



SEGments



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SEGments Editors

Helen Johnson
Alun Thomas

SEG Website

Michelle Trethewey
Garry Trethewey

SEG Administrative Officer

Alun Thomas Email: alunulna@gmail.com

SEG Treasurer: Graeme Oats

Email: gdoats@bigpond.net.au

Cover photograph: Larva of Banksia
Moth *Psolidostetha banksiae* seen at
Witchelina. Photograph Bob Sharrad

Back cover photographs: Scenes in the northern
part of Witchelina. Photographs Bob Sharrad

The Scientific Expedition Group is a not-for profit organisation which began in 1984. SEG undertakes several expeditions each year to record scientific information on wildlife and the environment in many parts of South Australia.

A major expedition to conduct a biodiversity survey occurs each year over two weeks. Scientific experts lead volunteers in surveying mammals, reptiles, invertebrates, vegetation, birds and physical geography. The data collected on each survey are archived with the relevant State scientific institutions to ensure they are available to anyone interested **in our State's environment.**

In addition to the major expedition, a number of trips for the Vulkathunha-Gammon Ranges Scientific Project are organised annually. A long term study of rainfall on the ranges and of water flow in arid-zone creeks is undertaken. All data are supplied to the Department of Environment Water and Natural Resources and to the Bureau of Meteorology and are available for analysis.

SEG conducts four-day biodiversity surveys at eight different sites each autumn and spring in the Heritage Area **of scrub on "Minnawarra" farm near Myponga. Data** collected are entered into the Biological Data Base of SA. SEG also conducts annual mallee-fowl monitoring over a weekend in the Murraylands.

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Contacts:

SEG Secretary: Sarah Telfer
PO. Box 501, Unley SA 5061
Email: sarahtelfer@internode.on.net

SEG email: scientificexpeditiongroup@gmail.com

SEG website [Http://www.communitywebs.org/ScientificExpeditionGroup](http://www.communitywebs.org/ScientificExpeditionGroup)



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CONTENTS

Guest Editorial

Andrew Barr Page 1

Data Management and YOU—**Someone's** Gotta Do It

Helen Owens Page 2

Visiting the Home of the Mountain Gorilla

Alun Thomas Page 6

The Witchelina Biological Survey: Phase 1

Bob Sharrad Page 8

Minnawarra Biodiversity Project. Spring Survey 2015

Janet Furler Page 13

Hiltaba Mystery Solved

John Love Page 15

Member Survey on the Witchelina Expedition

Alun Thomas Page 16

GUEST EDITORIAL

Helping the Planet one SEG expedition at a time.

Many environmental biomes of South Australia are fragile because of climate change and human interference. There is a complex interaction between economic, social, and political pressures for maintaining the biodiversity in these biomes.

Darwin's theory states that a species evolves within its ever changing ecological conditions through the survival of the fittest and that in any population of plants or animals, the greater the diversity, the greater is the chance of surviving. Therefore environmental biodiversity is a key to successful evolution.

The evidence for biodiversity needs to be measured over a long time period. For 32 years SEG has been contributing data to the biological databases for South Australia.

SEG has carried out yearly expeditions to record the flora and fauna data for the South Australian database. Members of SEG mentor and support University students with field work opportunities. We inform the public by publishing our results and programs in a **quarterly journal and on SEG's website. We liaise with organisations** such as DEWNR and Nature Foundation SA. We secure grants from governments for our activities. For over 27 years the Vulkathunha-Gammon Ranges Scientific Project has been contributing rainfall data to the Bureau of Meteorology to increase understanding of local rainfall patterns. All of this scientific effort is undertaken by not-for-profit volunteers.

Can this activity translate into positive action to address environmental problems? The answer is yes, but in my opinion SEG can do more.

These things may be:

1. Since the average age of the core SEG members is sixty plus, there is a strong need to encourage a generational change. By lobbying the three universities a core of students could be available to join SEG on survey work, thus providing opportunities and valuable experience for students, who may remain in the SEG community, or join at some time in the future.
2. SEG should also apply for more funding from government and philanthropic organisations so that students can be supported in their field work efforts.
3. SEG should work closely with environmental organisations such as Nature Foundation and SEG should strongly lobby government and the media to raise the environment as a most important issue. This could include the school system having environment biodiversity as a priority in their science curriculum.

Finally we the citizens of earth must take a more active role in protecting this planet on which we live, as we are over populating and over-consuming the biological resources to our detriment.

