



September 2014

Alice Springs Field Naturalists Club Newsletter



Camping at Horseshoe Bend (full report coming in next newsletter)

Meetings are held on the second Wednesday of each month (except December & January) at 7:00 PM at Higher Education Building at Charles Darwin University. Visitors are welcome.

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

CONTENTS

*Meetings...p2 Trips/Activities...p2 Contacts...p2
Brian's Branchiopods - Report...p3
Mount Sonder Walk...p7
Review: Members' Night...p9*

Web site:

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

Email: contact@alicefieldnaturalists.org.au

NEXT NEWSLETTER

The deadline for the next newsletter is **Wednesday 24 September 2014**.
Please send your contributions to the club email contact@alicefieldnaturalists.org.au
Please **send photos and text separately** as combining them causes formatting issues.

ALICE SPRINGS FIELD NATURALISTS CLUB

Contact: contact@alicefieldnaturalists.org.au

- Wed 10 Sept** Meeting – Speaker: **Michelle Rodrigo** – “The special values of the Lake Eyre Basin and the work done under the Lake Eyre Basin Intergovernmental Agreement”
- Sat 27 Sept** East side track – including **Mount Bond**. 12 km return walk. Meet at Kurrajong Drive bus shelter at Eastern end near Undoolya Road, 6.30am. If you intend to come, please contact Cecily Sutton mobile 0412 501396 or email cecsutton@gmail.com
- Friday 3 Oct** Another Eastside track – 4 km walk Meet on Undoolya Drive, 1 km beyond second Kurrajong intersection. 6.30 start. If you intend to come, please contact Cecily Sutton mobile 0412 501396 or email cecsutton@gmail.com
- Wed 8 Oct** Meeting: **Adam Yates** “Beetles”

ALEC Biodiversity Matters program

- Sun 7 Sept** Threatened Species Day Bird watching at the Alice Spring Sewage Ponds. 7.00- 9.00am.
Meet at the gate at 6.50am.

AUSTRALIAN PLANTS SOCIETY Contact: **APS Secretary** karlee.foster@opbg.com.au

- Sat 13/ Sun 14** APS Overnight camp and *Acacia latzii* monitoring.
- Sun 21 Sept** 10am - Local Australian native plant enthusiast **Geoff Kenna invites us for a walk and talk through his extensive garden at his property at Ilparpa**, featuring local natives alongside many other Australian natives. Come and see the stunning environment Geoff has created through a labour of love. (Please email Karlee.foster@opbg.com.au or call 0488 104 490, expressing your interest in coming along to this APS AS meeting, Karlee will let you know where to go.)
- Wed 1 Oct** APS Meeting at Olive Pink Botanic garden at 7pm Professor Angela Moles: Rapid evolution in introduced species. Angela is based at University of NSW in Sydney and will be attending the ESA conference here in Alice Springs.
- Sun 12 Oct** Twilight walk around OPBG, followed by BBQ on APS. 5pm start

BIRDLIFE CENTRAL AUSTRALIA

Contact: birdlifeca@gmail.com

- Sat 27 Sept to Sun 5 Oct** Red Centre Bird Festival - See the Desert Park website for the full program:
<http://www.alicespringsdesertpark.com.au/plan/events.shtml>

Alice Springs Field Naturalists Club Committee Members

President	Barbara Gilfedder	8955 5452;	Public Officer	Rhondda Tomlinson	8953 1280;
Vice-President	Lee Ryall	8953 6394;	Property Officer	Rosalie Breen	8952 3409;
Secretary	POSITION NOT FILLED AT AGM		Minutes Secretary	Connie Spencer	8952 4694;
Treasurer	Neil Woolcock	8955 1021;	Website and Newsletter	Pamela Keil	8955 0496.

email address: contact@alicefieldnaturalists.org.au

**We do need a Club Secretary. The position is not very arduous. We write few letters.
Please volunteer if you can help us out. Barb Gilfedder, President.**

Editor's Note: The reports on the **Horseshoe Bend Trip** and **Peter Latz' presentation on Buffel Grass** will be in the next newsletter.

Brian's Branchiopods

Report by Rosalie Breen on talk by Brian Timms - 24 June 2014

NB. Digital copies of Brian's excellent posters are available from Barb Gilfedder, if you would like them.

Class Branchiopoda, a section of the Crustaceans.

