



**May 2022**

# Alice Springs Field Naturalists Club Newsletter



*Ken Johnson (in the foreground) and Peter Latz could not resist pulling out the odd invasive weed, as they guided Field Naturalists along a stretch of the Todd River bank that Ken has been maintaining for many years. Report of the walk will be in the June newsletter.*

Meetings are held on the second Wednesday of the month  
(except December and January) at 7:00pm  
at the Olive Pink Botanic Garden.

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

**Web site:**

<http://www.alicefieldnaturalists.org.au>

**Email:**

[contact@alicefieldnaturalists.org.au](mailto:contact@alicefieldnaturalists.org.au)

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## NEWSLETTER

The next newsletter will be June 2022.

The deadline for that newsletter will be 23 May 2022.

Please send your contributions to Barb Gilfedder: [bjfedders@gmail.com](mailto:bjfedders@gmail.com)

## ALICE SPRINGS FIELD NATURALISTS CLUB

It is important to watch for up-to-date flyers or contact leaders for details as arrangements may change.

- Saturday 7 May**      **Walk from Jessie Gap to Emily Gap** – Contact leader **Jill Brew**  
for details of meet and car arrangements [jillinalice@gmail.com](mailto:jillinalice@gmail.com) or 0437 223 203
- Wednesday 11 May**      **ASFNC Monthly Speaker Night at 7.00pm** at Olive Pink Botanic Garden. **Charlie Carter and Deb Clarke** will present a report on the massive flood damage at Birthday waterhole / Hugh river. Huge old River Red Gums uprooted and washed away!  
Thank you Charlie and Deb for volunteering at short notice, after Ken Johnson unable to come because of family sickness.
- Sunday 15 May**      **ASFNC Planning Meeting** at Olive Pink Botanic Garden at 2pm. All members welcome - please come if you possibly can. Contact Barb Gilfedder 0407 668868
- Friday 20 May**      **Frog Friday. Clare Pearce will lead a trip Checking out the frogs in Simpsons Gap.**  
Meet at Simpsons Gap Picnic Area at about 6.00pm for a BYO picnic tea, and we will wander down to the waterhole when it gets dark. Wear closed shoes, bring a torch and mosquito repellent. Contact Clare at [clare.pearce@nt.gov.au](mailto:clare.pearce@nt.gov.au) or 0457 035 472 for further information.
- Saturday 28 May**      **Limestone Hill Walk.** Contact leader **Peter Bannister** 0448 600 106 or [bannister.peter@gmail.com](mailto:bannister.peter@gmail.com)
- Wednesday 8 June**      **ASFNC Monthly Speaker Night at 7.00pm.** at Olive Pink Botanic Garden. **Karlee Foster** will give a presentation about Bio-security in central Australia.

### Alice Springs Field Naturalists Club

#### Committee Members

<b>President</b>	Barb Gilfedder	0407 6688 68
<b>Vice-President</b>	Marg Friedel	0417 849 743
<b>Secretary</b>	Connie Spencer	0429 966 592
<b>Treasurer</b>	Neil Woolcock	0428 521 598
<b>Property Officer</b>	Claire Norman	0448 341 795
<b>Members</b>	Lee Ryall	0417 401 237
	Rosalie Breen	0458 155 141
	Peter Bannister	0448 600 106
	Clare Pearce	0457 035 472
<b>Public Officer</b>	Anne Pye	0438 388 012

#### Other Club Responsibilities:

Newsletter – Barb Gilfedder

[bjfedders@gmail.com](mailto:bjfedders@gmail.com)

Facebook Organiser – Meg Mooney [moon3@iinet.net.au](mailto:moon3@iinet.net.au)

Website controller – position vacant

### AUSTRALIAN PLANTS SOCIETY - ALICE SPRINGS

[apsalicesprings@yahoo.com.au](mailto:apsalicesprings@yahoo.com.au)

#### Wednesday 4 May 2022, Members night, 7.00 pm, Olive Pink Botanic Garden

Members are invited to bring in some photos to show or some plants to discuss. An interactive night of discovery.

#### Wednesday 1 June 2022, Introduction to plant nomenclature 7.00 pm, Olive Pink Botanic Garden

Peter Jobson will talk about how plants are given their scientific names.

#### Friday and Saturday 1 - 2 July 2022, Alice Springs Show

Australian Plants Society Alice Springs has a stall at the Show with a great display of local flowers, providing information on native plants and selling plants to support Olive Pink Botanic Garden. Please support the committee by helping at working bees and volunteering on the stall. There will be no evening meeting in July.