Andrew Barr

barrandrew73@gmail.com

DATA MANAGEMENT AND *YOU* – **SOMEONE’S GOTTA DO IT!!**

Helen Owens

I was lucky enough to be immersed straight from uni into the ‘heydays’ of the DEWNR Biological Survey program. I travelled to all corners of the state and camped out with some *amazing* scientists, both professional and hobbyist, who taught me the ins and outs of field survey. I *loved* every second of it all and am still in *awe* of the places and creatures we can unearth around South Australia. Like many, I began work life as a volunteer. As well as field work I did my fair share of data entry. These *volunteer* experiences were *invaluable*, and along with short contracts at the Museum, Nature Conservation Society of South Australia and BHP, have helped guide me through 24 years of DEWNR life (or should I say NPWS/DELM/DEP/DEHAA/DENR/DEWNR)!!!!



Part of the Witchelina Team in 2015. Helen in the foreground

No naturalist will argue that field work isn’t *fun*, however very few will argue, despite my efforts, that data management is fun! The *buzz* we get from finding a new species, chasing down a dragon lizard, or spotlighting a hopping mouse, has to be experienced to be believed. It makes the aches and pains of the pit fall digging, flies, heat and *catastrophic* hair situation quickly disappear from our memory. Amongst the enjoyment of these discoveries and the information we are gathering for ‘the good of the species’, **we are constantly aware of the impact we are causing as we dig holes, turn logs, dodge roadkills and collect specimens.**

This disturbance can only be justified if there are some *benefits* gained to our understanding of the species and its environment that lead to better conservation management. When the information we gather is managed in the right way it has the potential to provide *value* beyond the initial study. It

can help inform future research direction and in some cases prevent the need for additional field work which saves time, money and unnecessary environmental impact.

Unlike many, I have always found the data management side of things *compelling*. I like to be able to put some order into the *chaos* and see the value gained when information is discoverable, *accessible* and applied to a variety of uses. When children came into my life 15 years ago I found myself doing a bit less field work and instead heading down the data management path. It was a great time to be involved, with the widespread adoption of the internet, databases, spreadsheets and mapping tools. All areas of data management benefited greatly from these resources including field work, data entry, validation, data access and *mapping* and analyses. I am still amazed every day, if not a little *overwhelmed*, by the ongoing advancements in these areas.

Our State is in the fortunate position of having many great community groups and iconic science leaders from government and NGOs that are able to work in *unison* to **enrich the understanding of the State’s biodiversity.** SEG, along with many other volunteer organisations in SA, has helped fill many *gaps in our State’s knowledge*. **It is often** difficult for smaller non-profit organisations to maintain long-term data storage environments that meet the key requirements of *security*, ongoing *validation*, and *accessibility*. DEWNR has traditionally aimed at filling this role and as the states data authority for biological data they now coordinate access to environmental information for South Australia.

The Biological Databases of South Australia (BDBSA) has been managed by DEWNR for around 30 years. It holds over 2 million records of plants and animals from over 1000 projects. This extensive dataset is available within government and to external users via several options including global data summary tools such as the Atlas of Living Australia (more about that later). There are currently 11 projects registered on the BDBSA that have been coordinated by SEG (see table below). There are several others coordinated by DEWNR or other organisations where SEG has provided valuable field assistance and logistical support. The SEG website documents involvement in 25+ expeditions over 30 years indicating the success and *significance* of the group.

The Table below shows the projects registered for SEG on BDBSA

Project Name	BDBSA Project Number
Southern Fleurieu (Scientific Expedition Group)	97
Dalhousie Survey (Scientific Expedition Group)	161
Boolcoommatta Australian Bush Heritage Fund Nature Reserve (SEG)	559
Gawler Ranges NP (Scientific Expedition Group)	587
Arkaroola Sanctuary Survey (Scientific Expedition Group)	638
Coongie Lakes flora and fauna survey (Scientific Expedition Group)	443
Minnawarra (SEG) MLR Long Term Biodiversity Survey	661
Gammon Ranges Scientific Project (GRaSP) –SEG	819
Balcanoona Survey (Scientific Expedition Group)	931
Witchelina Biological Survey - Nature Foundation SA and Scientific Expedition Group	1028
Malleefowl Grid Monitoring - Grid 8 (Shorts)	485

The map below shows the sites for SEG related data captured so far on the DEWNR database. It includes over 9000 records.



Of course the number of records can sound *impressive* but anyone who has been involved in one of these expeditions also appreciates the enormous logistical effort that goes on behind the scenes - maintaining the group and equipment, permits and ethics approvals (not for the faint- hearted!!) , food, camping and travel itineraries, trip coordination, data

collection, specimen preparation and most importantly data management. Another *invaluable* contribution that is hard to measure in numbers is the *education* and *experiences* gained by all participants.



