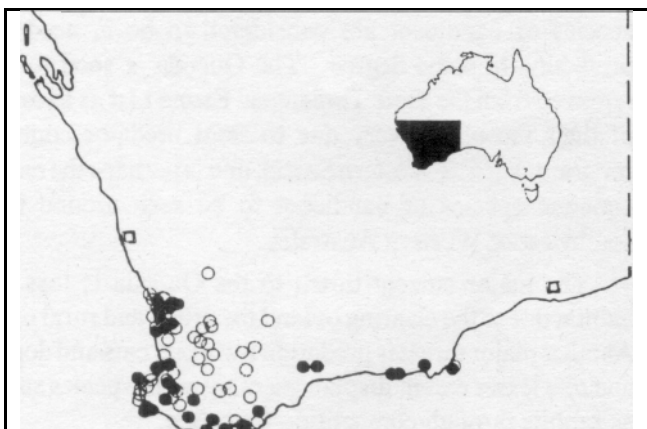
Quendas are most commonly found in dense shrubland and in the understorey of adjacent forest. Their distribution around the Perth area is often linked to wetlands and woodland areas, and remnant bush blocks in rural areas. Mostly a nocturnal animal, the Quenda will sleep in a nest during the day (generally a slight bowl-shaped hollow), constructed on the ground under dense bush using grass, twigs and other plant material.

The use of fire by Aborigines before European settlement created a mosaic of different habitats suitable for bandicoot habitation, however the burning and clearing of land for use by Europeans has resulted in limited habitat areas and frequently the loss of dense vegetation suitable for bandicoots.

Although classed as an insectivore, the Quenda is partial to earthworms and other invertebrates, and occasionally small vertebrates and plant material. Food is obtained by digging with strong foreclaws, or by collection off the ground. Characteristic cone-shaped hollows are a result of their foraging, differing from rabbit diggings which are blunt-ended and wider.

THE SOCIAL LIFE OF QUENDAS

The Quenda is a solitary animal, coming into contact with others of its species usually only for mating. An adult may have a home range (a foraging zone, usually with the main nest site in the middle) of up to seven hectares, although in areas and times of abundant food sources home ranges may overlap substantially. Males have larger home ranges than females primarily because they are larger and therefore are more likely to move greater distances in search of food.



Recorded occurrence of *Isoodon obesulus*

in Western Australia.

Black circles represent museum specimens collected since 1969; white circles represent museum specimens collected before 1970; white squares (Geraldton and Esperance areas) represent sub-fossil material.

Observations have revealed that upon meeting, Quendas often display feet thumping and tail waving, perhaps in some sort of ritual greeting or warning.

Males will fight for territorial and breeding rights. Often the grunting and hissing is accompanied by a lot of blood, and sometimes the death of an opponent. You may notice that the occasional Quenda is minus a tail (males sometimes lose them during a fight), or missing a lot of fur (not only due to fighting, but also because females are 'roughed up' by males during breeding).

Quendas will breed all year round providing there is enough food available for them, and have a natural life expectancy of around five years. Gestation lasts for about two weeks, after which the newly-born small pink juveniles crawl to the pouch and attach to one of four available teats. The young Quenda remains dependent on the mother until it is weaned at about three months old. If you are lucky enough to observe Quendas, you may notice some have awkward movement and appear to have several pairs of legs! This is a female burdened down by several young as she attempts to feed them and herself at the same time.

ENCOURAGING QUENDAS ON YOUR PROPERTY

If you are fortunate enough to have Quendas living on your property, you need only maintain their habitat by restricting land clearing and perhaps carefully managing a spot-burning regime to create a mosaic of suitable habitats. Restricting the access of domestic animals (dogs, cats, stock) to potential habitat areas will also help to encourage Quendas. Some points are listed below that might help to attract these creatures to your property, or help you to maintain an existing population.

> Diet

Supplementary feeding is not harmful if allowed in small doses, although in most cases it is not actually necessary. Although they are primarily insectivores, Quendas have been known to accept small quantities of dog and cat food, muesli, mixed dried fruits, horse feed, grain, peanut butter, bread, bird seed, banana and potato crisps! The main thing is to avoid encouraging wild animals to become solely dependent on artificial feeding, as in the long term this would prove to be harmful to the animal (incorrect diet, you going on holiday, etc.).

> Space

As previously mentioned, an adult Quenda can have a home range of up to seven ha, so an initial requirement of their habitat is space. However, if your property is smaller than this Quenda can still



Typical Quenda habitats (photos: Emma Bramwell):
 above left: Eucalypt woodland
 above right: Banksia woodland

use it, as long as the combined habitat area available from you own and your neighbours' properties provide a large enough area to support an adult's home range. A breeding colony will require much more space as the young eventually find home ranges of their own. Connections from your property to neighbouring properties and local reserves can be created to allow for wildlife movement between these areas.

