



SEGments

Journal of the Scientific Expedition Group Inc.

Volume 40 No. 3 Dec 2024

Scientific Expedition Group Inc.

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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 for Environment and Water 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 mallee fowl monitoring in the Murraylands.

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ISSN 2208-7443

SEGments is the authorised journal publication of the Scientific Expedition Group Inc., 111 Franklin St, Adelaide, SA 5000. It is published four times a year to promote articles about biodiversity, scientific exploration and ecological research.

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Cover Photo: SEG Intern Annabelle Matthias holding a Bearded Dragon near Arkartoola Site 13.
Photo Helen Owens

Rear Cover Photo: Grey Butcherbird.
Photo Bernie Haase



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David Heinjus
Colin Putt
Joc Schmiechen
Jill Tideman
David West
Andrew Wotton.

Also at that meeting were a number who are still involved with SEG. Some of these are Janet Furler and Sarah Telfer.

In the first issue of this Journal David West wrote about the future of SEG:

"South Australia, and Adelaide University in particular are often linked to scientific expeditioning through one name, that of Sir Douglas Mawson. Possibly the ideal scientific expeditioner, Mawson braved incredible risks in order to gain scientific knowledge.

Nearly seventy five years on from his historic 1911-12 Antarctic expedition, we have formed a group concerned with just the things Mawson was concerned with - the quest for scientific knowledge in the field, via expeditions of an adventurous nature.

Finally, the ultimate dream would be that members of the group, whilst on an expedition, could make a major discovery of some form. Who knows - maybe we could capture a live Thylacine."

We haven't found a Thylacine but we haven't given up yet!

Another factor which has been the glue to keep the SEG group together is, in my opinion, Richard Willing. Richard has been a constant. He has what I would term a subtle leadership style. Not demonstrative but a valuable guiding light. Richard has been a valuable mentor to me when I have faced a dilemma. A telephone chat with him has made the correct route to follow clear.

A third factor is our joint concern for the environment. We don't tackle our concerns in the same way but the sum total of our efforts work together well.

Alun Thomas
Editor
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EDITORIAL

There is a major thing to report in this editorial, SEG's 40th Birthday. As Bob Sharrad says in his Chairman's Report "Many organisations don't reach our age."

This made me think what it was that has kept SEG going. In our case I think that the reasons SEG has continued for so long are many but there are several that are dominant.

I can still remember that meeting in 1984 when the formation of SEG was announced. I had been invited to the meeting by Barbara Hardy who was a friend of my family and there on a head table were two men, Warren Bonython and Richard Willing. Warren was elected to be President of SEG and Richard became its first Chairman.

Other committee members were:

Deputy Chair - Rob Easterher

Secretary - Joycelyn Preece

Treasurer - Rosemary Wilde

Committee - Virginia Balmain

Anne Brain

Barbara Hardy

ARKARoola SEG SURVEY 2024

Julie Schofield



The Pinnacles, Arkaroola. Photo Piers Brissenden

I have been asked to give an account of the Arkaroola SEG survey from the perspective of a first SEG Survey. While this is not my first biological survey it is my first survey with SEG and my first time up at Arkaroola.

SEG have undertaken other surveys at Arkaroola, so I won't give a detailed comparison of what we caught this trip and what was caught previously (that's a later article), except to say that we had to work a bit harder to find what we did find this trip, possibly as a result of the drier weather proceeding this year. So, for those who did not make it to this trip, I will give you the similar joy of working hard to find cryptic critters and geological delights, although maybe with less dust. Hidden within the following text will be species names and rock formations found on the trip (the list will be provided at the end of the article for those who like to tick off sightings).

Being not an *elderi* was pleasantly surprised to be invited to be a scientific officer along with Helen Owens, who I have learnt a lot from and Stuart Pillman who I had heard a lot about (all good I assure you). On the scientific bods team we also had Sam Gordon and Bernie Haase who were the lead birders and Mel and Ben McCallum in charge of the plant surveys assisted by their able offsidiers Odin and Ayla. The birding numbers were boosted by a short visit from Jenifer Hiscock and Phil Cole.

The grand plan was to have one survey site to the south-west, four sites to the north and four sites to the east. The sites to the north were along the famed Ridge Top Track also used by Arkaroola Sanctuary as part of their ridge top tours. Prior to the survey tales were told of the 4 wheel driving prowess of those of steely souls brave enough to navigate its lengths and descend the last slope called the staircase to the last site.