Speaker Evening 13 April 2022

## Fish of central Australia – Angus Duguid and Tim Fernando.

Report by Meg Mooney

Angus and Tim introduced themselves. Angus worked for Northern Territory Parks & Wildlife for many years, as both a scientist and ranger, and now heads up the NT Department of Primary Industry & Fisheries in the Centre. Tim did his honours on a Galaxias fish species. He has worked as an NT Parks & Wildlife ranger in the Centre for several years and pursued his interest in fish whenever possible.

Angus began this entertaining talk with a discussion of the climatic conditions of central Australia, with annual rainfall varying from 50 to 1,000mm. He showed an image of hydrogeologist Bob Read in a tinnie with an outboard motor on the usually dry Lake Lewis, helping with a fish survey. They found a lot of spangled grunters.

Angus talked about how he co-ordinated a major survey of Northern Territory wetlands south of Tennant Creek in 2000-2001, including descriptions and distributions of fish. The survey found 7 species of fish in the Davenport Ranges and 22 in Cooper Creek.

*Map of Lake Eyre Basin showing the principle river catchments. The Finke River in the West is one of the smaller catchments.*



Angus then introduced the Lake Eyre Basin (LEB), which takes up one sixth of the Australian mainland and extends a short distance north and west of Alice Springs and is almost as big as the Murray-Darling Basin. The LEB has one of the last unregulated river systems in the world and these rivers are famous for having the most variable flows. The Indigenous name for Lake Eyre is Kati Thanda.



Angus Duguid in the navy blue shirt, showing Field Naturalist members how to prepare Fyke nets, prior to dragging them out into the water to catch fish, as part of a survey in a Finke waterhole in 2013.

Angus then talked about the Finke River catchment of the LEB. Lhere Pirnte, which means Salty River, is the Arrernte name for the Finke. Studies of ancient river deposits have shown that 700 to 1200 years ago the Finke River flowed into Lake Eyre. After major rains, big lakes, up to several kilometres long, now form in the swales of the Finke floodout and can last for several years. Key natural values of the Finke River system are its drought-refuge waterholes; the diversity and endemism of its fish; rare, relict and diverse plants and invertebrates; and waterbirds.

Mapping of the Finke system is still inadequate and data on it is sparse in many parts. Angus was involved in a survey of Finke waterholes, which are very variable in salt. He told us about two waterholes, that he and his co-surveyor, named Running Bull (there's a story there) and Lucky Strike, in the mid-Finke system. They discovered that Running Bull had relatively fresh water and was highly disturbed by cattle, dingoes and other wildlife. It had very little invertebrate and fish diversity and was full of diving beetles, *Eretes australis*. Lucky Strike, spotted by the helicopter pilot and only 58 metres away, was moderately saline and undisturbed. Their nets caught 1205 Finke Hardyheads, 137 Rainbowfish, 126 Sailfin Glass Fish and 1 Finke Goby!

Angus concluded his section of the talk with a discussion of the depth of some of the well-known permanent waterholes in the Finke system (about which there is much local mythology). In 2013, Ellery Big Hole was found to be 11 to 16 metres deep, Glen Helen waterhole 12 to 17 metres deep and Ormiston waterhole 13 metres deep.

Tim began his section of the talk by explaining fish surveys that he was involved in as part of an LEB River Assessment project, with most of the funding for the Finke River. Tim explained how scientists and rangers use Fyke and Seine nets to catch fish. They identify, count and measure the fish caught, before releasing them back into the waterhole they came from. They also measure the water quality and depth. These fish surveys, some of which Tjuwanpa Rangers, Indigenous Traditional Owners and Alice Springs Field Naturalists assisted with, found no introduced fish.



*Each individual fish was identified, measured and counted before it was returned to the water. Nov 2013*

Tim then described the 9 fish species in the Finke system:

1. **Spangled Grunter.** *Loong-ul-poor-a* in Arrernte. The most common freshwater fish in Australia, this fish can tolerate water between 5 and 44 degrees Centigrade. It can live in fresh to very saline water and grows up to 300 mm. Spangled Grunters disperse rapidly after rain, leading to myths of it raining fishes.



2. **Banded Grunter.** *Indam-indam* in Arrernte. These vertically-striped fish, up to 200 mm long, are fast, powerful swimmers and highly territorial. If they live in more turbid water, they do away with the stripes. Angus added that these fish have beautiful big eyes.



3. **Desert Rainbowfish.** These fish have spangles of rich and varied colour, especially in clearer water, and grow up to 80 mm. They are narrower when young and more football-shaped when older. They are sexually dimorphic, that is the males and females look slightly different, the males having lines of black flecks on their tails.



4. **Glassfish species.** This fish is undescribed, which means it doesn't have its own species name yet. It is a beautiful, see-through little fish up to 60 mm long. It's distinguished from rainbowfish by its rounder shape and large eyes.



5. **Hyrtl's Catfish.** This primarily nocturnal fish grows up to 350 mm but is usually 150 to 200 mm long. The dorsal and pectoral fins have venom, which can result in a nasty sting.