There are three groups 1. Anostraca - Fairy Shrimps and brine shrimps

Genera, *Branchinella*, *Paratemia*, *Australobrachipus*, *Streptocephalus*, *Artema*

2. Notostraca - Shield Shrimps

Genera – *Triops*, *Lepidurus*

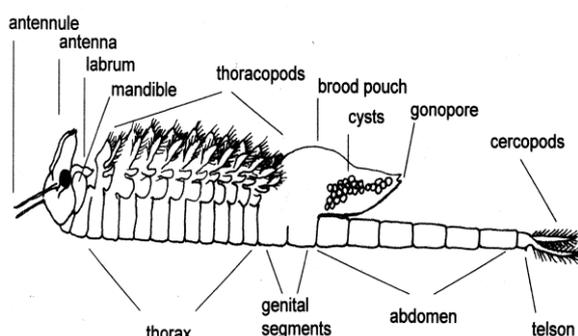
3. Clam shrimps – Three groups divided on families

All of these little creatures although differing in outward appearance have the same structure. A head of a few segments with two pairs of antennae, a thorax-abdomen of many segments which accommodate pairs of feather or leaf like appendages called thoracopods and which are used for locomotion and respiration and in some cases for filtering food of algae and other organic matter. At the end is a telson with a pair of cercopods.

Fairy Shrimps of Australia and Brine Shrimps

Brian has been working on these little creatures for a long time beginning with salt lakes in Victoria. In 1986 on the Paroo River he was netting the river and needed to clean the net between samples, so used a claypan but kept catching little things– fairy shrimps. This began a lifetime of dedication to the Branchiopods.

These are filter feeders. The thoracopods, always beating, filter out microscopic organisms for food. They swim upside down. The male has two pairs of antennae. The front ones feel the female to check if she is the right sort. With the others he grabs her ready for mating. Mouthparts are small with simple labium and mandibles. In the world there are 300 species in 8 families and 30 genera. In Australia there are 61 species (plus 2 introduced) in 5 families.



Fairy Shrimps



Gnamma hole at Baladjie rock WA, home for fairy shrimps.

Note collecting equipment on left

Rockholes or gnammas are one of the habitats for the genus *Branchinella*, freshwater fairy shrimps. Eggs are laid and sink to the bottom of the hole. There they need to dry out completely before they will hatch. Then depending on more water, the right temperature, the larvae hatch out and grow for 2-3 weeks to adults which live for another 3-6 weeks. They are univoltine which means there is only one generation per egg laying episode, and the shrimps are all the same age, and all die out round about the same time.

Brine shrimps are multivoltine, producing many generations per lake fill. Lakes fill in May – Sept

Fairy shrimps specialize in size range for their prey. This means a few different species can live together. On Bloodwood Station in the Paroo studying an area 100km square, each pool would have varying numbers of species from 2 up to 6 of the 17 different species found there.

Parartemia on the other hand does not filter feed. It stirs up the mud from the bottom of the salinas, to find organic matter, so there is competition for food and usually only one species is present in the different lakes.

Another species is actually a predator 40 mm long, eating other fairy shrimps. The biggest in the world at 150 mm. – *Branchinecta gigas* – is North American.

Adaptations have allowed fairy shrimp to live in the very turbid areas in the Pilbara. They have small eyes and long antenna, can't see, but need to feel.

We saw a picture of salt pools inland from Esperance, each a different colour due to pH and salinity level. They occur in the swales of sand dunes, but with big rains in some summers, the waters join up and flush out, becoming fresh to give a different set of species opposed to the regular salt water species. This happens about every nine years indicating the eggs of the fresh water species are there waiting for their opportunity.

Physiology. The shrimps have two methods of adaptation to salty water. Some can osmoregulate which means they can maintain the proper concentration of salt in the blood and the body tissues, but it requires a lot of energy. If they cannot get enough food to provide energy to keep the salt in their bodies at a viable level they just die out. *Artemia* (the introduced species of brine shrimp) can live in very high saline levels. Some species of the otherwise freshwater fairy shrimps are tolerant of some salt so can survive in hyposaline lakes.

In 1981 there were 20 species of *Branchinella* described. That has virtually doubled with Brian finding and describing more since 2000. Most are from WA. I think he enjoys naming new ones too. *B. anatinorhyncha* is a duck-nosed shrimp; *B. clandestina* had been present all the time and only found by luck one year when conditions were right; *B. campbella* was named after a big tough bloke who would be anything but fairylike; *B. erosa* for love because they lock together when mating.