On the first day after somewhat leisurely breakfast and lunch packing session. We conglomerated around our

illustrious leader Alun Thomas, (ably supported by the other camp organisers Trent Porter and Piers Brissenden) and were split up into teams to set up the sites. I was pleasantly surprised at how easily and quickly the first four sites went in on day one. Not only due to the enthusiasm and willingness of the people, but also as there are some permanent pitfall sites which meant less hole digging. The fence lines were still a bit challenging in the rocky ground, I had to get some help to pegmatite fences in place. We were still able to get appropriately covered in enough dust from putting in the fence lines that we felt we had done a hard day's work. As the temperatures looked to be rather cold that night, we only had one trap line open and the other three set up and ready to be opened the next day when it wouldn't be quite so chilly for the critters.

Day Two, we had an early start to pack our lunches. I tell you lunches are a serious business, you must be quick to get the choice cuts. Some people can move surprisingly quickly in spite of their age! But there was always more than enough to go around. Then off to breakfast and out to the traps by 8am. This would be the morning routine for the rest of the trip.

One group went to open up the already set traps and the second group led by Garry Trethewey went in convoy up the ridge track ensuring communication protocols and dodging the tour vehicles. For those who haven't been on the Ridge Top Track, imagine for the most part a single car width track that goes up and down and along ridge tops. The views are spectacular as is the bouncing and vibrating as the car travels over the rough track. It was a full day adventure every time the traps at the ridge top were checked, so the packed lunches really did come in handy, and they tasted even better because of the views.

Even the most *robustus* were a little bit tired coming down at the end of the day from a ridge top outing. The gold star stamina award goes to Garry who drove most of the

trips up there. Towards the end of the trip some of the more *timida* people drove the ridge top track and had the time of their life (go Jess).

Due to the generosity of the Arkaroola Village we didn't have the scramble of a team needing to cook dinner every night and we were definitely well fed and we had the opportunity to share our daily adventures and observe types of visitors who visited the village.

After dinner was show and tell. Site ARK013 definitely delivered the goods on the first night with a beautiful young yellow faced whip snake and a Nobbi dragon. Most evenings



Yellow-faced Whipsnake. Photo Piers Brissenden



Red Barred Dragon seen at Site ARK009. Photo Julie Schofield.

ended with a bit of a show and tell and a gathering to discuss the actions of the next day.

Throughout the trip the Elliot traps seemed to provide the greatest diversity of captures with a jewelled gecko being one of the prettiest captures. People doing the active searching working hard Ctenotus anything other than robust skinks and, as the name suggests the common dwarf skink.



Spotted Slider. Photo : Piers Brissenden

One of the most exciting of the finds (for me at least) was the male red barred dragon in breeding colours. However, for some reason when he was released back to his rocky kingdom (after an evening of show and tell) he was very reluctant to stick around for photographs and remained aloof for the rest of the trip disappearing whenever we went past to check the traps.

Site ARK011 on the edge of a rocky slope with *Eremophila* transitioning into a sandier creek bed into a creek bed with *Melaleuca* was a bit of a treasure trove, with Stripe-faced Dunnarts (the ultimate cute assassins complete with little dagger teeth and masks who will take on prey as large as themselves and munch them down with relish), the Spotted Slider, one of the skinks with reduced limbs who burrow through the sand a leaf litter and finally, who could forget the actual Broad-banded Sandswimmer who was prowling around under the sand in one of our traps like the worms out of Dune.



Stripe-faced Dunnart. Photo Julie Schofield

An actual Echidna was also spotted at this site, we knew there were Echidnas around as we were all issued with plastic bags and datasheets to pick up any droppings we found. It was a rather gneiss activity as everyone could participate as the signs could be found at most sites. It was an education for some as to what Echidna poo looked like (for those that are uninitiated it looks like a compact cylinder of soil with sparkly bits (termite carcasses) in it and it doesn't have pointed ends like a fox or dog but breaks off with flat face at the end).

Most days there was opportunity for active searching or going on a little adventure. Many of the participants went for a walk down Arkaroola creek towards Barraranna Gorge. Anyone who has been up in to the Flinders and Gammon ranges will know the red rocks that change colour with the angle of the sun and radiate the heat right back at you, and you can be surrounded by tall walls or rock faces in the steeper areas. But what was fascinating about this walk was even though we were well on the way in to the arid land



Rippled rock faces in Barraranna Gorge of ancient sea beds.

Photo: Alun Thomas

locked part of Australia some 350 km from the nearest ocean, all along the walk were ripples and layers of the ancient sea bed.

There were a very few areas that held water and those that did were a bright green colour, with red dragonflies and orange wasps zipping over their surfaces. But they were far outnumbered by the rock faces and layers that were rippled by historic water.

There are so many adventures and discoveries that were had over those 10 days that it is impossible to recount them all here. There was something for everyone, whether it be birds, the birdos recorded 55 species during the survey. Rocks, some people investigated them up close, some people licked them, some people used them as day lounges, some people admired the crystals and patterns and some people even told tales of the geologists who came out to explore the area. For those who aren't rocked by rocks, the names of the locations had tongues twisting in all directions and some people sounding like they had a stutter. Much time was also spent by the not botanists admiring the local flora and speculating on what its name might be.



