October 2022

Alice Springs Field Naturalists Club Newsletter

The Alice Springs Field Naturalists Club headed out to the small but pretty Kuyunba Conservation Reserve on October 8th. Kind weather made for a beautiful morning winding our way through the White Cypress and long grass. With birds all around, heaps of interesting tracks and visits from a Park Ranger and the Federal Police there was much to keep us busy.

CONTENTS

P2: Contacts and coming events
P3: ASFNC Planning meeting update / Aussie bird count
P4-6: Adam Yates – Alcoota – report Meg Mooney
P7-10: Kuyunba Conservation Reserve
P11: A few local Swainsonias – Barb Gilfedder
P12: Tasmanian crayfish – Rhondda Tomlinson

Postal Address: P.O. Box 8663
Alice Springs, Northern Territory 0871

Web site:
http://www.alicefieldnaturalists.org.au

Email:
contact@alicefieldnaturalists.org.au

Follow us on Facebook!

Contacts:

Alice Springs Field Naturalists Club

President:	Clare Pearce	0434 340 338
Vice-President:	Marg Friedel	0417 849 743
Secretary:	Suzanne Bitar	0419 897 735
Treasurer:	Neil Woolcock	0428 521 598
Public Officer:	Anne Pye	0438 388 012
Property Officer:	Claire Norman	0448 341 795
General members:	Jan Black	
	Wendy McTaggart	
Newsletter/ webpage	Clare Pearce	clarepearce01081969@gmail.com
Facebook	Meg Mooney	moon3@iinet.net.au

Thankyou for being up to date with your membership fees, this goes go towards our ongoing costs such as insurance.

Membership fees are:

- Family $30
- Concession $25
- Individual $20
- Concession $15,

Life membership - Ten times normal fee.

Fees can be paid in cash, by cheque or by direct debit:
Westpac - BSB No. 035303
Account No.100981

Coming events:

Speaker night: Glen Marshall

Date: 9/11/2022
Time: 7.00pm
Location: Olive Pink Botanic Garden
Topic: Volcanos

Australian Pollinator Week:

12 November 2022
Location: Emily Gap
Time: 8.30am meeting time for about an hour maximum
Leader: Leader: Clare Pearce unless someone else wants to have a go
Get buzzy with the bees for Australian Pollinator Week. The sound of busy bees – both native and introduced – are often a feature of the hot morning air at Emily Gap. Come do citizen science again and take part in a wild pollinator count. It will be getting warm so please bring a broad brimmed hat and plenty of drinking water.

Christmas Brunch:

Date: TBC – probably late November
Time: 8.30am –
Location: Alice Springs Telegraph Station picnic area
Bring: a plate to share

Alice Springs Field Naturalists Club October 2022 planning meeting:

The 2022 Alice Springs Field Naturalists Club 2022 October planning meeting was held on Thursday 20 October at Olive Pink Botanic Gardens.

Topics for discussion: general governance – Financial report tabled, coming events including Christmas breakfast. Properties – a box of old mugs will be donated to St Vinnies / Salvos. The very old ASFNC laptop is coming to the end of its useful life. The Committee briefly discussed replacing it but tentatively decided to instead look to developing a cloud-based storage solution instead of investing in short-lived digital assets. The website was also discussed, it looks to be using an old / rapidly aging platform that may or may not be able to be made appropriate for use on mobile gadgets. Stay tuned for more website related news in the future.

Planning meetings are held four times a year, and while the Executive Committee will generally form the quorum for planning meetings, all ASFNC members are very welcome. The more minds the merrier. The next planning meeting will be held in early February and events and activities for the following three or four months will be decided then. If you have any ideas for presentation nights or excursions, please email them through to clarepearce01081969@gmail.com .

2022 Aussie bird count

The Aussie bird count was held 17-23 October this year and I'm predicting that there will be a record number of birds counted around Australia.

While the final Birdlife Australia statistics for the event are not yet available so far their website tells me that there were:

4,083,106 birds counted as part of Australia's biggest citizen science project!

How fantastic is that!

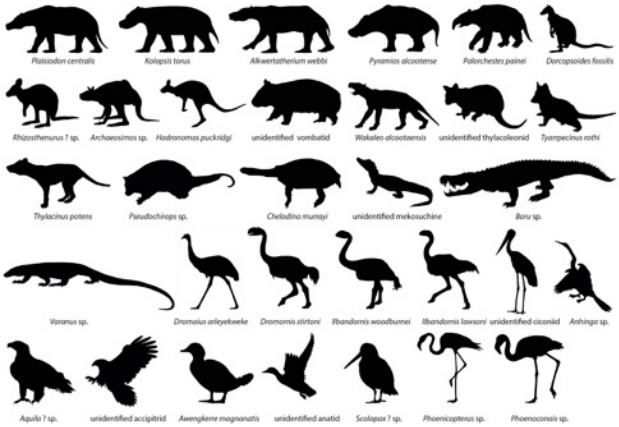
Thanks to those who came out to join me for our little Alice Springs Field Naturalists Club bird counts, and thanks also to those who were participating in the count during the week. Even if you didn't spot anything out of the ordinary your data goes into the great melting pot that is the Aussie bird count, and trends from the data give researchers a very powerful monitoring tool.