A quote from Brian greatly amused the audience. *Branchinella latzi* was found in Ayers Rock pools. Hopefully it is still there in areas away from tourists who probably have introduced other shrimps via eggs from their boots. “*latzi* is a fairly intolerant species!” That someone was in the audience too.

Eggs are called cysts. Up to 2000 are laid. Under the electron microscope they reveal many different and beautiful sculpturing, all based on a polygon. Some had hairs or projections which probably act as a trap for clay particles giving protection to the cysts from predators. Another *B. longirostris* had very spiky projections which physically deter the planarium which eats the eggs.

One species of *Streptocephalus* was reported in tropical Australia in 1896 and only recently found again. It lays tetrahedral eggs.

In 2007 a new genus *Australobrachipus* was discovered by Brian with another lucky situation. He went to the Paroo after 10 days of rain, but got stranded with more rain, being stuck on the station for two weeks, so he walked everywhere. In the gilgais, he found a very short-lived species, four days to adult, 10 days it's dead, called *A. parooensis* for obvious reasons. Another species *A. gilgaiphila* was found near Moonie in Queensland. Again the name is descriptive.

The number of species in the genus *Partemia* has doubled too, with Brian on the job again, mostly in WA. This endemic brine shrimp has a species which can live at pH 3. In the Northern Territory we have *P. laticaudata* (fat abdomen). All have a system of lock and key for mating. If they fit together they are mating with the right one.

The genus *Artemia* has been introduced to Australia as fish food and as so called sea monkeys for children's interest. It is used for clarifying the water for salt works. The quarantine authorities are not controlling its entry to Australia with the risk of it becoming a pest in salt lakes especially as these lakes are degrading. There are two species, *A. parthenogenetica* and *A. franciscana*.

Order Nostraca Shield Shrimps

Supposedly there are two species widespread in Australia. *Triops australiensis* occurs in northern and central areas, *Lepidurus viridus* is found more in the south. But *Triops* comes in different colours and shapes, notably in granite pools of WA goldfields, and with new DNA analysis there are possibly eight different species. Around Lake Carey, a mining area in WA there are two forms of *Triops*, one of which is very tolerant to high salt levels. On Uluru there could be cryptic species. (more research is required) The phylogenetic table shown suggests the possibility of more species, but it was too complex for easy assimilation.



Shield shrimp *Triops australiensis*

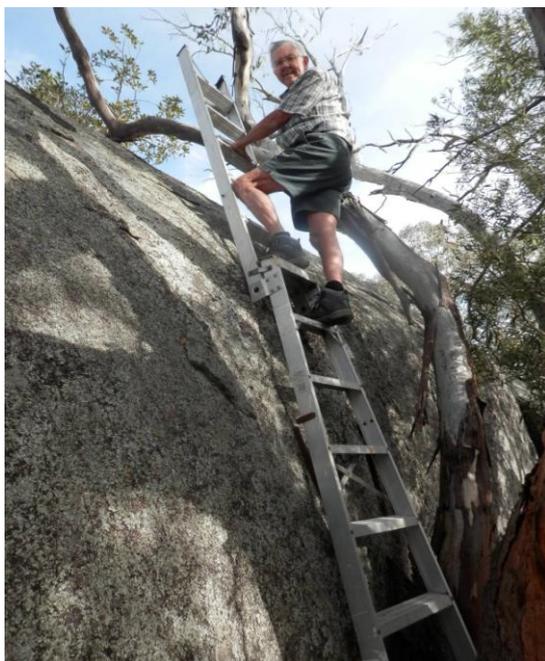


Clam Shrimp

Clam shrimps in Australia

Australia had the largest clam shrimp in the world. Found by the Horn expedition in 1886 around Marla, *Limnadiopsis birchii* which can be up to 30 mm long. Clam shrimps have 16-18 trunk appendages and a telson on the end to kick swim with. They live mainly in fresh water. They are arranged into three groups or sub orders:

- *Laevicaudata* with family *Lynceidae*. Pea clam shrimps
- *Spinicaudata* with three families *Limnadiidae*, *Cyzicidae*, *Leptestheridae*
- *Cycletherida* with one family *Cycletheriidae*



Brian Timms at Flynn's Rock

The little pea-sized pea clam shrimps live in a few different habitats including coastal dunes, and pit gnammas, which are longer lasting waters, so they have a longer life cycle of 3 to 15 months. They feed by scraping algae from hard surfaces.