Brian Swann with a Echidna found at Stubbs Waterhole.

Photo Annette Vincent.

But what made the trip most enjoyable was the people, to have so many people with so many different strengths and a diversity in preferences on how they do things to all pitch in and work together to make the survey a success. The number

of stories and experiences that were shared, the knowledge that was passed on and the fun that was had. People supported each other and were generous with their time and knowledge. One highlight was the impromptu quiz night and bird show, that was put together last minute with cracker questions created by a team of brains and fantastic quiz master and lolly rewards.

There was of course one last *suta*-ble surprise for us, just when we thought the survey was all done and dusted the traps were all packed and we were heading for our last dinner together, a cute little Curl Snake was captured on the road between our accommodation and the dining room. It was put in a foam box and dutifully admired. The capturer feeling the call to supper (and most of the other people too) disappeared, leaving Helen the job of releasing the now slightly annoyed little snake. But if put-out reptiles are the worst that happens it can be counted as a successful survey!

Words to find:

Strophurus elderi – Jewelled Gecko

Ctenotus robustus - Eastern Striped Skink

Lerista timida - Dwarf Three-toed Sider

Suta suta – Curl Snake

Pegmatite - igneous rock*

Conglomerate – Sedimentary rock with blobs of other rock in it*

Gneiss -metamorphic rock*

*Sorry I know nothing about rocks except their names make good puns

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The quiz night in Greenwood Lodge. Photo Helen Owens



Exploring a waterhole in Barraranna Gorge. Photo Helen Owens

BIRDS SEEN AT ARKAROO LA PHOTOGRAPHED BY BERNIE HAASE



Little Woodswallow



Brown Goshawk



Red Capped Robin



Painted Finches



Owlet Nightjar



Short-tailed Gress Wren



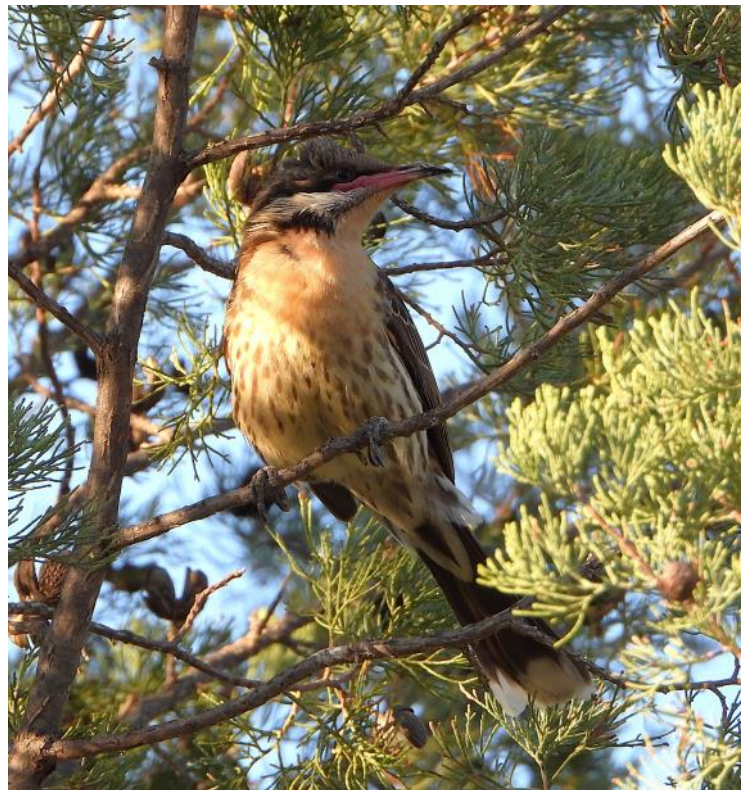
Hooded Robin



Crested Bellbird



White-browed Babbler



Spiny-cheeked Honeyeater



Red-backed
Kingfishers



Grey-fronted Honeyeaters



Redthroat



Mistletoebird

PRELIMINARY ANALYSIS OF MINNAWARRA CATCH DATA

Based on a report by Jack Davey

The Minnowarra Biodiversity Project, initiated in 2001, is situated on the Willing family property near Myponga, just an hour south of Adelaide. This conservation initiative by SEG President Emeritus, Richard Willing, followed designation of selected areas as Heritage Listed and the exclusion of domestic grazing animals by fencing. Biannual surveys have been conducted every autumn and spring to monitor and record changes in biodiversity over time.

The project encompasses nine established sites, though site number six was decommissioned after the first year due to the presence of "die-back" (*Phytophthora cinnamomi*), a plant pathogen that can cause severe ecological damage. This pathogen spreads easily, leading to disease, death, and potential extinction of susceptible plant species, along with habitat loss for local fauna. To protect the ecosystem, strict biosecurity measures are in place, including the thorough cleaning of all equipment, especially boots, by removing mud and applying disinfectants before and after entering each site.