If you are looking for other bird watching information and opportunities head to:

https://northernterritory.com/things-to-do/nature-and-wildlife/bird-watching

Presenter Night – 12 October 2022

Adam Yates with an Alcoota Update



Report by Meg Mooney

Alcoota: Plans, Prospects and Palaeontology

The Alcoota megafauna site is 108 km northeast of Alice Springs, in a geological structure called the Waite Basin. This Basin is a depression in the crystalline rocks of the earth's crust where sand, mud and silt accumulated from around 65 to 4 million years ago. In the Alcoota part of this Basin the sediments are 7 to 9 million years old.

The pits from which megafauna bones have been excavated at Alcoota, over the last 60 years, are aligned roughly northeast southwest over a distance of around 70 metres, and have the names, reflective of their history, of Main Pit, Classy Corner, Shattered Dreams and South Pit.

Alcoota is called a megafauna site because the fossils are dominated by animals larger than 45 kg. Around 33 species have been found, the most common being browsing marsupials. The largest of these, *Plaisiodon*, is buffalo-sized and the smallest, *Kolopsis*, is around the size of a sheep. Another browser, *Palorchestes*, has short trunk and is something like a marsupial tapir. *Palorchestes* had tiny reduced eyers and large powerful forelimbs, rather like an anteater, but teeth like a kangaroo. Adam commented that *Palorchestes*'s lifestyle is still, a mystery.

The most famous species found at Alcoota is a large flightless bird, *Dromornis stirtoni,* related to geese. The male *Dromornis* grows up to 3 metres high and 600kg in weight and is possibly the largest bird that ever lived. There are also two ostrich-sized flightless birds and a dwarf emu at Alcooota.

The predators at Alcoota include *Thylacinus potens,* the size of a Tasmanian thylacine but with a boofier head and stronger jaws. Other predators are Wakaleo, a small marsupial lion, and Baru, a large crocodile.

Alcoota also has two flamingo species, one large and one small, and smaller flying birds including an eagle and a duck. Almost every species at Alcoota is not found anywhere else.

What makes Alcoota special?

Alcoota has a nice array of large animals but is special in particular because:

- It has Australia's oldest mammalian megafauna.
- It has Australia's most concentrated layer of vertebrate fossils, with bones from around 3,000 individuals.
- It is the only rich site containing terrestrial animals from the late Miocene, 6 to 10 million years ago. Adam said that this is a slice of time that could be called the beginning of the great drying of Australia. Before this time the country was much wetter. For example, the 15 million-year-old fossils from Riversleigh in Queensland show this region was then a verdant jungle with lots of smaller animals suited to jungle life, like possums, bandicoots and marsupial rats.
  I asked Adam what caused the great drying and he said the world had become colder, because of less CO_2 in the atmosphere, and so much of the water was tied up in polar ice caps and there was less evaporation from the sea. As Australia became drier there was more open canopy vegetation which meant there was space for lots of large animals.

The Alcoota bones

At Alcoota, the megafauna bones occur in loose silt and clay around a metre below the surface. When rain filters down to this level, the clay absorbs water and swells, then dries out and shrinks. So the bones are in sediment that has periodically expanded and contracted for thousands, if not millions, of years and this has caused these bones to crack. Adam explained that people working to extract the bones need to uncover a small part of a bone at a time, and dribble a plastic called paraloid, dissolved in acetone, into the cracks. The problem is that if you add too much of this plastic the acetone it is dissolved in will cause the bones to disintegrate. So it's a tricky process!

As of August this year, the Museum of Central Australia had 8,530 registered bone specimens or specimen lots from Alcoota!

Why keep going back to Alcoota?

1. **Rarities.** Given the random nature of the deposit, you can't predict where these may appear. Rarities at Alcoota include small flying birds, marsupial carnivores, a short-faced kangaroo, a wombat and a dwarf crocodile. Modern wombats have molars that keep growing and a super-strong skull for burrowing. A fragment of jaw with ever-growing molars, a very flat and thick piece from the top of a skull and toe bones have been found at Alcoota. Occasionally something quite new comes up: a recent find is a woodcock shoulder bone.