6. **Bony Bream.** *In-da-beat-num* in Arrernte. This fish grows up 470 mm and is a prized food for Arrernte people. It has a distinctive divided tail. Bony Bream are highly sensitive to rapid changes in water temperature and are the fish sometimes seen dead around waterholes, often after particularly cold nights.



7. **Finke Morgurnda.** These fish are endemic to the Finke and grow up to 120 mm. They are ambush predators with sharp teeth and have a preference for fresher water.

8. **Finke Hardyhead.** Another endemic. This fish grows up to 65 mm, has a prominent side-stripe and likes saline water.



9. **Finke Goby.** Also endemic. This little fish, a maximum of 60 mm long, has green and gold dorsal fins and is 'as tough as nails'. It doesn't have a swim bladder so lives on the bottom of a waterhole.



*Meg's note: I think the Arrernte names Tim gave show how you say the word, rather than how it would be spelt in Arrernte.*

Tim ended his talk with a brief discussion of the Todd River Catchment, which includes Emily, Jessie and Wigleys waterholes. Spangled Grunters are the only fish in this catchment. Rainbowfish, seen recently at Simpsons Gap, were probably introduced there by someone. Tim emphasised the importance of not putting any fish into the local rivers and waterholes. Even if the fish are native, they can introduce disease.

Many thanks Angus and Tim!

*On the last page of this newsletter (page 10) is a poster showing the relative sizes of the fish.*