Supported by dedicated volunteers, the project employs various trapping methods, including pitfall, Elliott, harp, and cage traps, to capture and study small mammals, bats, birds, reptiles, and frogs. Over four days and nights, these surveys involve identifying, weighing, sexing, microchipping, and releasing the animals back into their habitats. The collected data is then meticulously recorded for future analysis to uncover trends and patterns in species populations.

To further understand the data of the biodiversity surveys, SEG awarded an internship to Jack Davey, who conducted a preliminary analysis of the available data. For this analysis Davey focused on three dominant small terrestrial mammal species: the swamp rat (*Rattus lutreolus*), the bush rat (*Rattus fuscipes*), and the yellow-footed antechinus (*Antechinus flavipes*). These species, regularly captured using Elliott traps baited with peanut butter and rolled oats, were studied across eight different sites from 2008 to 2022. Davey analysed various factors, including species abundance, site

Figure 1: Changes in rainfall at Myponga through original Precipitation value

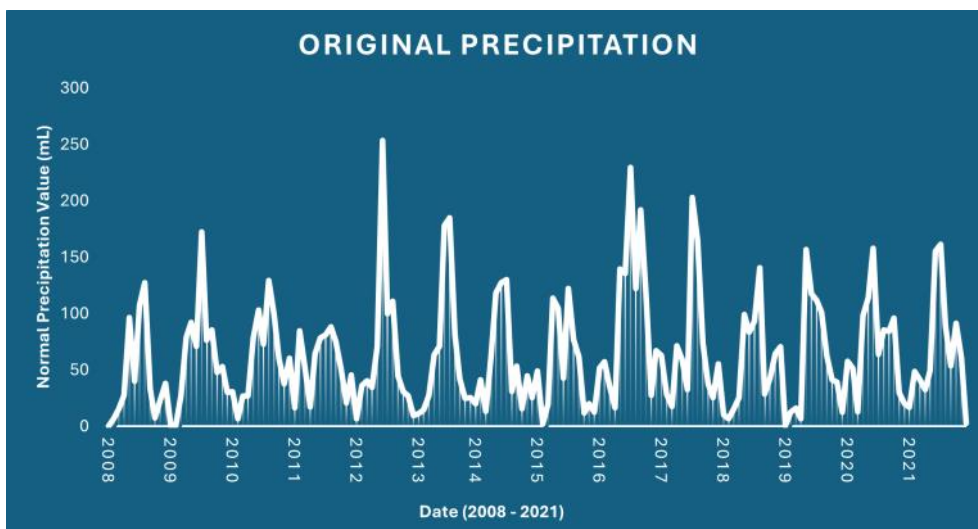
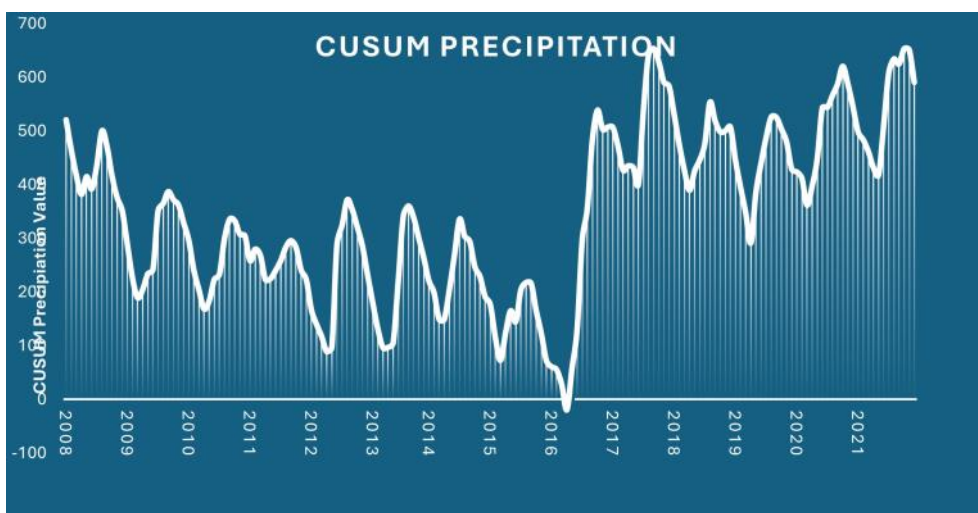


Figure 2: Changes in rainfall at Myponga through CUSUM Precipitation value



location, sex, and date of observation, deciding to exclude Autumn data due to inconsistencies. For that reason, the analysis focused solely on surveys conducted in spring. Additionally, for the Antechinus only females were included in the study. This choice was made because males undergo a life cycle phenomenon known as "semelparity", where they often die off after a single, intense breeding season.