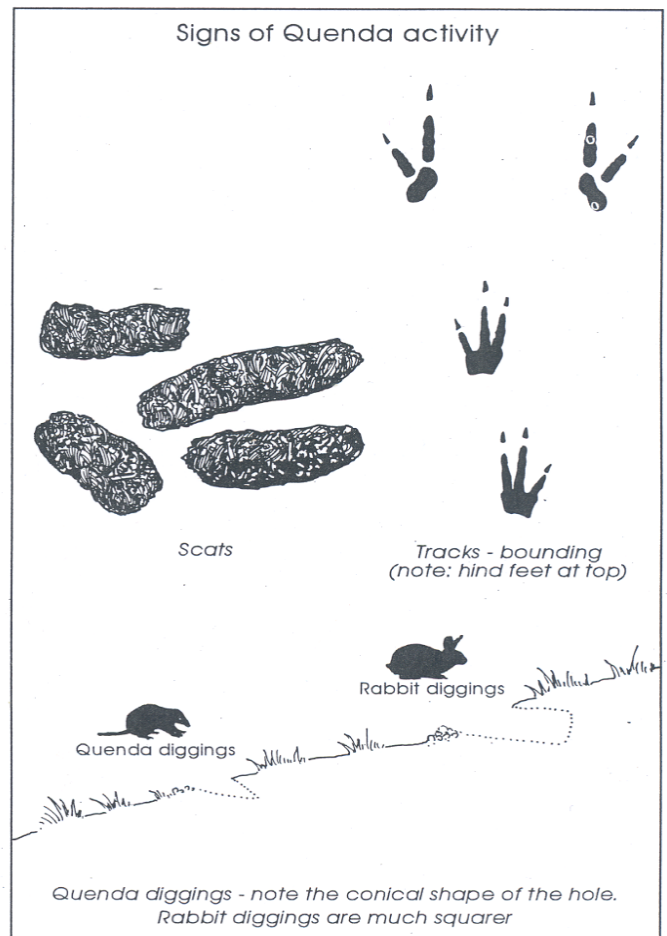
Where artificial feeding occurs (this also includes indirect feeding, for example, the presence of grain on the ground from horse feed) Quendas will sometimes have smaller home ranges and substantial overlap of these, and will tolerate greater interaction with each other. This is due to the fact that an abundant and central food source is available for use by all.

> Habitat

Quendas are fond of dense understorey, through which they build a series of tunnels for travel. They also like the skirts of grasstrees that hang down to ground level, under which they will build their nests. Dense vegetation not only provides security for the Quendas, but also provides habitat for the insects and other things which make up a bandicoot's diet. If you would like to encourage these creatures it is important to retain the existing vegetation and improve it where necessary. Use direct seeding or seedlings to create a low, dense clump of mixed, local shrubs.

Quendas are adaptable under certain circumstances, and will sometimes use dense grass as a habitat (unmowed kikuyu grass for example) if a food source is available, predators are scarce, and no alternative habitat is nearby. Sword sedges are also a good habitat, with their dense clumps of foliage at the base of the plant.

Fencing can be put around newly-planted or remnant vegetation on private property to prevent stock from grazing the understorey (thereby removing potential habitat). A suitable fencing wire to use would be either straight wire or ringlock fencing, which will allow small



animals such as Quendas to move through the fence to other areas.

Fire can be used to create a series of different stages of vegetation regeneration in remnant bushland. However, on small properties (under 10 acres / 4 ha) the use of fire to create these mosaics is not generally recommended as an out-of-control fire can destroy the entire habitat. On larger properties spot-burns at different times can be trialled under strict control. This will encourage the growth of young plants, which in turn creates new, dense habitat and attracts insects - some important features of Quenda existence. It is a good idea to discuss this with the fire control officer for your Shire to find out about any fire restrictions in your area before attempting habitat creation through fire.

> Predators

Predator control is important in encouraging Quendas, as the presence of predators can result in the loss of populations of these territorial animals. An adult Quenda can cope with a cat (some are even partial to cat food!), however young animals are much more susceptible to predation and consequently the juvenile death rate is usually high. Foxes are a major threat as they are larger than cats and will take both adult and juvenile Quendas.

On private property, fencing can be used to prevent domestic dogs from entering remnant bush and chasing the small marsupials, however cats are much harder to control. Pet cats could be kept indoors at night to allow these semi-nocturnal animals to go about their activities. For feral animal control, seek advice from your district Agriculture WA office.

> Monitoring

There are still many things we do not know about the life of Quendas, and you can help by keeping good records of all your Quenda observations.

Note what vegetation they use, what they eat, when the young are first seen, the behaviour interactions between different individuals, and the like. Photographs could be very valuable, and we are very interested to hear about your observations. Please feel free to send us anything you think is interesting. By sharing our knowledge, we can obtain a greater understanding of these unique and wonderful marsupials.

CONCLUSIONS

Occasional visitors to many properties, the Quenda is highly reliant on remnant vegetation consisting of dense native understorey, for its habitat and ultimate survival. However, the animal is also adaptable under favourable conditions, and will utilise alternate habitat such as Kikuyu grass if food is available in the area.

Artificial feeding provides an alternate food source to the one nature intended, so it is important not to allow the alternate food source to become the only food source for the animal. It should be remembered that encouraging Quendas by means of food can promote modified behavioural patterns and expose them to increased predation. The animals naturally have individual overlapping home ranges of up to several hectares, yet only come together for breeding. However, when a constant food source is available in one area, several bandicoots may congregate to utilise it, often resulting in aggressive behaviour.

They are fascinating creatures to observe, each individual having its own attitude, and are best observed at dusk when they are generally most active.

FURTHER INFORMATION

Further information on Quendas can be obtained by contacting CALM Wildlife Branch. There are a number of publications featuring Quendas, which may be useful.

ACKNOWLEDGEMENTS

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About the Author

Emma Bramwell is Land for Wildlife Administration Officer at CALM Wildlife Branch, Como.