Witchelina 2015. Heidi Niejalke casually holding a sleepy lizard whilst waiting for her turn for show and identify

In addition to the data returned to DEWNR as part of scientific permit requirements, many organisations choose to use DEWNR systems as their main data storage environment and voluntarily contribute the information to state databases to ensure it is used.

DEWNR has several processes in place to coordinate management of all the *diverse* data sets on the BDBSA. These procedures and associated templates are outlined on the DEWNR website (for the true diehards) but the main steps are outlined below:

- Submit a project description (metadata) and receive a BDBSA project number (user);
- Lodge datasets using DEWNR formats in preparation for entry onto BDBSA (user);
- Enter/Load Data into BDBSA. There can be time lags depending on available resources (DEWNR);
- Ongoing data validation and taxonomic updates (DEWNR);
- Make data discoverable and accessible in appropriate formats (DEWNR).

Although all data management steps are important, by far the most exciting one is data discovery. Systems such as the Atlas of Living Australia (ALA) have opened up a whole new world of data access and *manipulation* that is available to all.

DEWNR have an 'Introduction to ALA for SA users' that is a good starting point if you want an overview of what ALA can do and some basic instructions.

If you do nothing else '*do yourself a favour*' and copy this string into your internet address line:

<http://spatial.ala.org.au/webportal/?ss=96C75A8785A4F03338E36E23EF6CA476>

If it's behaving itself you will be taken to the ALA mapping environment and the ALA data will appear as red dots on the SA map. You can zoom in and clicking on these dots will give you additional information about the records. There's a whole world of *interrogation* and analysis you can play with if you are keen – be warned, it's *addictive*!!!

I have pre-filtered the map in this link to include SEG data only, however the Atlas currently contains over 2000 datasets. There are some concerns that such tools can lead to misinterpretation of data and may include unvalidated citizen science records. These concerns can be overcome by user education on how to filter the data to show the datasets and records that are '*fit for purpose*' to answer your question. As a minimum, these tools are a great way of *inspiring* the public, *encouraging* feedback on dubious records and a starting point for *discovery*.

Of course if you start looking around in any data base you will find some errors. By all means look hard and when you find one in ALA click the

Flag an issue

tab to report them. These are fed back to data custodians for correction and help improve accuracy for the next user.

If I have sparked your interest another aspect of ALA worth trying is their DIGIVOL - Volunteer Portal. This is a tool that puts people in touch with projects that need help. If you have spare time and a computer, you can register with one of the many projects and help extract data from the scanned images. These may include old journals, datasheets or a tray of preserved invertebrates. Got some spare time? Try <http://volunteer.ala.org.au>

Well I appreciate nothing will ever replace the rush of chasing down a dragon lizard but hopefully some of you have read until the end and are inspired to look deeper into the *invigorating* world of data management and *discovery*. I have provided a few more links below for you to explore.

Enjoy!!!!

owensniejalke@inet.net.au

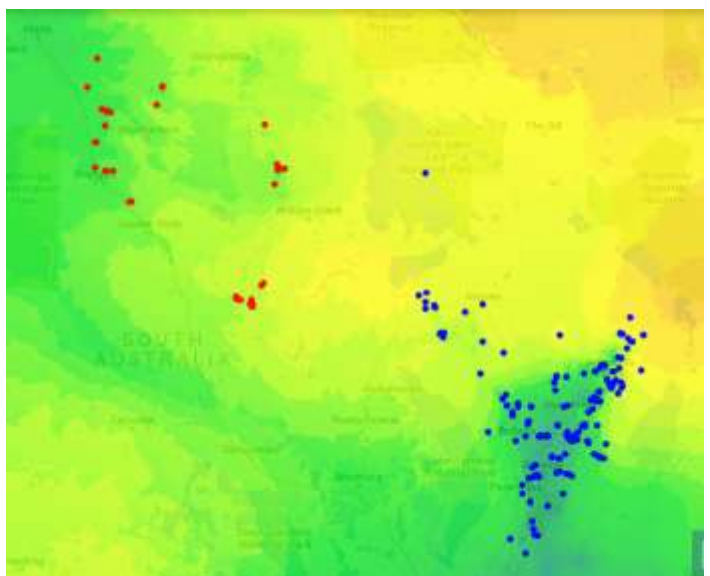
ALA Mapping Tool

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

The map below shows the occurrence records of two of our arid rock dragons, *Ctenophorus tjantjalka* (Ochre Dragon) in red and *Ctenophorus vadrappa* (Red-barred Dragon) in the blue. The Red-barred Dragon was found around the rocky ridges of Witchelina. The aridity index layer from ALA has been added to show how occurrence and relationships to other species and environmental variables can be investigated.