In an effort to understand the relationship between species population fluctuations and climatic conditions, cumulative rainfall data (CUSUM) was calculated and incorporated into species population graphs for the duration of the study period. This approach offers a clear view of rainfall patterns, highlighting whether rainfall was generally above or below average over the years. Overall, the analysis suggested that rainfall somewhat influences the populations of these three small mammal species. As rainfall increases, so do the observed

Figure 3. Swamp Rats trapped at Minnowarra (not including Sites 6 and 9) during spring surveys from 2008 to 2022 and compared to Rainfall CUSM.

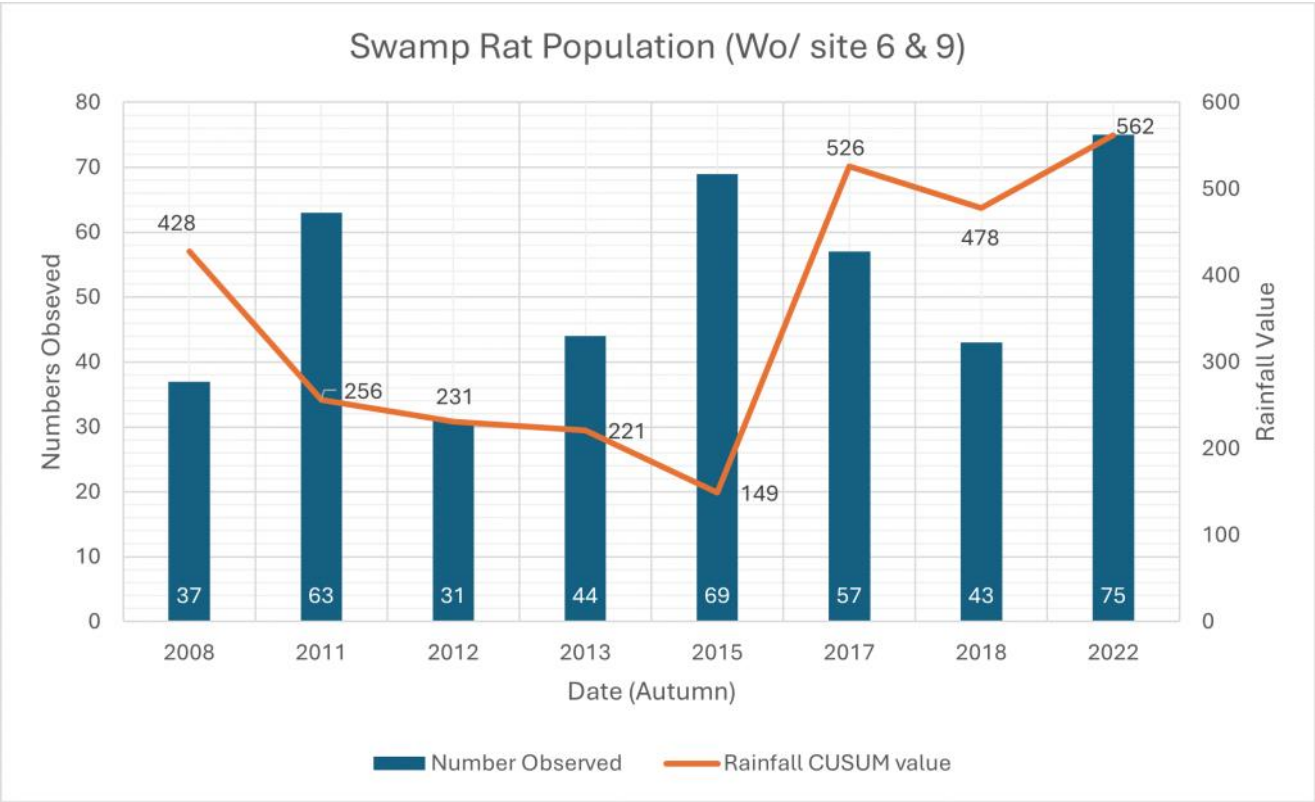
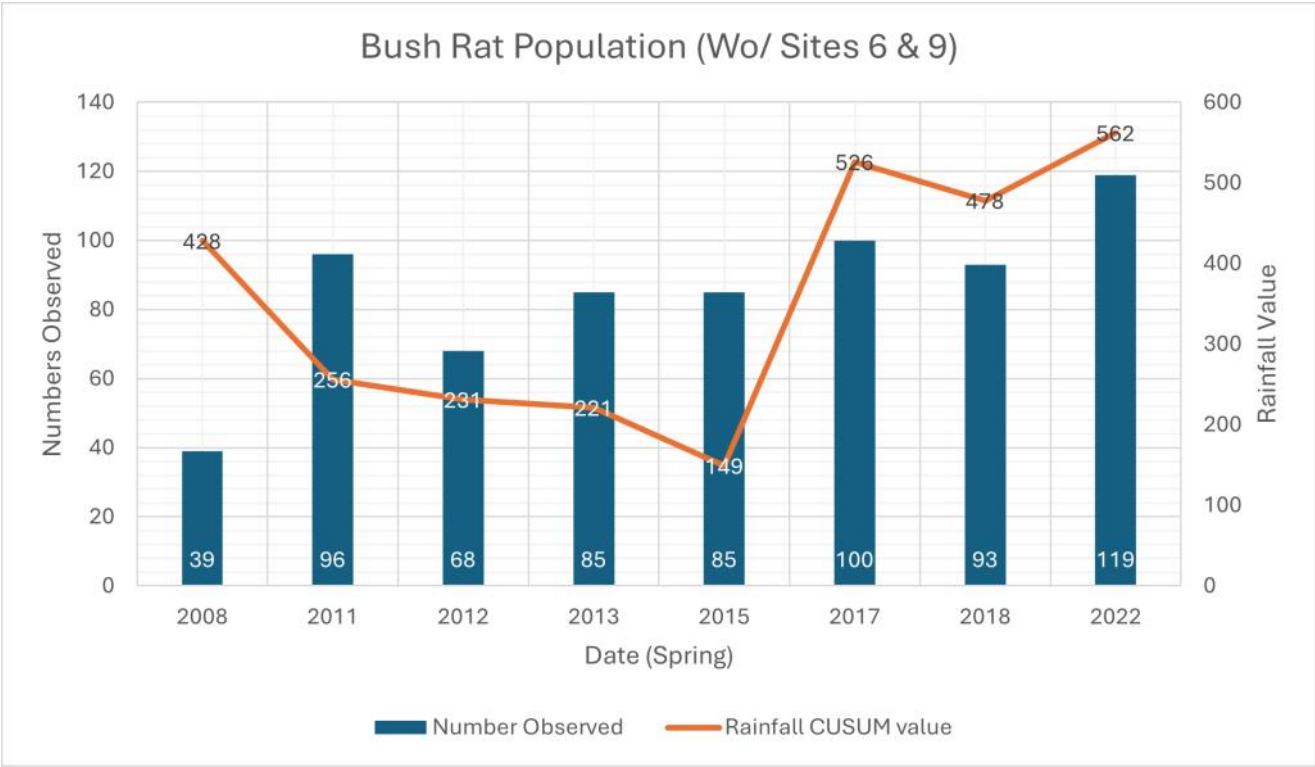


