From the Land for Wildlife Coordinator

This month we are celebrating Garden for Wildlife’s 12th birthday in Central Australia. Garden for Wildlife Central Australia began in Alice Springs on 5 April 2007. It was formulated as a sister program to the International (Australia & New Zealand) volunteer conservation scheme; Land for Wildlife. The Garden for Wildlife program supports urban dwellers to preserve, enhance and re-create wildlife habitat in their gardens and adjoining nature strips (must be registered with Council). We recognise and support the valuable contribution conservation-minded urban residents of Alice Springs make for our native plants and animals. Members’ efforts help species to continue to persist in the landscape and which characterise our unique Central Australian environment. You can read more about the beginnings of the program in Alice and our first member to join the scheme, on page 3 in this issue. You can also learn about: intriguing habitat forms that might pop up in your garden and which remain largely undescribed in the Centre; useful safety tips on how to assist injured or sick wildlife, and; the science is in!!! New research reveals the benefits to household occupants of providing habitat in the garden!

We hope you enjoy this month’s read

~ Kate Stevens

“Nature-based solutions which increase the resilience of ecological communities are becoming increasingly important in helping communities prepare for the unavoidable effects of climate change.”

- Costa et.al. (2019)
Fungi are neither plant nor animal, but rather, are classified in their own kingdom. While fungi are often mistaken for plants, they lack chlorophyll, the essential component of plants that is responsible for the absorption of light to provide energy for photosynthesis. Therefore fungi do not manufacture their own energy, but rather secrete digestive enzymes and absorb the dissolved molecules. They are also differentiated from other organisms by the presence of chitin in their cell walls.

Within the Fungi kingdom, there are phyletic divisions based on characteristics of reproductive structures, which are constantly being reassigned with advances in science. Currently, there are seven major phyla that are suggested and these include:

- **Microsporidia** (unicellular parasites of animals and protists)
- **Chytridiomycota** (chytrids, aquatic and the only fungi with active motility)
- **Blastocladiomycota** (saprotrophs that feed on decomposing organic matter; parasites of all eukaryotic groups)
- **Neocallimastigomycota** (anaerobic organisms, living in the digestive system of larger herbivorous mammals / terrestrial and aquatic environments enriched in cellulose)
- **Glomeromycota** (form arbuscular mycorrhizae as mutualist symbiosis for increased nutrient supply, bread molds)
- **Ascomycota** (spores in a sac-like structure known as sac fungi, including morels and truffles, yeasts)
- **Basidiomycota** (club fungi, including mushrooms)

Fungi perform an essential role in the function of healthy ecosystems, decomposing organic matter and playing a role in nutrient cycling and exchange. Species from the Ascomycota and Basidiomycota are used as a source of food, can contain organic compounds that produce strong colours and therefore can be used for dyeing textiles, while other species can be used as fire starters (tinder fungi). Smaller fungi such as yeasts can be used in bread and fermented beverages or foods, molds have been used for the production of antibiotics, while other fungi can be used as biological pesticides (rust) and in filtration technologies.

Ascomycota largely include the cup fungi, and then within the Basidiomycota, there seems to be differences that lead to morphological groupings (pileate, pleurotoid, polypore, jelly, corticioid, gasterioid and secotioid fungi). These are vaguely separated and described here, though they do not always affect phylogenetic relationships and are therefore arbitrary groupings.

**Cup Fungi**

Cup fungi sit within the Ascomycota, and includes hypogeous (occurring or living below the surface) fungi (aka truffles) and epigeous cup fungi. None of these are particularly common in central Australia according to the Atlas of Living Australia.

**Pileate Form**

Generally, mushrooms have a fruiting body characterized by the presence of a cap (pileus) that is clearly differentiated from the stalk (stipe) and has gills (lamellae) on the underside. However, the term mushroom has been used for a range of groupings listed below. For example, a stalk is generally absent in the polypores (form shelf-like brackets) and puffballs (have a supporting base) as well as others.

(Continued on page 4)
Garden for Wildlife was launched to an audience of 200 community members at the annual Olive Pink Botanic Gardens Plant Sale on the 24th March 2007.

Since this auspicious beginning, the Garden for Wildlife program has established itself as an important aspect of community and environmental service in the Alice Springs region. Our members are an inspiring example of one person making a difference, and together, showcase a committed and cohesive community of on-ground action.