Click on the link to see an interactive view of the map below:

<http://spatial.ala.org.au/webportal/?ss=3CFB592F16D51F69E49EFA519D7EB33>





Naturemaps

<http://spatialwebapps.environment.sa.gov.au/naturemaps/?locale=en-us&viewer=naturemap>

Naturemaps is DEWNR's mapping tool with some great SA specific layers such as detailed vegetation mapping shown above. Comprehensive species data from BDBSA will be available early 2016!! ALA and Naturemaps overlap in some features but each tool has its strengths and weaknesses that users may prefer.

BDBSA Project list

<http://apps.environment.sa.gov.au/emap/envmaps-query.do?cmd=su.SurveySummaryMain>

Use the 'find on this page' option (under the internet edit menu) to search for keywords in project titles. Select a project to open up the project description and associated metadata.



Find: SEG Previous Next Options 13 matches	
558	FRIENDS OF GVD AREA ECOLOGICAL MONITORING
559	BOOLCOOMATTA (SEG)
560	ORCHID MONITORING (HOUSTON)
561	MALLEEFOWL MONITORING - GRID 66
562	NORTHERN MURRAY MALLEE LANDSCAPE TRIAL
563	BIRDS SA - FLEURIEU BIRDWATCH
564	BIRDS SA - PERSONAL BIRD RECORDS
565	BIRDS SA - THREATENED BIRD RECORDS - SOUTH EAST
567	MALLEEFOWL MONITORING - GRID 67
568	MALLEEFOWL MONITORING - GRID 68
569	BIMBOWRIE RANGELANDS MONITORING
570	INNAMINCKA RR RANGELANDS MONITORING
571	INNAMINCKA RR BORROW-PIT ASSESSMENT
572	YUDNAPINNA AND LAKES
573	WOOMERA PROHIBITED AREA
574	MALLEEFOWL MONITORING - GRID 69
575	YALATA BIOLOGICAL SURVEY (AW NRM)
576	POINT DAVENPORT CP
577	OBAN - CURNAMONA ENERGY
578	TRIPITAKA - ILUKA RESOURCES
579	BLACK-CHINNED HONEYEATER RECORDS
580	SPOTTED QUAIL-THRUSH RECORDS
581	SAQA 2ND BIRD ATLAS ADELAIDE REGION
582	KI THREATENED PLANT PROJECT
583	SAMDB THREATENED FLORA DATABASE
584	KAT-FISH REACH (TREE HEALTH)

VISITING THE HOME OF THE MOUNTAIN GORILLA

Alun Thomas

Kathleen and I had the chance to visit the mountain gorillas of Rwanda late last year.

Rwanda is a small land locked country in the middle of Africa which was rocked by inter-tribal violence on a huge scale only about 20 years ago. With strong leadership the country has recovered and is now a safe and clean country to visit. The capital is Kigali and is in approximately the centre of the country. The main tourist areas are national parks in the north and south of the country. Nyungwe Forest National Park in the south has 13 species of primates including colobus monkeys. In the north is Volcanoes National Park which borders the Congo and Uganda. The Volcanoes National Park is mountainous and has five volcanoes, either dormant or extinct.



Fields and Mountains of Volcanos National Park

The Volcanoes National Park was set up in 1925 to provide protection for mountain gorillas and while it has been subject to poaching and deforestation in parts it is now stable and a major tourist attraction. There are about eighteen mountain gorilla groups in the national park, ten of which are habituated and open to visits by tourists. A maximum of eight tourists can visit a gorilla group for one hour per day. The visits are very well organized and controlled.

Kathleen and I were part of a group from South Australia. We stayed at a lodge called Mountain Gorilla View Lodge near Rhuengeri. We had an early start on the appointed day, breakfast at 6 am and on the road by 6.30 to the Volcanoes National Park Headquarters near Kingi where we were put into teams to climb up to the various gorilla family groups. We also hired wellington boots because the path was said to be muddy. Kathleen and I were put in a group with two others from our travelling party as well as three other Australians from a photographic club in Canberra to visit a family called the Sabyino group. Our guides were Francois and Augustine. They briefed us on do's and don'ts and then we were driven to the start of our walk. At the beginning of the walk we were able to hire porters to carry our packs and to give assistance on slippery slopes. We both hired porters even though our day packs were by no means heavy and it was a fine morning. The photographic club members had enormous packs with many



Gohonda

cameras and lenses and their porters really had to work. The porters, we were told, were poachers who had been caught, and so the portage was a way of them earning honest money.



