

Land for Wildlife Biodiversity Surveys 2010

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Fauna profiles

Tree Dtella (Gecko), *Gehyra variegata*



Gehyra variegata occurs Australia wide and is common in Alice Springs. It is very similar, however, to the introduced species Purple Dtella (*Gehyra purpurascens*) and needs to be identified correctly to monitor populations of the feral gecko in Alice Springs. *G. variegata* is a habitat generalist occurring in disturbed and undisturbed habitat, tolerating fragmented ecosystems, and therefore is not a good species to use as an

indicator of ecosystem health. It can be found in woodlands, shrublands, and rocky areas where conditions are dry for habitat, but are very common around the house and human habitation. They are arboreal and rock-inhabiting, but are often found on the ground under logs, dead trees and other debris. It is frequently the most abundant lizard where it occurs, along with Bynoe's Gecko. A nocturnal gecko, it feeds on moths and other insects. It is long-lived with a lifespan greater than 9 years. The female will begin breeding in her third year when she is 90% of her adult



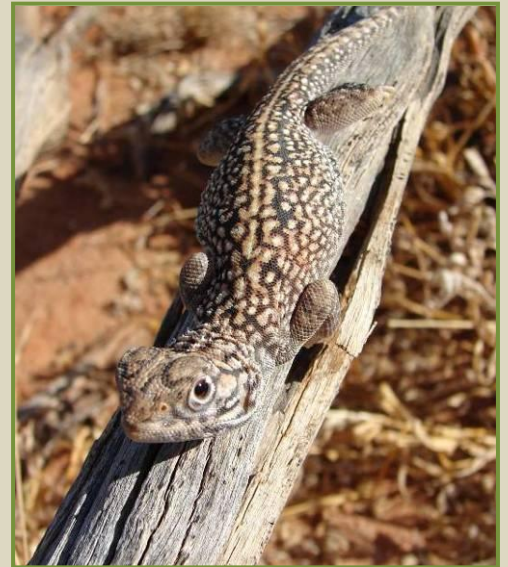
size. This species is not sexually dimorphic (males and females are the same in appearance).

Central Netted Dragon, *Ctenophorus nuchalis*

The Central Netted Dragon is a medium-size terrestrial lizard, robust with a blunt snout, relatively short limbs and long tail. It is reddish-brown or yellowish-brown in colour with a fine black netting pattern. It has a low crest along the top of the neck, and a narrow vertebral stripe. These dragons are typically 26-28cm from head to snout.

The Central Netted Dragon is common and widespread in semi arid to arid areas of inland Australia, with a range that extends from the Western Australian coast to western New South Wales and Queensland. It is usually found in open country on sand or loamy soils but is generally absent from rocky ranges, with a habitat preference for red sandy desert with Spinifex grass vegetation. It is often seen perched on low elevated sites, even in very high temperatures. It shelters in shallow burrows at the bases of shrubs and stumps, close to its perching site, and will retreat to the burrow when threatened.

Central Netted Dragons have both a summer and a winter burrow to which they retreat when threatened. The winter burrow is plugged with soil during winter inactivity, although they can emerge for a few hours a day to feed if the weather is warm enough. The diet consists of insects such as ants, grasshoppers, beetles, termites, and also includes plant material. Four to six eggs are usually laid at a time. Males develop a red flush over the head and throat during breeding season.



Bearded Dragon, *Pogona vitticeps*

The Inland Bearded Dragon is appropriately named because of its "beard," an expandable throat pouch with spiky scales. The 'beard' of *Pogona vitticeps* is used for mating displays and displays of aggression; the throat pouch of males inflates and turns black. Both sexes have a throat pouch, but males display more frequently, especially for courtship rituals.