Over the life of the program in Central Australia, we have registered 248 Garden for Wildlife properties. This number of properties has provided a total habitat area of 247,261 m² (27.43 ha) for our unique wildlife. Just as important, is the community engagement aspect of the program. We have engaged with individuals and families, and their friends and neighbours to support, educate and inform a community with an estimated population of 450+. The program’s conservation effort in the Alice Springs urban community has the potential to reach even further as members take their Garden for Wildlife experience to their next place of residence, wherever that may be.

Ada Markby (pictured right) was originally interested in joining the Land For Wildlife (LfW) program in Alice Springs. However, her urban 880 m² property didn’t meet the size requirements for LfW status. Not one to be deterred, Ada suggested that a ‘Garden for Wildlife’ program might be an alternative for Alice Springs urban residents keen to support Australia’s environment. Subsequently, Ada was proudly announced as our 1st Garden for Wildlife member on 3rd April 2007. Ada has filled her garden with native and non-native species, which is continuing to provide important wildlife habitat within the Alice Springs suburbs today. We offer a hearty thanks and a Happy GfW Birthday to Ada and her property. Ada’s drive and passion for wildlife conservation has been instrumental in the program’s presence in Central Australia.
Therefore, here I refer to the typical capped fungus that is supported on a stalk and has free/exposed gills for dispersal of spores. There are many species present in central Australia, with one of the most commonly reported to Atlas of Living Australia being the False Parasol, *Chlorophyllum molybdites*.

**Pleurotoid Fungi and Polypores**

Pleurotoid fungi are those with gill and laterally-attached fruiting bodies, and are commonly referred to as oyster mushrooms. Laterally-attached fungi with pores rather than gills on the underside are referred to as polypores, or Bracket Fungi, and their woody fruiting bodies are called conks. They are both typically wood-decay fungi and therefore most inhabit tree trunks or branches consuming the wood and therefore they play a very significant role in nutrient cycling and carbon dioxide production of ecosystems. Some species, such as the Hairy Trumpet, *Panus fasciatus* has a stem and so therefore can be confused with that of a pileate form.

**Jelly Fungi**

Jelly fungi are so named because their foliose and irregularly branched fruiting body has the consistency of jelly, or is rubbery and gelatinous. They harden and shrivel when dried and return to their original form when wet. While some are edible, they are unpleasant to taste and have an earthy flavour.

**Corticioid Fungi**

The corticioid fungi, also known as crust fungi and patch fungi, are a group of fungi having effused, smooth fruiting bodies that are formed on the undersides of dead tree trunks or branches. They are not overly common in central Australia, however there are roughly eight species that have been reported on the Atlas of Living Australia.

**Gasteroid Fungi**

The gasteroid fungi produce spores inside their fruit bodies rather than on an outer surface. When the fungi mature, the outer ‘skin’ splits open to release thousands of tiny spores. This process is often triggered by raindrops or breezes and may continue over many months. Species include puffballs, earthstars and stinkhorns.

**Puffballs**

True puffballs do not have a visible stalk or stem. The distinguishing feature of all puffballs is that they do not have an open cap with spore-bearing gills. Instead, spores are produced internally, in a spheroidal fruitbody called a gasterothecium. As the spores mature, they form a mass called a gleba. Eventually, it develops an aperture, or bursts, and the spores escape. This grouping includes the genera Abstoma, Bovista, Calvatia, Disciseda, Lycoperdon and others.

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*False Parasol*

*Chlorophyllum molybdites*

This is a widespread mushroom that is highly poisonous and produces severe gastrointestinal symptoms of vomiting and diarrhoea.

*Scarlet Bracket Fungus*

*Pycnosporus coccineus*

This species is saprophytic, a white-rot decomposer fungus. The fruiting bodies of this polypore genus look like bright reddish-orange brackets and are widespread on dead wood due to their saprophytic nature. The upper surface is hard but the under-surface is porous. Despite being poisonous if swallowed, the fungus is used for medicinal purposes by some Indigenous groups, either chewed out (like a teething ring) or applied to the mouths of young children suffering from skin complaints. The fungus so emits an irritant smoke when burned.