Sitting on Dad

The Sabyino gorilla family has a dominant silverback Gohonda, his son (another silverback), females, adolescent sons and daughters and infants for a total of 16 in group. The dominant silverback is 35 years old and apparently due to his age he has handed over two of his six wives to his son, the second silverback in the group.



Infant and Silverback playing



Mother and Infant

We walked for nearly half an hour up through village fields and plantations and then into the park and steeply up through rain forest and bamboo groves . The path was muddy but not

close to them that we nearly had to step back to get a full animal in a photo. We spent an hour and a quarter with them and observed them playing, feeding, suckling, grooming each other and just lying around. The silverbacks were very patient with the infants climbing over them and dropping onto them



Upside Down

difficult to walk and our guides were mainly concerned that we may have been in danger from buffalos. We saw droppings but no buffalo. The park has teams of scouts who follow the gorilla families so our guides knew where to go to take us to our appointed family. It took us another hour of climbing to get to the scouts who were near to the gorilla family. We then left most of our gear and just with cameras walked a short distance to the gorilla family.

One moment we were pushing through bush and vines and suddenly we were amongst the group of gorillas. We got so



Concentration

from bushes. Several times we saw the silverbacks stand on their hind legs, beat their chests and charge through the bush sometimes brushing past us in a show of dominance. We did not challenge them.

Our tour leader had told us to stop taking photographs (I took nearly one hundred while we were with the gorillas) and just observe them. It was good advice as the interplay between the silverbacks, the males and females and the infants was fascinating.

It was magical seeing such magnificent animals at such close quarters and so at peace with themselves and their surroundings.

Visiting the mountain gorillas is not a cheap exercise. The cost is \$US 750 for one day and then there is the cost of accommodation and transport, but I think that it is truly one of the great wild animal experiences in the world.



THE WITCHELINA BIOLOGICAL SURVEY: PHASE 1

20 September – 3 October 2015

Bob Sharrad



The former pastoral property Witchelina is huge. At 421,000ha it is nearly as large as Kangaroo Island (440,500ha) and nearly five times the size of Flinders Ranges National Park. It contains a great range of habitats: rugged, rocky Flinders Ranges-like hills and gorges; open gibber plains; red dunes; ephemeral wetlands; and, about 40kms of the shore of Lake Torrens. When Nature Foundation bought and destocked the property in 2010 they were faced with the huge task of finding out which plants and animals lived there and how to help restore endangered species and communities. A good start has been made by various groups and individuals including: EBS Ecology, Birds SA, SA Field Naturalists, Bush Blitz, Flinders University researchers, and NFSA staff and managers.

Despite the effort made to study the biodiversity of Witchelina much remained to be done (it is very difficult to cover such a huge and varied area) and some study sites need to be revisited. NFSA staff approached SEG to continue the survey work over a three year period – a third of the property at a time. Thus after many meetings, signing of a contract and

an earlier reconnaissance trip, we arrived at our base camp, Pug Hut, in the south of the property late in the afternoon of 20th September. After unpacking, setting up a kitchen, food store and science room we retired to our tents that were scattered about among the low shrubs which dominate the area. During the night and on the next night our tents were severely tested by strong winds and unfortunately some were not up to the task. I was most impressed by the way the hardy expeditioners took this in their stride by patching up tents or finding sleeping space in a vehicle or trailer.

Over the next two weeks we re-established sites set up by EBS Ecology and set up new ones – of particular interest was a site on the shore of Lake Torrens made available by a track newly **graded by the Nature Foundation's managers**. At each 100m by 100m site two lines of pitfall traps (12 in all), 12 funnel traps, two cage traps, 12 micropitfalls for invertebrates and 15 Elliott traps were set out. The habitat was described and the birds and vegetation studied. In all, 14 such sites were set up and studied.

What did we find?

- 400 plant species recorded and 261 vouchers taken.
- 252 bird records were made at the 14 sites (many others were seen off site).
- 11 mammal species were identified (Table 1).
- –59 mammal and reptile specimens were taken for South Australian Museum.
- 6027 invertebrates were collected in micropits and identified and will be lodged with the South Australian Museum (Table 2).
- 32 reptile species were recorded at the sites, 421 individuals (Table 3) .
- Habitat information recorded for each site.

The herpetologists on the survey were all keen to see the little Lake Eyre Dragon (*Ctenophorus maculosus*), and most volunteers on survey also saw them. The dragon is pretty special. It is only found in South Australia on the larger salt lakes (Eyre, Callabonna and Torrens). It eats ants while foraging on the salty surface near the shores of the lakes. When the lakes flood the lizards are forced to live on the shore and it is said that they change colour to match the new environment! Overall there were probably 6 or so seen at the lake edge near the study site (called opportunistic sightings). Actually they are quite easy to catch when you see them but difficult to spot initially.