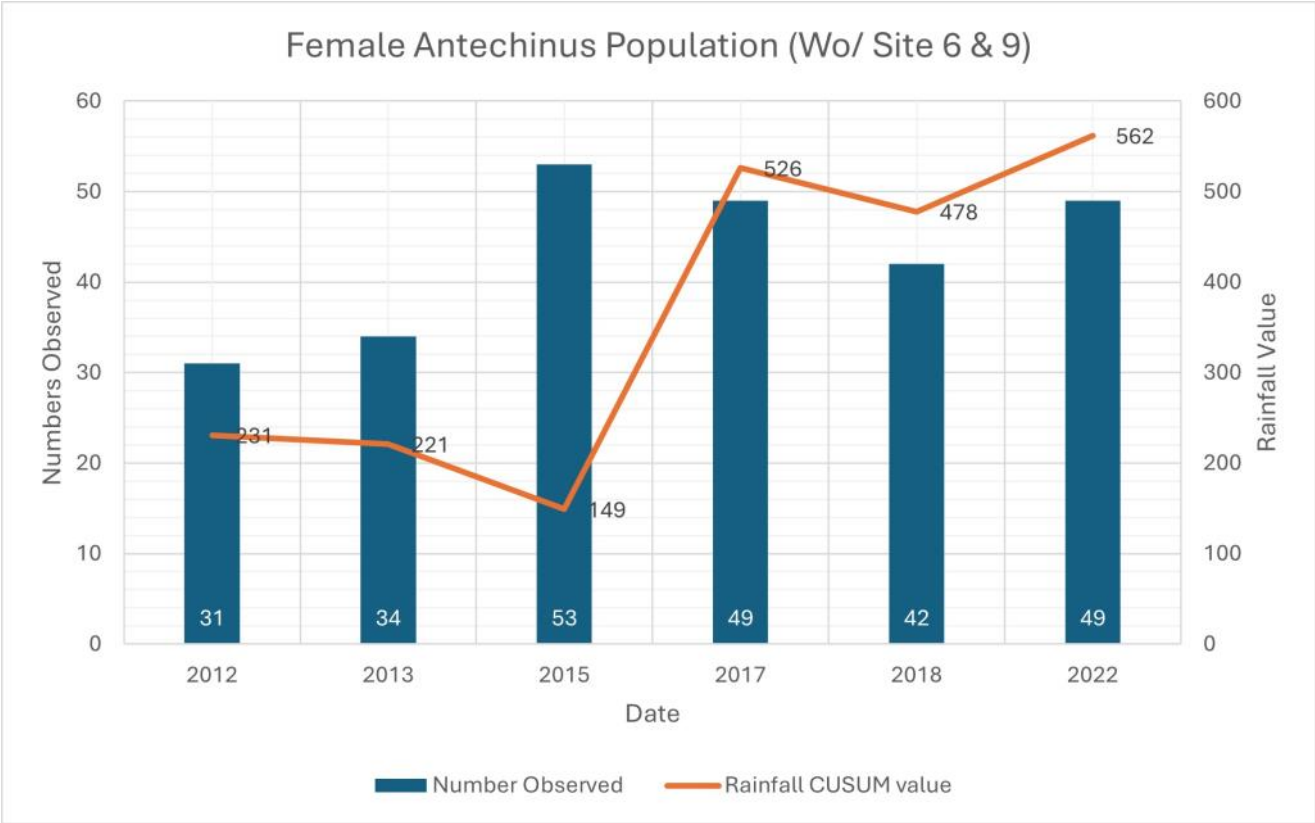
Figure 4. Bush Rats trapped at Minnowarra (not including Sites 6 and 9) during spring surveys from 2008 to 2022 and compared to Rainfall CUSM.