In the second group, *Australimnadia gigantea* is an uncommon species, big up to 17mm and has a characteristically twisted egg. *Paralimnardia* has 7 species. Found in pan gnammas at Yarragan Rocks WA and Burracoppin Rock. This is its type locality, collected and described by a German when the train line terminated there. There was a picture of a sandstone cliff pool high in the Blue Mountains, home for another species. *Euliemnadia* genus has two described species plus many undescribed species. At Flynn's Rock,

near Tamworth, there's a pool high on top which needed a rather hairy climb up a tree to reach. Brian's wife became his personal health and safety officer and now he has a 17 foot ladder for negotiations. This he has done every month, to check on the status of the new species there, as it only lasts a few weeks. There is also a new species on Uluru.



Coolibah swamp in the Paroo, a typical *Limnodopsis* habitat

Limnodopsis is common with 12 species, three in the Northern Territory. They too have characteristic eggs. Brian described them as muffins, bells and tops in shape. A typical habitat for these clam shrimps is Coolibah swamps as in the Paroo. *L.*

centralensis is obviously our local species. It grows 4-12mm.

There are 6 species of *Caenestheria*, including *C.lutraria* which is common in claypans of eastern Australia. It appears around Alice Springs and is the big one, 12mm, with distinctive growth rings. *Caenestheriella packardi* is the other smaller red clam shrimp found locally and quite common. (There were some live specimens to look at) Many more species of this one are yet to be described. *Caenestheriella mariae* was named for Princess Mary. It, not she, lives only in gnammas in WA. *Eocyclus parooensis* is the most salt tolerant species of the clam shrimps.



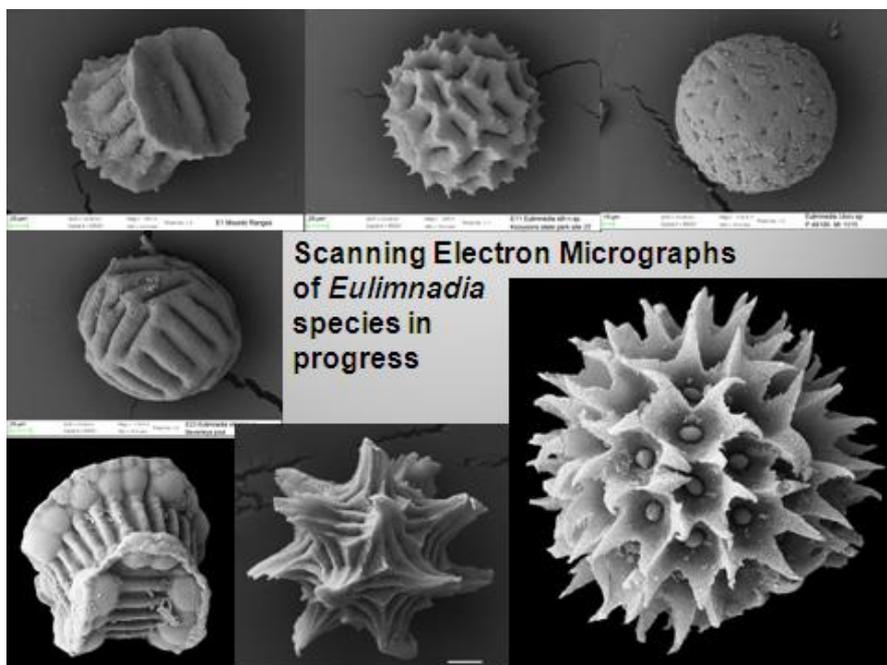
Limnodopsis centralensis

Lake Bindegolly is an episodic fresh –hyposaline lake in Western Queensland. A *Leptestheria* was recently discovered. It appears at the first fill of the lake and then is eaten out as fish appear, but it has already laid its eggs so these are ready for the next cycle. Of the last group, *Cyclestheria hislopi* lives in permanent wetlands along with water fleas in tropical areas.



Clam shrimp *Caenestheriella packardi* - a widespread species

Brian's colleagues in Germany have noted that its distribution is moving south, a result of climate change.



Last picture and part of an ongoing project, was a collection of electron micrographs of cysts of *Eulimnadia* species, all distinctive and of varying shapes and patterns. The beautiful star-shaped one must be Brian's favourite. Look out for Eureka prizes!