## Trip to Maloney Creek 2016 to 2022

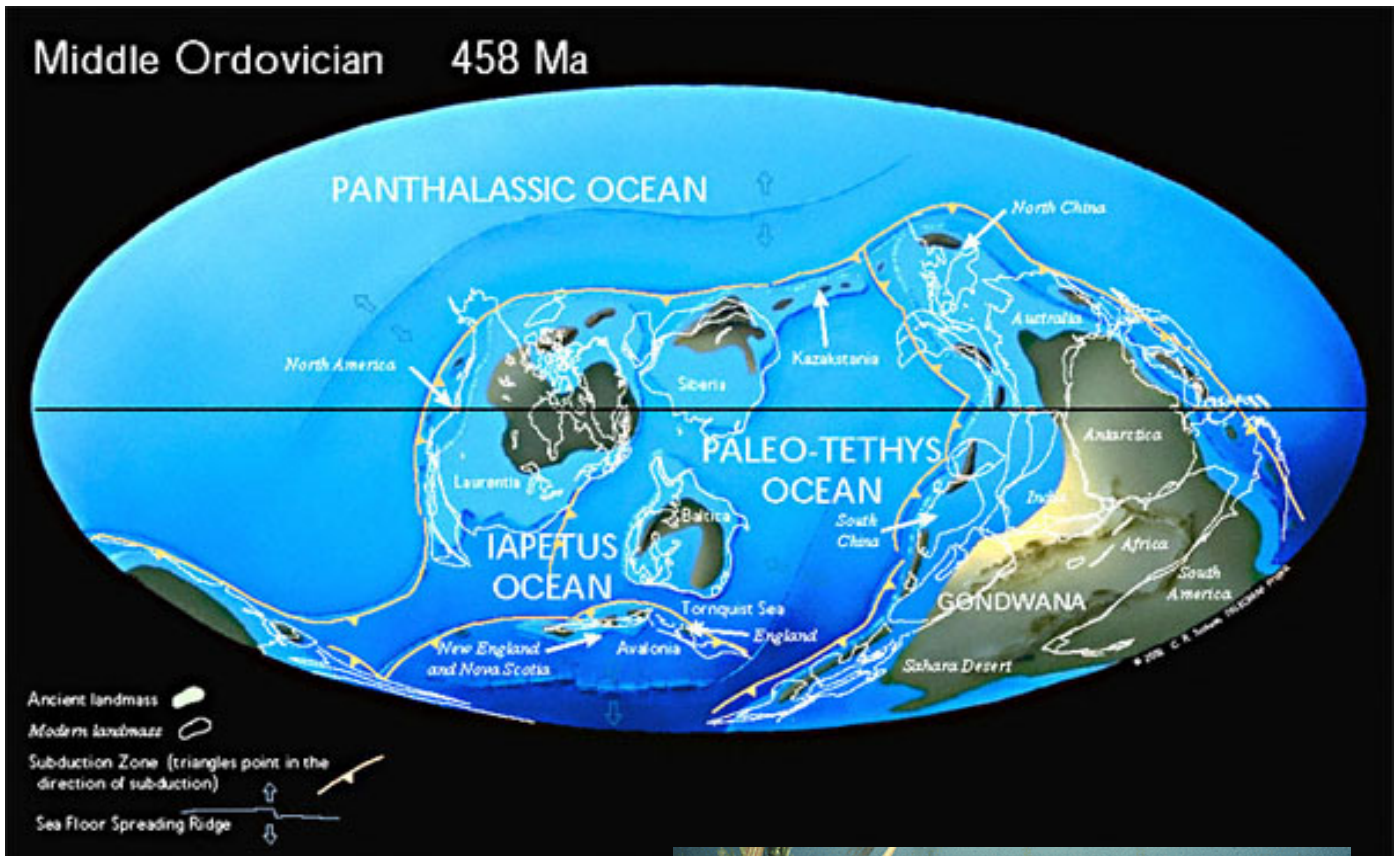
A trip led and reported on by Lee Ryall

In contrast to our last visit to Maloney Creek in 2016, it was a sunny autumn day for the eleven of us who made the trip on 9 April. We had various levels of expertise in fossil hunting, but were lucky enough to have Adam Yates from Megafauna Central with us. As usual, Adam willingly shared his knowledge, with all and sundry. The information below is adapted from the report of the previous trip.



*On this 2022 trip umbrellas were used as sun shades rather than to keep dry.*

In the Ordovician period (around 445 to 443 million years ago) the weather was hot, and sea levels were high. What is now the Maloney Creek region was a warm, shallow equatorial sea, the Larapintine Seaway. At this time, the animals which had evolved in the sea during the Cambrian period, had flourished and diversified. The water was crowded with myriad varieties of invertebrate: trilobites, brachiopods, molluscs, bryozoans, echinoderms and graptolites.



The Australian continent, sitting across the equator, was unlike the continent we see today with a series of seas covering the northern part of the landmass. The main formation at Maloney Creek, the Horn Valley Siltstone, crops out at various places across the Amadeus basin. Here it was laid down between the Pacoota Sandstone and the Stairway Sandstone and is estimated to have formed between 472 and 468 million years ago. As a result, at Maloney Creek we are looking at a tiny slice of time in the early Ordovician. The cutting by the highway extends from an outcrop of Pacoota Sandstone at its southern end



through a Horn Valley Siltstone outcrop, much of which has been eroded away, leaving the long sloping valley which meets the road at the cutting. Although there is some siltstone at Maloney Creek, we mainly see a hard limestone. The consolation is that it's chock full of fossils.

Ordovician waters worldwide were full of the creatures whose remains are common at Maloney Creek, although the fossils are poorly preserved as a result of weathering. As a result, here we find the hard shells creatures, rather than soft bodied animals. Not only are the more complex animals such as trilobites disarticulated (in pieces) which can make them harder to identify, but so are nautiloids, gastropods and brachiopods.



*Rain in 2016 ->*



*A handful of gastropods that Lisa Nunn collected on the 2016 trip.*



*Brachiopods became increasingly common in the Ordovician period.*

Nautiloid cephalopods were one of the top predators in these seas, and sections of their remains are relatively easy to find and to recognise with their cone like shape comprising reasonably well delineated segments. Some even retain the siphuncle (central tube) which they used to adjust their buoyancy. Marine gastropods, bearing some resemblance to garden snails, are also quite recognisable. Trilobites are mainly found as pygidia (tail sections), but tiny spines and sections of carapace can also be spotted, usually jumbled in with a lot of other unrelated bits and pieces. Brachiopods ('lamp shells') became extremely common in the Ordovician- some slabs of limestone at Maloney Creek appear to be largely made up of them, their shells still shining after millions of years of burial. We were able to find a range of fossils in the cutting despite the thick grass after the rains earlier this year. The most exciting of these was a moderately sized hypostome, a horseshoe shaped piece from underneath a trilobite, near its mouth.

*Sunshine in 2022*







From the cutting we then tramped our way up the side of Mount Maloney, into the slightly later formation of the Stairway Sandstone, searching for more fossils. *Cruziana*, (lithified trilobite scratchings) have been found there and the formation is also known to contain fossils of *Arandaspis*, one of the earliest jawed fishes. If this turns out to be from a shark relative, it will be a world first. Unfortunately, we need to find more than just scales to show this. In this trip we found neither of these, but did see a nice nautiloid specimen.

**Top:** A moderately sized nautiloid was one of the most exciting finds of the day.

**Middle:** Adam points to scales possibly from an *Arandaspis*.

**Bottom:** *Cruziana* (Trilobite scratchings) in Stairway Sandstone.

Special thanks go to Patrick Nelson for chasing up permission from Henbury's owners, and to Adam Yates.



# FISH OF THE FINKE RIVER



2. HYRTL'S CATFISH



1. BONY BREAM



3. DESERT RAINBOWFISH



6. SPANGLED GRUNTER



5. GLASSFISH



4. FINKE HARDYHEAD



8. FINKE MORGUNDA



9. FINKE GOBY



7. BANDED GRUNTER