*Desert Truffle, Elderia arenivaga*  
(prev. *Choiromyces aboriginus*)

This is a truffle-like fungus found in dry parts of Australia, including the Tanami Desert in the NT. The fungi crack the soil surface as it pushes up from beneath and the cracks are typically what is used to find the fungi. They are roughly spherical in shape and range from 4 to 8 cm in diameter. They are a traditional food source, (apparently with a soft consistency and tasting like bland cheese!) as well as a source of water. Although they are now rarely seen in the landscape, Aboriginal art continues to portray their presence in Dreaming stories.
Dead Man’s Foot, Dyeball
*Pisolithus arhizus* syn. *P. tinctorius*

The Puffball has a fruiting body that is light brown, has scaly skin and is round. It is often found at the base of trees or shrubs. It produces copious amounts of powdery spores that can be used as a strong yellow/orange dye for textiles when mature. When it is immature, it will have a tarry consistency and can be used on wounds. It is rarely used as a food resource, but it is eaten (raw or cooked) when young and soft as an emergency food.

**Earthstar**

Earthstars are 1-2 cm in diameter and height. As the Earthstars mature, the outer layer of the fruiting body splits into segments which turn outward creating a star-like pattern. The little bellows (endoperidium) that are propped up on the star shaped rays (exoperidium) release spores via the hole in the centre when rain drops, or wind-blown litter strikes the bellows and puffs out the spores. There are six or so species in Central Australia, with the most commonly reported to Atlas of Living Australia being the Tiny Earthstar,

**Stinkhorn**

Stinkhorns are known for their foul-smelling, sticky spore masses, or gleba. The spore mass typically smells of carrion, and attracts flies and other insects to help disperse the spores. They begin their development as oval or round structures known as eggs, but morph

**Birds Nest**

Birds Nest fungi have small fruiting bodies that resemble egg-filled birds’ nests. They feed on decomposing organic matter, hence are often seen on decaying wood and in soils enriched with wood chips or bark mulch. Their spores develop internally, and the ‘splash cups’ project spores when they

**Secotioid Fungi**

Secotioid fungi are an intermediate growth form between mushroom fungi and closed bag-shaped fungi. They often lack the vertical orientation needed to allow the spores to be dispersed by wind, and the spores are prevented from being dispersed (e.g. when the gills are completely enclosed). The most common of the grouping is the Stalked Puffball, *Podaxis pistillaris*, though there are several other species of stalked puffball in central Australia

Note: For more information and articles on fungi, see the June 2009 and April 2010 newsletters.

References:
Mallapunyah Springs • Register Number: 26

Tree species included in grouping:
Melaleuca
Ficus
Pandanus

Location of grouping:
Mallapunyah Springs,
Mallapunyah Station, via
Boroloola, Tablelands NT

GPS:
-17.12236, 132.92452

Categories of Significance:
Aesthetic
Unique Location
Group

Year Listed:
1989

The Springs in 1989
In these cooling and cooler months, wildlife and humans are likely to become more mobile in the Red Centre. This increase in activity can also increase animals risk of injury from vehicles or other impacts.

It has been said of me that I seem to ‘attract’ injured or sick wildlife. I think the truth is more that I notice that an animal may need assistance, and then do something about it! Many of us that have this sensibility can find themselves in an unknown, unusual or challenging situation where we are not quite sure how to retrieve an animal or what the animals needs are during rescue. Therefore, the following information was recently provided by a registered Wildlife Carer in a workshop aimed at helping people help sick and injured wildlife.

Some of the basic rules to adopt if you find an injured native animal or bird:

***Please DO NOT attempt to handle snakes, bats or adult kangaroos and wallabies; they can cause serious injury***

• If it is safe to do so, pick the animal up using a towel or blanket, being careful to avoid being scratched or bitten. Most small animals can be picked up in this manner – place the towel or blanket over the animal (including its head) and pick it up like you would a small load of washing.

• Place the animal in a cardboard box lined with a towel or blanket. The towel will give the animal something to cling to so that it doesn’t slide around in the box. Make sure that you put some ventilation holes in the box first!

• Place the box securely in your car (not the boot as exhaust fumes can kill the animal). Make sure that the lid is securely closed so that the animal cannot escape.

• If you cannot obtain immediate assistance, keep the animal in a warm, dark place and keep noise to a minimum to avoid stress. Remember the animal is in unfamiliar territory and unfamiliar noises and smells can be extremely stressful to a native animal. Our native animals can die very quickly from stress.