Mount Sonder 12 July 2014

Report by Connie Spencer; Photos by Rosalie Breen , Connie Spencer and Fleur Spencer

Phew! I made it! My knees and toes are still telling me it wasn't a good idea but the rest of the body says it was well worth the effort and effort it was!

Seven of us started our assault on Mtount Sonder at 8am. It soon became apparent that there was quite a degree of variation in our levels of fitness! As leader, I led from behind, both up and down! Four and a half hours later Rosalie and I finally reached the summit to the cheers of the rest of the gang some of whom had been there for at least an hour and a half!



Hooray the Summit!



Top: Acacia macdonnellensis; Bottom Left: A. validinervia; Right: A. adoxa

Although most of my stops were to catch my breath, I did manage to check out some of the flora. By far the most floristic was Hill Mulga (*Acacia macdonnellensis*) with Blue Wattle (*Acacia validinervia*) in second place. Hill Mulga mainly occurs in the southern ranges of the NT and adjacent WA. Blue Wattle, although often straggly or spindly, stands out with its bluey-grey broad leathery leaves and bright yellow dense globular flowerheads. It is widely distributed in desert regions of WA, NT & SA. It also grows in a variety of habitats from rocky to sandy, clay and loam areas. At about the 3 km mark we came across a small, open, spreading Acacia with sparse globular yellow flowerheads. I pulled the name *Acacia adoxa* (meaning disreputable or ignoble – a reference to its small size) out from somewhere but with very little conviction, and I was right. The specimen I photographed was not in

top condition as descriptions of the plant read “dense, spreading rounded shrub.”

The final uphill stage was a hard slog and seemed to take forever. The vegetation changed to eucalypt mallees as we neared the summit. From memory I noted five different species. Although the area had been burnt in the not too distant past, the mallees were regenerating well from their lignotubers.



There were also some rare gems on this section of the trail. The eye-catching Mountain Hakea (*Hakea grammatophylla*) with its bright pink flowers caught the attention of most of us. Mountain Hakea is endemic to the NT, restricted to the central ranges and is on the near threatened list of plants of the NT.



Hakea grammatophylla

Prostanthera schultzi (formerly *Wrixonia schultzi*) was seen sheltering under rocky ledges facing south. It wasn't in flower but its green leaves are quite distinctive – described by one source as ping-pong paddle shaped. Once again endemic to the NT and confined to the MacDonnell Ranges Bioregion where it is restricted to the high altitude tops of the Chewings Range and Mount Sonder. Its conservation status is listed as vulnerable.



Leucopogon sonderensis

And last but not least is Mount Sonder Beard-heath (*Leucopogon sonderensis*) found growing prolifically on the summit. It is a small, dense, spreading shrub to about 60 cm high with elliptic-shaped dark green leaves tapering to a fine point. They are tightly arranged almost overlapping along stems. Mount Sonder Beard-heath is also endemic to the Northern Territory and on the near threatened list of plants of the NT.

Having reached the summit, the views of the ranges and plains were awesome but what goes up must come down and so we did. My legs felt like jelly and the knees are definitely not what they use to be. A big thank you to Bob Read for staying with the rear guard and seeing that we made it down safely. It was probably his slowest decent ever!

Mount Sonder from Rosalie

Sonder is one of my special mountains. This was my sixth visit - strange how I keep taking longer each time to reach the top. But the effort of almost continuous climb is well worth it, to see the special plants (read Connie's article) on the way and marvel at the different mallees, at the rugged cliffs on each side and the views, bigger and wider as you climb. Then at the summit, Ormiston Pound is revealed to the East. All the big mountains are there. To see Mount Giles emerging from Ormiston, the red rounded long caterpillar of Parcoota Range, Gosses Bluff, Haasts Bluff, Mount Razorback, Mount Ziel, and with a bit of imagination Lake Lewis, Mount Chapel and Mount Hay, is a real geography lesson, especially as on the recent trip to Newhaven we saw the last three mountains from the north side.

To get an early start in the morning we had a night at woodland camp ground, with a fire in the fire pit and lighted by the full moon. Though it was cold, we were all snug and ready for the day ahead. Thanks Connie.

“Show and Tell” Members’ night.

Rhondda Tomlinson brought a series of photos – photos of Flinders Ranges and books of two other trips she has done recently. It was good to see photos of Liz Carpenter, who was a very keen Field Naturalist while in Alice, as well as some beautiful scenic shots.