numbers of bush rats, swamp rats, and Antechinus. Conversely, a decline in rainfall is often followed by a reduction in their populations. This pattern underscores the critical role of rainfall in shaping the biodiversity of the

Minnowarra region. Despite these fluctuations, the target species have remained relatively stable in recent years, following initial peaks around 2011 for the rats and 2015 for the Antechinus (see Figures 3, 4 and 5).

Figure 5. Female Antechinus trapped at Minnowarra (not including Sites 6 and 9) during spring surveys from 2008 to 2022 and compared to Rainfall CUSM.



It may be further noted that for all three species, but particularly for the Bush Rats and Antechinus, the populations appear to have increased over the survey period which would appear to indicate that the fencing of the heritage areas has enabled an increase in overall numbers.

This study not only highlights the close relationship between climate and biodiversity but also emphasises the importance of ongoing monitoring and conservation efforts in protecting and understanding population trends. The

Minnowarra project provides a rare, long-term dataset that has great potential for more in-depth analyses and will provide a valuable baseline comparison for future surveys and land use monitoring.

Jack Davey

Ed: Jack was a University of Adelaide Intern Student with SEG.



Recording a catch at Site7. From left, Anthea Habel, Helen Johnson, Richard Willing and Jill Tugwell

VGRaSP REPORT 2024

Chris Wright and Graham Blair

2024 has been a routine year for VGRaSP. Significant influence of the bushfire in December 2023. No floods, but rainfalls in 2024 unexceptional. After 36 years of operating the project, the rainfall record is becoming valuable for climate change assessment. There has been considerable interest in the data from both Flinders University and CSIRO

Actions taken this year.

4G upgrade and Telemetry

The upgrade to Telstra 4G is complete, covering 8 of the 10 sites. (the remaining two don't have Telstra network coverage). During the upgrade we have taken advantage of the chance to check radio paths between the various pluviometers and Telstra repeater stations and have found that Lyndhurst and possibly Farina offer coverage.

The December 2023 bushfire damaged the Plateau pluviometer equipment. Three trips to site this year have been required to carry out repairs. A new pluviometer instrument has been installed, and the telemetry gear, which was badly damaged, will be re-installed in April 2025. In the meantime,

temporary loggers have been set up at the Plateau pluviometer. (3 months of Plateau pluviometer data have been lost. The record can be patched using data from SAMBOT pluviometer