The Bearded Dragon occupies a large range of habitats from the desert to dry forests, scrublands and grasslands. It is found in the interior of all eastern states to the eastern part of South Australia and the south-eastern part of the Northern Territory. It is common in the Alice Springs region. It grows up to 55 cm long, including the tail, and has a broad triangular head, round body, stout legs, and a robust tail. Colour for this species depends on the soil of the region they live in, ranging from dull brown to tan with red or gold highlights. It is a semi arboreal lizard that can be found basking or displaying on fallen branches, fence posts and picnic tables. This dragon feeds on a wide range of insects, lizards, flowers, fruits and succulent leaves. It lays up to 30 eggs at a time. Mature males often have black beards during breeding season.



Pallid Cuckoo, *Cuculus pallidus*

The Pallid Cuckoo is common to Alice Springs, and occurs throughout Australia, although it is a discreet bird and is not easily seen. It is often heard before seen, the male frequently calling notes of ascending scales with increasing intensity. It is often visible after rain, when they make themselves obvious. The individual spotted during the Land for Wildlife surveys at Heffernan Rd. was a male, sitting on the telephone wire being dive-bombed by honeyeaters. This was during the last days of the survey when it rained lightly, and the air was humid. They display seasonal migratory behaviour but may be resident year round.



Photo copyright Jean-Philippe Paris

It is a large bird with a long tail, and is a parasitic species. Key distinguishing features are; a yellow eye-ring, a dark grey eye-stripe, a broadly barred brown/black and white tail, a black bill, and the body is grey above, whitish below. It has a hawkish appearance in flight. It is insectivorous and a ground forager, often pouncing for food. It particularly likes hairy caterpillars which are shunned by many other species. Feeding behaviour indicates the type of preferred habitat is woodland (for perching) with open ground (for 'pouncing'), although it is difficult to describe the habitat of a parasitic species as they occupy areas populated by their hosts – which for the Pallid Cuckoo is highly variable. Degradation that reduces the abundance and diversity of ground invertebrates (eg. fire, development, livestock grazing, soil erosion) will likely have negative effects on populations of this species.

The Pallid Cuckoo will lay its eggs in the nests of honeyeaters, woodswallows, whistlers and flycatchers. Common host species in Alice Springs include the Willie Wagtail and the Hooded Robin. Thirty-two host species have been recorded in Australia and 21 of them are honeyeaters (Threatened Species profile, DE&H, Govt. SA). The female cuckoo will remove one of the host's eggs and lay one of her own in the nest. It is not known how many eggs a female will lay in a season. The egg mostly resembles the host egg, and unsuspecting hosts incubate it along with their own eggs. The cuckoo egg usually hatches more quickly (after 12-14 days) and the young Pallid Cuckoo will instinctively push the other eggs out of the nest 2-5 days before they hatch or will evict the chicks. The young bird rapidly outgrows its 'foster' parents, who will wear themselves out trying to find enough food to satisfy it. Young Pallid cuckoos may also be fed by other birds that are not its 'foster' parents and will fledge at around 6 weeks old – which is often weeks later than the chicks of the host parents.



A juvenile Pallid Cuckoo fed by its host a White-plumed Honeyeater.

Wolf Spider, *Lycosa spp.*

Wolf Spiders are found throughout Australia in a wide variety of habitats including both inland and coastal habitats, suburban gardens, alpine meadows, woodland, shrublands and wet coastal forest. There are many different species of Wolf Spider. Some are able to dig burrows 30cm deep using their jaws, some shelter under leaves, bark, or other debris, some utilise tunnels abandoned by other invertebrates (such as cicadas) which saves doing any extra work, but most are wanderers without permanent homes. Arid zone species construct turrets or plug their hole with leaves and pebbles during the rainy season to protect themselves from flood waters. They are generally large robust spiders growing up to 25mm in body length, grey-brown in colour with a pattern of bars on the abdomen and radiating marks on the head and thorax. However species differ in size and colour. They depend on camouflage for protection and have a lifespan of 2-3 years. The male has obvious bulbs on the end of his pedipalps and has a small abdomen and long legs, whereas the female has a larger abdomen than cephalothorax.