The “scientists” worked hard to identify the plants and animals we found. They spent evenings filling in data sheets, arguing about identifications, pressing plants and dealing with specimens for the Museum. While they did this others would be dealing with meals, cleaning, organising the **next day’s work and so on**. Everyone had a part to play and did their jobs cheerfully and well.

We were very pleased to have the President Richard Willing visit for a few days. He was able to see the teams in action each day, heading off on their various tasks. Of **course it wasn’t all work: we had a** day of recreation mid-way through where some of us climbed the hill (mountain?) that dominated the

western horizon from Pug Hut, Termination Hill. On the last night of the camp we descended on Lyndhurst to shower and dine (some hadn’t had a shower for two weeks!).

Well done everyone. Let’s do it again in September.



Red-barred Dragon—opportunistic sighting



Emu and Dingo Tracks on Lake Torrens

Table 1 Mammals recorded at sites (preliminary collation)

Scientific Name	Common Name	Number observed
<i>Bos taurus</i>	Cattle	8
<i>Equus (Equus) caballus</i>	Horse	1
<i>Macropus rufus</i>	Red Kangaroo	8
<i>Macropus sp.</i>	Kangaroo sp	13
<i>Mus musculus</i>	House Mouse	7
<i>Oryctolagus cuniculus</i>	Rabbit	18
<i>Planigale tenuirostris</i>	Narrow-nosed Planigale	2
<i>Pseudomys australis</i>	Plains Mouse	2
<i>Sminthopsis crassicaudata</i>	Ft-tailed Dunnart	14
<i>Sminthopsis macroura</i>	Stripe-faced Dunnart	3
<i>Vulpes vulpes</i>	Fox	4
Grand Total		80



Installing pitfall lines, funnel traps and micropitfalls in dune country

Table 2 Invertebrates

Total no. <i>Formicidae</i> (ants)		3416
Genera (major groups)	(% of <i>Formicidae</i>)	
<i>Iridomyrmex</i>	59.95%	
<i>Monomorium</i>	17.04%	
<i>Melophorus</i>	10.01%	
<i>Pheidole</i>	5.74%	
<i>Rhytidoponera</i>	3.49%	
Collembola (Springtails)		1903
Other invertebrates		708
Common name (major groups)	(% of other invertebrates)	
Bug	24.15%	
Mite	19.92%	
Fly	16.81%	
Spider	14.41%	
Wasp	7.34%	
Total Number of Specimens in micropits		6027



Helen Johnson re-installing
oversize pitfalls in the dune
country of Witchelina

Table 3 Reptiles recorded at sites (preliminary collation)

Scientific Name	Common Name	Number observed
<i>Ctenophorus fordii</i>	Mallee Dragon	60
<i>Ctenophorus nuchalis</i>	Central Netted Dragon	5
<i>Ctenophorus pictus</i>	Painted Dragon	23
<i>Ctenotus leae</i>	Centralian Coppertail	4
<i>Ctenotus regius</i>	Eastern Desert Ctenotus	89
<i>Ctenotus schomburgkii</i>	Sandplain Ctenotus	3
<i>Ctenotus sp.</i>	Ctenotus sp	2
<i>Ctenotus strauchii</i>	Short-legged Ctenotus	6
<i>Ctenotus taeniatus</i>	Eyrean Ctenotus	75
<i>Diplodactylus tessellatus</i>	Tessellated Gecko	1
<i>Diporiphora winneckei</i>	Canegrass Dragon	4
<i>Gehyra purpurescens</i>	Purple Dtella	4
<i>Gehyra variegata</i>	Tree Dtella	13
<i>Heteronotia binoei</i>	Bynoe's Gecko	1
<i>Lerista aericeps</i>	Yellow-tailed Slider	1
<i>Lerista labialis</i>	Eastern Two-toed Slider	2
<i>Lialis burtonis</i>	Burton's Legless Lizard	2
<i>Lucasium byrnei</i>	Pink-blotched Gecko	4
<i>Lucasium damaeum</i>	Beaded Gecko	13
<i>Lucasium stenodactylum</i>	Sandplain Gecko	10
<i>Menetia greyii</i>	Dwarf Skink	37
<i>Nephrurus levis</i>	Pale Knob-tailed Gecko	3
<i>Pogona vitticeps</i>	Central Bearded Dragon	16
<i>Pseudechis australis</i>	Mulga Snake	1
<i>Pseudonaja aspidorhyncha</i>	Patch-nosed Brown Snake	3
<i>Pseudonaja mengdeni</i>	Gwardar	14
<i>Pseudonaja modesta</i>	Five-ringed Snake	7
<i>Pygopus lepidopodus</i>	Common Scaly-foot	1
<i>Rhynchoedura ornata</i>	Beaked Gecko	4
<i>Tiliqua rugosa</i>	Sleepy Lizard	8
<i>Tympanocryptis intima</i>	Smooth-snouted Earless Dragon	4
<i>Tympanocryptis tetraporophora</i>	Eyrean Earless Dragon	1
Grand Total		421