• DO NOT OFFER ANY FOOD OR WATER as native animals have very specialised diets and feeding an animal in shock can be fatal.

• Take the animal to your nearest vet or contact your local wildlife rescue organisation or government wildlife authority as soon as possible. Vet clinics and rescue organisations do not charge to accept wildlife.

• Remember some animals do not require rescuing, for example some baby birds are left for a short time while their parents forage for food. Unless the animal is in immediate danger just keep an eye on it to ensure a parent returns to care for the baby. Removing a baby bird unnecessarily can be very detrimental to its well-being. If in doubt contact your local wildlife organisation for advice.

• If you find a kangaroo, wallaby or possum (the latter are not common in CA), that has been injured make sure you check the pouch – joeys have been known to survive in the mother’s pouch following her death for several days. Do not remove the joey from the mother’s teat if it is furless as irreparable damage can be done to the joey’s mouth if re-
The Desert Frog Story

In March 1964 I went with a group to examine the north side of the Petermann Ranges, and to continue northwards along the NT/WA border. My duties were to collect plant specimens and take notes and photographs. When animal biologist Ken Slater, whose speciality was herpetology, heard of the trip he urged me to collect lizards and frogs for him. I protested that my botany job would keep me too busy. Nevertheless, Ken presented me with several large powdered milk tins containing sphagnum moss for the comfort of living specimens I was presumably going to collect for him.

Two Land Rovers with four personnel left Alice Springs to travel south through intense blowing dust. Central Australia was experiencing its seventh year of protracted drought. The trip took us to Uluru, Kata Tjuta and westerly to the Petermann Ranges along a narrow and very rough track. Other members of our party, more senior than I, had little sympathy for my duties. Their aim was to get the journey done as soon as possible. Hence, my actives became rather adventurous and opportunistic, taking advantage of comfort stops, lunch breaks and night camps. In 1964, no settlement was established at Docker River and the vegetation was in poor condition and wildlife rare.

As we crossed the WA border we were very happy to find a good road which had been constructed by the famed Len Beadell team. The road passed north between the western end of the Petermann Ranges and a landscape feature named the Schwerin Mural Crescent. It was not long after, at Rebecca Creek, I felt some relief to be able to capture a ghecko for Ken Slater. After a refreshing swim in the large and deep water-hole at our next stop, Pankerberry Rockhole (Walter James Range), opportunity presented itself again when I turned over a small rock to discover a frog. I captured and gently placed the frog into one of the milk tins with moistened moss.

By the end of the journey I had managed to collect 56 plant specimens for the herbarium collection as well as notes and photos to produce a useful report. All I had to present to Ken however, was two small lizards, and a frog. I was pleased to learn that I had actually given him a gold nugget!! Ken was overjoyed when he sighted the frog I had so carefully deposited in the milk tin. He gleefully measured, weighed and photographed it, treating the little animal with great care. Ken decided that it was an important enough specimen to be sent to the CSIRO Division of Wildlife in Canberra. Hence the little frog was duly returned to the tin of moistened sphagnum moss, small air holes provided and the lid was secured in place with small dots of solder. The tin, with the much (locally) celebrated content, was henceforth dispatched by air to Canberra.

Travelling north through the sandy desert was much more pleasurable simply because the country was free of dust. We stopped at a post marking the Tropic of Capricorn, so I quickly made a quick plant collection which included a specimen of Hibiscus sturtii var. truncatus. Travelling easterly along the Kintore ranges towards our overnight camp — which netted us a local skink Egernia slateri (right) named in his honour.

Following the postal event, there was a period of strange silence from Ken. Finally, I just had to ask the question: “What did the wildlife people make of the Desert Frog Ken?” “Well”, said Ken slowly, “the tin was delivered to the Wildlife division in Canberra, along with my covering letter. The lid was prised open...and the [celebrated] frog immediately jumped straight out an open window and has never been seen since.”

~ Des Nelson

Ken Slater is remembered by having a local skink Egernia slateri (right) named in his honour.

Image: Holger Woyt
Territory Natural Resource Management are hosting a hands-on 3 day training workshop in Alice Springs on Effective Erosion Control Design & Implementation and will also include technical assistance in Watershed Management and Agroecology. The training is being conducted by Craig Spoonholz and aims to teach farmers and land managers how to set restoration priorities that align with their management objectives. The workshop will empower participants to make a positive difference in their own watersheds by emphasising an understanding of root causes and healing processes, rather than simply addressing the symptoms of degradation.