2. **Community outreach, g**iving community groups a chance to experience an excavation. A recent priority has been strengthening ties with Engawala community, 5 kms from the fossil site. During digs, people from this community are invited to the site for a barbecue and site tour. There are also site tours for the wider community. Flinders University palaeontology students, and their lecturers, also regularly come to the digs.

3. **To gather more data on the nature of the site.** The Alcoota bone layer is very thin, 20cm to 40cm, and its height only varies by about 60 cms over the extent of the site, about two football fields in size. This was confirmed by a survey of the pits conducted at the dig this year.

How did this bone layer form?
There have been several theories.

- **It is on the site of a big lake where carcasses steadily accumulated.** This was an early hypothesis and has been discounted because the bones are not weathered and decayed, as you would expect if they accumulated over a relatively long period of time. And the bone layer is very thin.

- **The animals were tethered to a waterhole during a drought.** This theory has been discounted because a study of *Dromornis stirtoni* femurs found that the smaller ones all had medullary bone. Birds form this calcium-rich bone in preparation for egg-laying. *Dromornis stirtoni* femurs fall into two size groups, showing these animals were sexually dimorphic, the group of smaller femurs belonging to females. So all the females were gearing up to lay eggs and weren't drought-stressed. In addition, many of the mammals found at Alcoota have pouch-bound joeys, with no teeth erupting, so many of the mammals were breeding too.

- **Flood-induced mass drowning.** This is Adam's favoured hypothesis at the moment. The bone layer at Alcoota is consistent with carcasses being piled up by floods, for example, against a sandbank in a river. Crocodiles don't usually drown but the crocodiles at Alcoota may have died fighting each other over the carcasses. Some smaller animals, which are very rare at Alcoota, can escape floods by climbing trees. The carcasses must've started to decay before being moved by further floods to their present site, so most of them were dismembered and the bones jumbled.

4. **To search for new quarries with different fossils.** In 2019, a new excavation was made just south of the main pit. There have been some very interesting finds at this site, called Classy Corner. This year a pair of articulated *Dromornis stirtoni* leges, complete with toes and claws, were excavated. Adam expects that the rest of this skeleton, at least up to the hips, will be found when the large amount of overburden is removed. The articulated back end of a small *Dorcopsoides* wallaby, including tail, trunk, hips and back legs, has also been found at Classy Corner.

5. **To build statistically useful sample sizes so paleobiological studies can be conducted.** An example is the study of *Dromornis* leg bones mentioned above, revealing that that there were two size peaks, deduced to correspond to males and females.

Adam Yates, bringing the Alice Springs Field Naturalists Club up to date on what's been happening at Alcoota

Kuyunba Conservation Reserve – 8 October 2022

This tiny but culturally and ecologically significant Reserve lies around 15km south west of Alice Springs. Home to a healthy populations of *Callitris glaucophylla* and *Eremophylla longifolia* the Reserve is perhaps best known for the rock art adorning the walls of the low-set escarpment. Halfway around the short walking track some of the rock art can be seen in an slight overhang of rock. This little gallery has unfortuantely been damaged in the past by mud duauber wasps but NT Parks and Wildlife Joint Management arrangements ensure that appropriate and effective management of the site is now in place.

There's a short walking track, with half the track unavaialble to women as the second half ot the track runs past an important men's site.

The Reserve has an interesting variety of habibtats, and because of this, is a great place for early morning bird watching. Neil's bird list included:

Black-breasted buzzard
Willie wagtail
Black-faced cuckoo shrike
Horsfield's bronze cuckoo
Little woodswallow
Grey shrikethrush
Singing honeyeater
Rainbow bee-eater

While we were at first somewhat horrified by the pruning scars on nearly all the *Callitris,* Richard, a Park Ranger who came by on patrol towards the end of our visit, assured us that this was a deliberate and effective fire mitigation action. With dry grass cleared away from under the trees and lower branches removed the plants have a much better chance of withstanding a wildfire than if there was a tangle of growth around the lower section of the trunks.

Callitris glaucophylla grow along the short walking track at Kuyunba. Most are located up against the rock face, perhaps gaining some protection from fire as the grass is less thick in these areas. While adult Callitris are able to manage cooler, slower fires every now and then, seedling and juvenile plants are generally killed by fire.

Bird watching at Kuyunba Conservation Reserve

Callitris glaucophylla – adults and empty seed capsule

Woolybutt grass, *Eragrostis eriopoda was* a strong feature in the understory.