They are fast ground hunters and are so named because they chase down their prey instead of relying on a web for capture. They feed on invertebrates such as crickets, cockroaches and flies. They hunt at night, running insects down and overpowering them with unexpected bursts of speed. Night-time is a great time to try to see a Wolf Spider, using a torch or even in car headlights, as their large eyes reflect in the light.

Wolf Spiders are unique in that they carry their egg sacs (a round silken globe) around with them, which they attach to spinnerets at the end of their abdomen. The abdomen must be held in a raised position to keep the egg sac from dragging on the ground, but they are still capable of hunting while doing this. The egg sac is carried for a few days until the young spiderlings hatch and climb up the mother's legs and onto her back. They will remain here to continue to develop while she carries them around.



A Wolf Spider photographed in America carrying her young.

Wolf Spider carrying egg sac.



Wolf Spiders use venom to aid prey capture and digestion, but will only bite humans if provoked (they are not an aggressive spider). The effects of a Wolf Spider bite are usually mild and symptoms include localised pain, swelling, itching, nausea, and headaches. No antivenin is required and there have been no reported deaths from a bite. There are rumours that a bite can cause necrosis (rotting) of the tissue surrounding the bite, however recent studies have shown that it is not the spider's venom that can cause necrosis, but an *allergic reaction* to the venom (ie. A person bitten who is not allergic will not suffer necrosis).

House Mouse, *Mus musculus* (introduced)

The introduced House Mouse is the most common and widespread rodent in Australia. It is well adapted to arid country and is common in Alice Springs, where it's often found in buildings, gardens and open pasture as well as recently burnt areas and scrub. It has a compact body, a short head, large rounded ears, small eyes and a long slender, scaly tail. It can be aggressive when handled and it has a distinctive musty odour. The House Mouse can be distinguished from all native rodents by a notch on the inner surface of its upper incisors – however it must be caught to do this! It is therefore often difficult to distinguish native mice from House Mice by sight, particularly as the House Mouse has a number of colour morphs that can look like native mice.



The House Mouse spends the day in a roughly constructed nest of any available soft materials. In rural areas population density is limited by the availability of food and sufficiently moist soil to make a nesting burrow. At night it feeds on seeds, fruit, food scraps, and occasionally insects. The female has ten teats and rears up to nine litters of four to eight young per year, which become independent after about 18 days. Breeding can occur at any time of the year but normally follows rainfall. Populations can irrupt into plagues following several years of adequate rainfall which softens soil. After bush fires the House Mouse is usually the first mammal to colonise areas of regrowth.

Sandy Inland Mouse, *Pseudomys hermannsburgensis*



The Sandy Inland Mouse is pale ginger to grey-brown; it resembles the House Mouse but is a little smaller, has larger ears and eyes, and is usually paler underneath. Its head is also blunter and it lacks a distinctive musty smell and a notch on the inner surface of its upper incisors. It has a patchy distribution across arid Australia and is frequently found in the Alice Springs region. It inhabits a wide variety of open vegetation types, including *Acacia* woodlands, tall open shrubland (especially Mulga scrub) and hummock grassland, mostly on sands (plains and dunes) and sandy loams, but also in areas of cracking earth soils and

gibber plains. It is nocturnal and gregarious; during the day it sleeps communally in a complex burrow system constructed around the base of shrubs or small trees, emerging at night to feed on seeds, shoots, roots and small tubers. It obtains most of its moisture from food and does not need access to free standing water. It breeds opportunistically following rainfall, and populations fluctuate widely. The female has four teats and usually rears three to four young, which become independent after about 30 days. Threats include heavy grazing and trampling of habitat by domestic stock and

rabbits, predation by foxes and cats, poisoning from baits, competition with introduced herbivores, frequent fires, loss of habitat through clearing, and introduction of standing water which encourages potential predators and competitors.