MINNAWARRA BIODIVERSITY PROJECT. SPRING SURVEY 2015

Janet Furler

For our spring survey (30th September to 4th October 2015) the weather was dry throughout, with daily maxima rising **from 16° on day 1 to 27° on day 4. A change then brought a small amount of cloud and a maximum on day 5 of 25°. Very pleasant all round!**

Twenty six people put in 370 hours over the 5 days, with more time spent preparing and cleaning up. In addition was the work for 57 evening meals and associated breckies and lunches.

The excitement of the survey was in gaining real hands-on evidence of southern brown bandicoots (*Isoodon obesulus*) in our scrub. We have suspected that they are there. Others have said they should be. They are confirmed in both Conservation Parks on our boundaries. But until now, nothing more than anecdote. So, one morning, there was a bandicoot in a cage trap at site 1. It was carefully taken to the house to show others and to be weighed and chipped. Lo and behold! It was a she, with 2 pouch young! Evidence of breeding was extra exciting. She (they?) was released and the afternoon round started – with a ¼ size bandicoot in an Elliott trap! She **was also a “she”, and probably still with mum as they have overlapping litters.** This is all very strong evidence of a breeding colony. As site 1 is at the head of the creek on the house side of the road, the animals have a lot of room to expand down the creekline and potentially turn up at sites 3 or 4. After the survey we set the wildlife cameras at that spot **and got a photo of a bandicoot which hadn't read the rule** about being nocturnal, as it was 11.30 am!

Site 1 was back to being the busiest of the nine sites, with 21 mammals captured, only 4 of which were recaptures from previous surveys. The Swamp rats (*Rattus lutreolus*) were (unusually) the most populous species with 9 individuals. Also

captured were 6 Bush rats (*Rattus fuscipes*), only 4 *Antechinus flavipes* and the two Bandicoots. Sites 2 – 8 had 10 or 13 individuals each, with one or other of the *Rattus* species dominating, and *Antechinus* numbers down. Site 9, with 6 individuals, was the least populated, but had the most *Antechinus* (5) of all the sites.

In all we caught 97 mammals, including 43 recaptures and, with repeat customers, emptied 212 traps. The thrush who likes the cage trap made a single appearance this year; maybe **the bait wasn't up to scratch.**

Our catch of 22 *Antechinus* was low compared to the autumn number of 81, **but mirrored last year's spring numbers.** The spring catch is breeding females only, with all the males worn out. It is a good indication of the size of the change in the population. The *Rattus* species are much more consistent, with Bushrats ranging from 40 to 50 and Swamp rats from 23 to 30 over the last 4 surveys (spring and autumn).

Due to a bit of moisture and warmth we found 22 cold-blooded beasts: 6 Common Froglets (*Crinia signifera*), 14 Garden Skinks (*Lampropholis guichenoti*) aka Lamborghini – very quick, and 1 Three-Toed Earless Skink (*Hemiergis decresiensis*). It is always interesting to point out the difference between the surface dwelling, strong legged *Lampropholis* and the burrowing, tiny legged *Hemiergis*.

All pits are now renewed, with PVC pipe instead of buckets. Thanks to Andreas, Alex and Sam for providing the muscle power for the posthole digger. And no-one was flung under a bush this time by a runaway machine. My hope that the longer narrower pits would catch more has not been realized. We had 3 surveys with both types of pits and no evidence of more mammal catches in the new ones, or more overall. Ah well, at least they are replaced and have secure lids.



Southern Brown bandicoot (*Isoodon obesulus*) in a cage trap at Site 1





Bandicoot photographed with wildlife camera at Site 1

MINNAWARRA BIODIVERSITY SURVEY DATES 2016

Autumn Wednesday 20 April to Sunday 24 April 2016

Spring Wednesday 28 September to Sunday 2 October 2016

Come for half a day, one day or several days.