Rock art site, this one is accessible to all visitors and now under protective management

Eremophila longifolia were common along the walking track at Kuyunba

Smaller wildflowers such as this *Xerochrysum bracheatum* grow close to the walking track at Kuyunba, perhaps thanks to great efforts with buffel grass control

Thanks to Joy Taylor for her great photos of our Kuyunba excursion

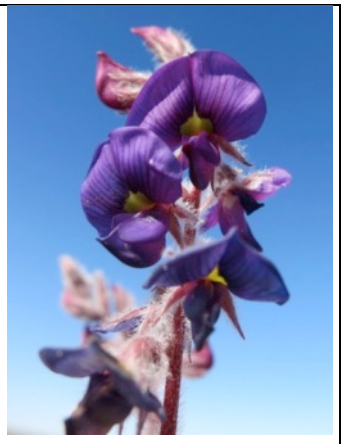
A few local Swainsonas – Barb Gilfedder

Swainsona is a large genus in the Fabaceae family, native to Australasia. There are 85 species, all but one of which is endemic to Australia. They have pea flowers with a standard petal, 2 wing petals and a keel petal. Usually the flower spikes stand up above the compound leaves. The pod can be inflated or leathery and may have a furrow at the suture line.
The genus was named after Isaac Swainson, an 18th century physician who planted a private botanic garden at Twickenham.

They include *Swainsona Formosa*, Sturt Pea or Sturts Desert Pea, A stunning plant with its large, bright red, pea flowers, which everyone must be familiar with. Although it is planted widely in Alice Springs gardens and even on verges in the Alice Springs, its natural distribution only just creeps into the Northern Territory near the South Australian border.

Swainsona affinis

A sprawling or prostrate herb with mauve or white flowers and small inflated pods. It grows at the Ilparpa claypans.



Swainsona burkei
(Hairy Darling Pea)
A prostrate, hairy herb, named after Robert O'Hara Burke. It has woolly, oblong pods with a furrowed suture line.

Swainsona canescens
(Grey Swainsona)
An erect or sprawling herb covered with white hairs, displaying long, erect flower spikes. The standard petal has a large green triangle at the base and the keel has a knobbly end. The woolly pods are oblong.

Swainsona cycloptera
A prostrate, spreading or scrambling herb. The purple flowers are in clusters. The crescent-shaped pod is with uneven ridges running across. It grows in salty areas.

Swainsona flavicarinata
(Yellow-keeled Swainsona)
A prostrate or ascending green herb. The flowers are purple to pink with darker veining, a yellow keel, yellow-green buds and hairy inflated pods.

Swainsona phacoides
(Dwarf Swainsona)
A low, spreading, perennial herb covered with soft hairs making it look grey. The purple flowers are held erect in clusters The cylindrical pod has a deep furrow

Tasmanian crayfish – Rhondda Tomlinson

27th August 2022 Bob Read and I attended a presentation by the Tasmanian Land Conservation Group at Gowrie Park near Sheffield, Tasmania and they spoke about the Giant Freshwater Crayfish and the Burrowing Crayfish. I have referred to an NRM publication on the details about both types of Crayfish. There was a field visit to a property to see the Chimneys of the Burrowing Crayfish. I did not go to this but Bob Read did and took two amazing photos.

The Giant Freshwater Crayfish (Astacopsis gouldi) is the largest freshwater crustacean in the world and is unique to northern Tasmania. It can grow up to 6kg and up to a metre in length. (General weight found about >2.5kg). They are very slow growing and long-lived, with females taking up to fourteen years before they can breed and males up to nine years. They can live up to sixty years. They live mainly inflowing or still waters, in logs or along undercut banks and are very hard to find.

In contrast, the species of Engaeus, Geocharax, Ombrastacoides and Spinastacoides are small freshwater crayfish with a body length of under 10cm. Within the genus Engaeus there are about 15 known species, 13 of which only occur in Tasmania. Most of the species are known by their ability to burrow. The burrowing crayfish live their entire life within their burrow systems in muddy banks, seepages and peaty areas. Burrows can be simple and shallow or complex and extensive. The distinctive chimneys are the entrances to the burrows and are all that most of us will ever see of a burrowing crayfish.

Both the Giant Freshwater Crayfish and Burrowing Crayfish eat decaying organic matter e.g. Rotting leaves, twigs and wood and sometimes invertebrates like worms and grubs. Threats to all crayfish include damage to streambanks from stock and machinery, land clearing and loss of vegetation and shading; runoff and pollution entering the waterways; sedimentation from erosion and runoff; introduced species and climate change.

Fresh chimney probably pushed up previous night.

An older chimney

(Photos Bob Read)

It is illegal to fish for any species of freshwater crayfish, including yabbies, in Tasmania.