Rosalie Breen brought three items:-

First, a bunch of beautifully Pink Everlastings, *Schoenia cassinioides*

Second, a pot of swimming, wriggling pond life that she had found in a borrow pit up the North Stuart Highway. It was quite an identification exercise but she had a list to help us.

Third, a new look at a photo competition that was put together for an Eco-fair a few years ago, asking people to distinguish between two similar flowers, plants, tree frogs, snails, wasps, ferns and more. The names were supplied but it was designed to create some discussion about which was which. It was good seeing and discussing some old photos.

Cecily Sutton also brought flowers – a bunch of beautiful wild blooms that are flowering so profusely around central Australia at the moment. The rains fell just at the right time this year to get them all looking wonderful. She also sneaked in a couple of yellow roses that she tried to persuade us, unsuccessfully, were Desert Roses.



Schoenia cassinioides



[Duck Swamp on Henbury Station as seen on Google Earth.](#)
- the picture that started all the trips.

Barb Gilfedder did a trial run of a fifteen minute talk and power-point presentation that she has put together about our visits to Henbury Station while it was owned by RM Williams Agricultural Holdings. She wanted feedback on the words and pictures before she presents it at the Australian Naturalists Network get-together in Tasmania in October. It is not always easy to get access to private land, but here we were welcomed. She showed photos of some of the waterholes, plants, birds, wild flowers and stromatolites that we

- found on these trips as well as photos from a fish survey that we

helped with. She finished with the wish that we will be allowed access again with the new ownership that has returned the station to a pastoral property. Several members provided useful feedback.

Pam Keil brought some ‘Little Red Bird Books’ that the new local BirdLife branch has put together. It is a list of all the birds found in the southern half of the Northern Territory, with space to write up birding trips and tick off which birds were seen. They are for sale at \$5 each or five for \$20. She also advertised the next BirdLife meeting which will be on August 27 at the Alice Springs Desert Park Education Room at 7.00pm. She will be talking at that meeting, about photographing native wildlife, particularly birds.

ALICE SPRINGS FIELD NATURALISTS CLUB INCORPORATED

Minutes of general meeting at Higher Education Building,

Charles Darwin University 13 August 2014

Following ASFNC 2014 AGM

Present: 15 Members, 1 visitor and 6 apologies as per attendance book.

Previous minutes – accepted.

Business arising from the minutes:

- Cecily has purchased hard drive to back up club records as agreed. \$129.

Correspondence in

- Astronomy Night at ASDP Saturday 16 August
- Public Library Talk “Whose Footprint” in Arrente and English and as eBook.
- Meg Mooney requesting photos for making “Big Book on Climate Change”.
- Tax receipt for \$100 donation from Australian Natural History Medallion.
- Karlee Foster (Grounds Manager of OPBG) re planning of the gardens. Feedback requested on plant census plan and volunteers needed to implement it. Barb Gilfedder will forward email to members.
- Several members expressed interest.

Correspondence out:

- Thank you card to Peter Latz

Treasurer’s Report:

- Not available as Treasurer away.

General business:

- Electric jug purchased for speed of tea/coffee making.
- Little Red Bird Book available for sale for \$5 from Pam Keil (Birdlife Central Australia).
- Pam also reminded Members of the Birdlife meeting at AS Desert park Education room on Wed 27 August. She will be talking about wildlife photography particularly bird photography.

Past Activities/Trips discussed:

- 7 people climbed Mt Sonder on the ASFNC trip. It was a significant achievement for some.
- End of Year Celebration and Sand Country walk at ASDP was enjoyable.
- Horseshoe Bend Trip had beautiful campsites and interesting historical information as well as fantastic flowers.
- EcoFair had a pleasant atmosphere, and highlighted our activities. 4 new members joined. See photo of display below.

Future activities:

- Sat 16 August. Short walk along the top of the range behind the Archery Club. Flatter version available.
- Sun 17 August. Planning Meeting.
- Sun 7 September. Threatened Species Event for Biodiversity Matters by ALEC. Barb Gilfedder will lead walk at Sewage Pond.
- **APS Event.** Walk in Geoff Kenna’s native garden postponed until 21 September.

Sightings: not discussed

Next meeting: 10 September

Speaker: Michelle Rodrigo on the Lake Eyre Basin

Scribes: Rosalie Breen

Supper: Rhondda Tomlinson

Meeting closed 7.46 pm