Minnawarra is situated on the southern Fleurieu Peninsula

For further information and registration forms, contact Janet Furler on 0419 842 667

WITCHELINA 2016

The Witchelina Survey Part 2 is intended to concentrate on the North West portion of Witchelina Station.

The area will be reconnoitered during the first week in April and the survey is intended to take place from 11th until 23rd September 2016. Further details will be promulgated as soon as possible.

HILTABA MYSTERY SOLVED

John Love

Readers might recall seeing this photo with a question 'Was it a water cooler or what?' (SEGments Vol. 31 No. 1, June 2015 "Hiltaba Mystery" John Love)

The answer has been supplied by Mr Donald A. Nicholson OAM of Linden Park. It is in fact a water cooler for an internal combustion engine. Don has supplied an illustrated advertisement showing a 1907 model Columbus oil engine, made by Columbus Machine & Tool Company, USA. The cylinder (horizontal) is on the left, flanked by two fly wheels, one of which partly conceals the cooling tower. The cooler consisted of four perforated steel pans, each about 30 cm in diameter and 5 cm deep. Water was cooled by trickling down through the pans. The cooled water was then conveyed to the water jacket around the cylinder where it heated up. The hot water went through a pipe straight up from the cylinder, then between the fly wheels and straight down to the top pan. (This evaporative system must have used quite a lot of water.) These engines, which were made in various grades from 6 to 25 horsepower, were designed to operate continuously at maximum load. They were imported from the USA and used to power shearing machines.

The cooler at Hiltaba appears to have been adapted for domestic use. The bottom has been cut out of the fourth pan, one of the steel bars supporting the tower has broken off and the other two bars have been bent back.



Water Cooler (?) 30 cm scale

This seems to be the only remnant of an engine presumably used in the Hiltaba woolshed, an example of early twentieth century mechanisation and later recycling.



Illustration supplied by D. A. Nicholson

MEMBER SURVEY ON THE WITCHELINA SURVEY

Alun Thomas

The SEG committee undertook a survey process to try to evaluate how attendees felt about the expedition and whether improvements could be made on future surveys.

We are very grateful to those attendees who responded. Some valuable responses were received.

Some of the more relevant responses were:

Q3: Would you like to be informed about future expeditions such as Witchelina in 2016?

Generally the response was YES but also that members would like to know dates as soon as possible.

Q4: What are your suggestions for our planning of the 2016 Witchelina expedition?

Clarify site locations and leaders so that we don't end up with several days at the end without much to do.
If I'm out there I'd prefer to be busy!

Q5: What do you think about the science and education programme?

An excellent program to increase people's understanding and appreciation of our natural environment. We should be advertising it more in schools/ uni.

I am never very aware of a structured science and education program. I like the show and tell of an evening. However the Science rooms seem a bit off bounds, as people in there are very busy of an evening.

Great to have experts sharing time and info with participants.

Q7: What food items did you like.

Lots of fresh veggies was great, dinners were excellent.

Avocados! ryvita biscuits, fresh fruit & veg, weet bix, bbq.

Q8: What other food or menu items could you suggest?

Wraps instead of bread for lunch would be amazing.
Boiled eggs and nuts for snacks would be good too.

Not the steamed puddings as there is a lot of wheat served on the trips already.

More barbecues.

Q10: Please give any other comments or suggestions.

I'd like to be involved in more of the post processing of data, after the expedition. Would be good if members can be involved in that. The show and tells, and night walks were excellent, more evening activities like this would be great. I was really impressed by how well the expedition was run, and I had an excellent time! Thank you.

Two points about hygiene:

1. It would be good to have a basin, soap and towel near the kitchen for cooks to wash their hands before preparing food. (The basin near the dunnies was fine.)

2. Arrangements for disposal of rubbish are always more or less make-shift. I was going to add an illustration of bins I saw in the lobby of the Royal Society of SA but the monkey doesn't seem to allow attachments. Some investigation of what is available in Adelaide would be worthwhile.

Had a great time in good company.



Heidi Niejalke assisting with dinner preparation at Witchelina. Trent Porter and Warwick Porter in the background.

SCIENTIFIC EXPEDITION GROUP INC.
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RENEWAL for 2015 —16

Membership is open to any persons, family or organisation interested in the following aims:

- * The promotion and running of expeditions of a scientific, cultural and adventurous nature.
- * The furthering of knowledge, understanding and appreciation of the natural environment.
- * Promotion of the values and philosophy of wilderness.
- * Enabling people to learn the skills required for planning and running expeditions, and to develop sound field techniques

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If you have access to the internet, payment can be made using SEG's bank account at Bank of South Australia, details as follows:

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