Click here for more information and registration

**The April Habitat Quiz...??**

1. What is the correct term for the internal spheroidal fruitbody of a Puffball fungi and what is its function?

2. Which of the following ant species are considered a pest in the Alice Springs region? a) Desert Ant, *Melophorus bagoti* b) Mulga Ant, *Polyrhachis macropa*, or c) Big-headed Ant, *Pheidole megacephala*?

3. Are there any native cacti species in Central Australia and what are they?

4. What is the name of the fungi and its 'form' that is pictured in the front page banner of this month’s newsletter?

5. What would be classified as appropriate habitat for the threatened species, Slaters Skink, *Liopholis slateri* in arid regions of Australia?

6. What is the 10th tree listed on the Central Australian Register of the NT Significant Tree Register, and what is its classification of significance?

**Answers will be in the next newsletter**
A recent study on the relationship between bird communities and a number of impact factors, including: habitat, social factors, human responses and bird populations, has been conducted in Central Arizona-Phoenix, which, like Alice Springs, is an urban centre in a desert region. The research aimed to explore the impacts on wildlife in areas being managed as ‘human habitat’, i.e. urban centres. Findings have explicitly demonstrated how the decisions we make about planning and garden design affect other species that share our urban ecosystems with us.

Different bird species and landscaping arrangements showed a positive association to each other, for example, desert birds were associated with desert-like landscaping. Outcomes also showed that although the presence of bird species, abundance and the number of species all decreased over time, in areas where homeowners provided more natural landscaping, habitat specialist birds were still found e.g. birds associated with the arid-zone in gardens that provide local native plants.

Unusually for an ecological study, these scientists included socio-economic factors associated with species diversity in their study. Their findings revealed differences in social and demographic attitudes and behaviours toward conservation. For example, the desert-like landscaping types and desert specialist bird species occurred more frequently in neighbourhoods with higher per-capita incomes and lower percentages of renters and Hispanic/Latinx residents. They also found greater resident satisfaction in neighbourhoods with greater bird diversity, and neighbourhoods with wealthier residents had more native bird species.

While the decrease in bird diversity over time was not unexpected. Surprisingly landscape types changed little over time and in particular, the number of desert-like landscapes retained in gardens was the same between periods. A loss of species in residential yards could significantly affect residents’ access to a vibrant and unique desert fauna, and the researchers [and Land for Wildlife & Garden for Wildlife coordinators] hope this information will inspire residents and local gardening organisations to landscape with birds in mind.

*Inspiration starts with a conversation….so espouse to your neighbours that scientific evidence has now shown that being a ‘…Wildlifer’ benefits your household’s, and your own, wellbeing!*
February Habitat Quiz Answers

1. A cryptogam is a plant that reproduces by spores, without flowers or seeds. "Cryptogamae" means "hidden reproduction", referring to the fact that no seed is produced, thus cryptogams represent the non-seed bearing plants.

2. The toughest (known) natural fibre is the material that makes up limpets teeth. The teeth are both stretchy and strong thanks to their unique composition. They contain millions of aligned nanofibres, made from a mineral called goethite, which are embedded in a softer shell of chitin.

3. The Spotted Turtle-dove is classified as a pest in Alice Springs because of the increased competition with native birds for resources (food, nesting sites and habitat), potential for transferring disease and pathogens around birdbaths, and the general nuisance factor near back-yard chicken coops (disease, competition, noise).

4. February newsletter banner: Brilliant Hopbush, *Dodonaea microzyga*

5. February newsletter page 6: a) *Acacia victoriai*, b) *Melaleuca fauricola* (formerly known as *Callistemon pauciflorus*), c) *Ptilotus spp.*

6. The first tree added to the NT Significant Tree Register for Central Australia was one of the oldest known date palms in Alice and is located on the corner of Wills Tce and Bath St. See the [register](#) for more interesting information.

Cheers,

*Kate, Caragh, Candice and Bill*

Do you have any stories or images to share? Get in touch! We are always looking for members to share their experiences via our social media and newsletter. Email us with your suggestions of articles or topics that you would like to see featured.

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