Scorpion

Scorpions are common Arachnids found in gardens and forests throughout Australia. They are found under logs, rocks and in shallow burrows in earth banks. Scorpions are mostly nocturnal but they can be active during the day, especially during prolonged wet weather. Nocturnal hunters, they feed mainly on arthropods such as beetles, cockroaches, spiders, slaters, centipedes and millipedes. Many scorpions (e.g. *Urodacus spp.*), are lie-in-wait ambushers. The main predators of scorpions are carnivorous marsupials, rodents, lizards, nocturnal birds, centipedes and other scorpions. The Desert Scorpion does not drink free water, but gains water from food and is capable of taking water from soil via osmosis.



Scorpions are easily distinguished by their long sting-bearing tail and a pair of pincers on long arms, known as pedipalps, at the front of the body. They have six to twelve eyes, although they do not have good eyesight. They can readily distinguish light from dark however, and appear to have excellent low light sensitivity, which helps them to both avoid harsh sunlight and to navigate by starlight or moonlight. They sense their way around using sensory hairs which pick up vibrations and scents. Colour ranges from dark grey to light brown or gold, with lighter coloured legs. Scorpions also fluoresce under ultraviolet light, which is a good way for scientists to find them in the field using UV torches. The fluorescence is thought to serve as an ultraviolet sensitivity mechanism, perhaps allowing the scorpion to avoid damaging light levels.

Female scorpions are more heavily built than the males, and have shorter tails. They give birth to live young, which are carried on the mother's back for the first week or so before they disperse and create their own burrows, clustered around the mother's. Desert Scorpions generally mate and moult in late spring/early summer and young are born 18 months later in late summer/early autumn.

Scorpions tend to be larger and more venomous in the northern parts of Australia, and bites can be very painful but are not commonly lethal. The Desert Scorpion, *Urodacus yaschenkoi*, is found throughout Australia's interior from north western Victoria, through South Australia, NT and Western Australia. Habitat includes open sandy woodland and shrubland, but is most commonly associated with Spinifex country and Mallee Gum trees. It occupies deep spiral burrows 25cm - 1 m deep with wide, crescent-shaped openings. It is thought the spiral section of the burrow helps to trap water vapour as water is often scarce for long periods. It has a body length of 7 cm - 12 cm and reaches adulthood after 4 years. Moulting takes place during the warmer months, and scorpions block the entrance to their burrow to keep potential predators out and to help maintain a high humidity.

Vegetation profiles

Harlequin mistletoe, *Lysiana exocarpi*

Harlequin Mistletoe is common in Alice Springs, and is widely distributed throughout drier inland Australia. It is present in many vegetation communities, including both communities present on the survey sites (15 and 17).

It is a parasitic species relying on its host plant for water and mineral nutrients. It is however, capable of photosynthesis in its own leaves. Host plants include Acacia, Casuarina, Eremophila, Eucalyptus, Exocarpus, Myoporum, Santalum, and Senna. Iconic species it occurs in are Witchetty Bush, Ironwood and Fork-leaved Corkwood. Many Mistletoe plants were in flower during the surveys, and at Brunonia Rd. a few trees were overrun with it – making it a favourite with Honeyeaters and Mistletoe birds, and a reliable bird sighting spot in the mornings. Trees can tolerate two or three infestations of Mistletoe

An extremely large Mistletoe in flower weighing down its host tree. Note the Mistletoe plant is in much better condition than the host plant.



A bird's nest in amongst a flowering Harlequin Mistletoe.

plants, but more than this will effect the trees survival.

Harlequin Mistletoe flowers are red with a green tip, and grow in pairs on a common short stalk. They are tubular with six free petal ends at the top, and dab pollen on bird's heads as they lean into the tube for nectar. The fruit is small and oval, and red or black in colour. Mistletoe is spread to other host plants by the Mistletoe bird who soon after eating the fruit passes the sticky embryo/seed. The seed is so sticky that the Mistletoebird needs to wipe its backside on a branch to get rid of it - right on target for the seed to quickly attach to the branch of its newfound host. There are eight species of Mistletoe that occur in our region; four *Amyema* species and four *Lysiana* species. They all provide food and nesting sites for birds.

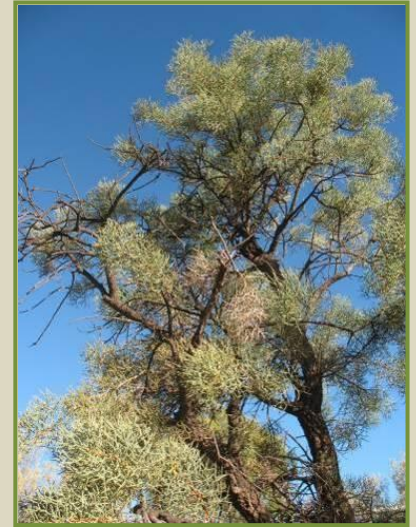
Fork-leaved Corkwood, *Hakea divaricata*



Fork-leaved Corkwood is a signature species of vegetation community 17 and is an important tree over most floodplain plant communities. It occurs in vegetation community 15 (also occurring on the survey sites), and is a culturally significant tree in the Alice Springs region. Fork-leaved Corkwood also occurs in Western Australia, South Australia and Queensland.



It is distinctive because of its short and prickly leaves which grow out in forked bunches. It has dark furrowed gnarly trunks with thick corky bark. The flowers are yellow-green and are a strong attractant for honey-eating birds who favour their nectar. Fork-leaved Corkwoods flower after rain, and had just gone to seed on the Heffernan Rd. site. They are slow growing, growing to 4-7metres tall with a life span of more than a hundred years, and prefer loamy soils. They are drought and frost tolerant.



Wild Passionfruit/Caper Bush

Capparis spinosa subsp. *nummularia*



Wild or Bush Passionfruit is actually a member of the Caper family (the same family as the Mediterranean capers you can buy in a jar at the supermarket).

It occurs in vegetation community 17, but not 15, and is restricted to 4 other vegetation communities (out of 26) of a variety of soils. Bush Passionfruit can tolerate a range of soils and situations, including shade. It is often found in river flats or calcareous hills, usually under trees of sheltered areas.

It is a multi-stemmed shrub with round leaves and stems with small sharp spines. It flowers between September and February,

producing delicate white flowers with four petals and lots of long stamens coming out of the middle. Flowers open up at sunset and only last a couple days. The fruit then produced is edible, turning from green to yellow when ripe, and is sweet-smelling with bitter black seeds and edible yellow pulp. The fruit attracts birds and ants and usually lasts until the winter frosts providing a reliable food source until then.



The plant is often defoliated by caterpillars (Caper White Butterflies) in spring, but is able to recover rapidly. So don't panic if this happens to your plants at home and start killing caterpillars! It is a fairly common occurrence for this plant, and they bounce back well. Enjoy watching the beautiful white and yellow butterflies emerge from their chrysalises.

Soil Health

Soil was healthy on the survey sites, even though the area has a history of surface, mechanical disturbances, change in hydrology or increased salinity. Blocks were mainly situated on flat ground, and no erosion along drainage channels, driveways or paths was obvious.

Cryptogams (soil crusts)

Cryptogams are a specialised and diverse group that includes organisms as varied as single celled algae through to very large and complex colonies of lichens and fungi that may stretch over metres or even hectares. Cryptogams are the nonvascular plants that reproduce through the production of spores rather than seeds (Scott *et al.* 1987). Cryptogams include algae, lichens, bryophytes, liverworts (pictured above) and fungi (Scott *et al.* 1987).

Cryptogams, along with other microbial organisms, form the underlying ecological 'fabric' on which the patterns of more visible components of ecosystems are arranged. The role of cryptogams in the healthy functioning of ecosystems is fundamental to the supply of ecosystem services on which all of society depends (Scott *et al.* 1987). In other words if your property has soil crusting, then your soils are in a healthy state. The *Land for Wildlife* Newsletter (November 2007) has more information on Cryptogams <http://www.lowecol.com.au/lfw/lfwnews> .



A cryptogam: Liverwort helping to stabilise soil along a creek bed. These resurrection plants "regain" life and form after rain.