Data collection

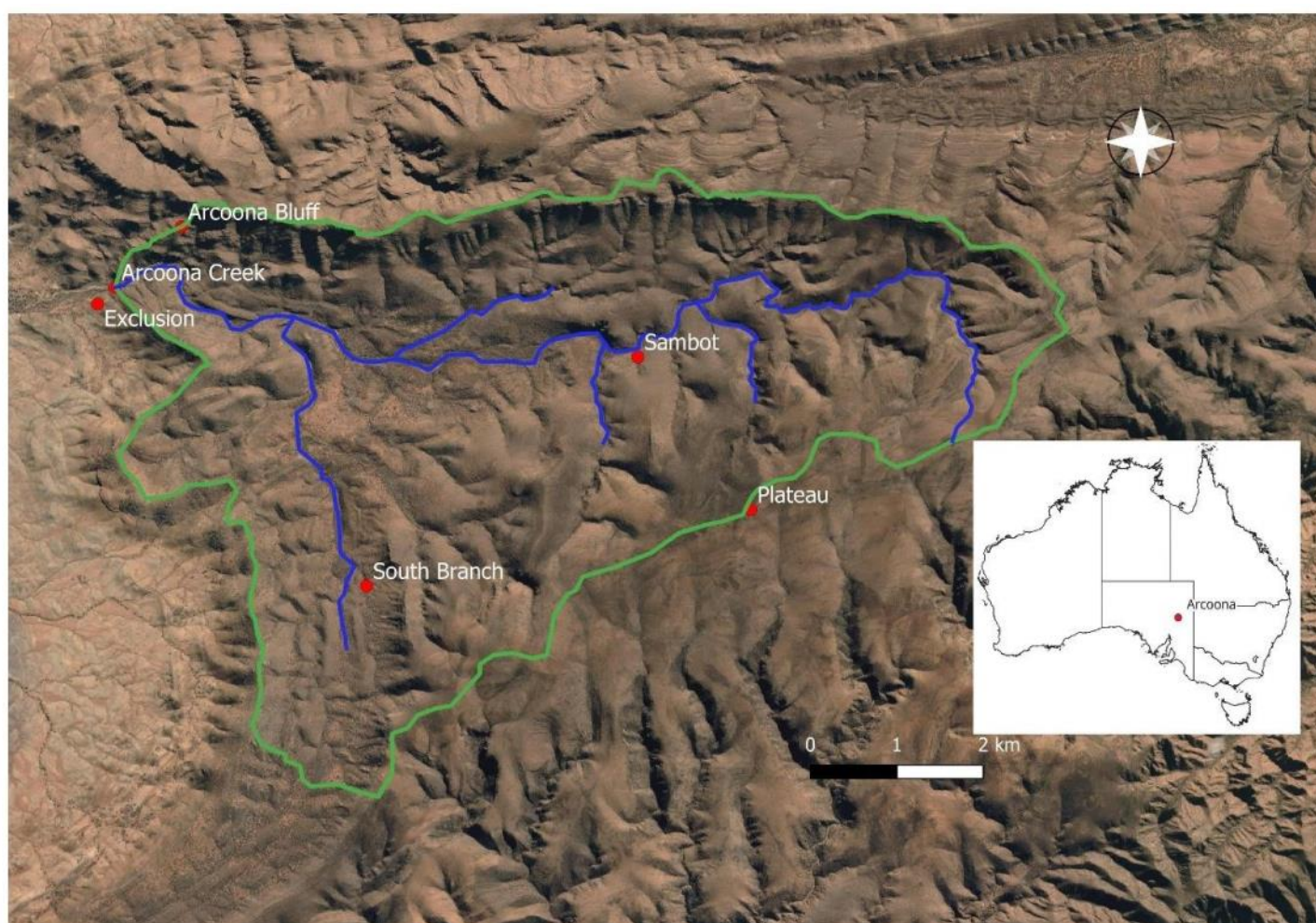
Routine data collection continued during 2024, all instruments were visited and serviced. Gel-cell batteries are 5 years old and will need to be replaced during 2025, at a cost of \$1,500. The Scientific Expedition Foundation has agreed to cover the cost.

Biological Monitoring

Garry and Michelle Trethewey have continued excellent work in photographic monitoring and observing fauna. Garry has continued with detailed reports after each trip. Post-bushfire, the regeneration has been relatively slow, however the lizards are doing well, and Sarah Kemp has some excellent photos.

Meeting the technical challenges

At this stage the technical challenges have been tackled as they have arisen, as described above. Graham Blair who has



VGRaSP catchment area (bounded by green line) in the Vulkathunha Gammon Ranges National Park. Courtesy Dr David Kemp.



Dragon Lizard on the Plateau. Photo by Sarah Kemp

led the pluviometer work, the telemetry and data management, has been battling medical problems, and has been assisted by Christopher Kemp who installed the new pluviometer on the Plateau during the recent trip to the Plateau

The benefit of the data

The data record from The Plateau extends back to September 1988, and is fast becoming a valuable asset for climate change assessment.

John Waterhouse and Chris Wright met with Professor Huade Guan at Flinders University. He and his team expressed interest in working with SEG, and when he gets back from WA, this will be followed up.

In addition, Chris Turnadge, CSIRO, has completed preliminary analysis of all Arcoona Creek data and has offered to do further work, possibly in association with regional assessments.

All data is available on the WaterData SA website (<https://www.waterconnect.sa.gov.au/Systems/SitePages/Surface%20Water%20Data.aspx>) and is updated regularly.



Personnel on the October 2024 trip. From left to right Frank Tomas, Chris Wright, Chris and Sarah Kemp

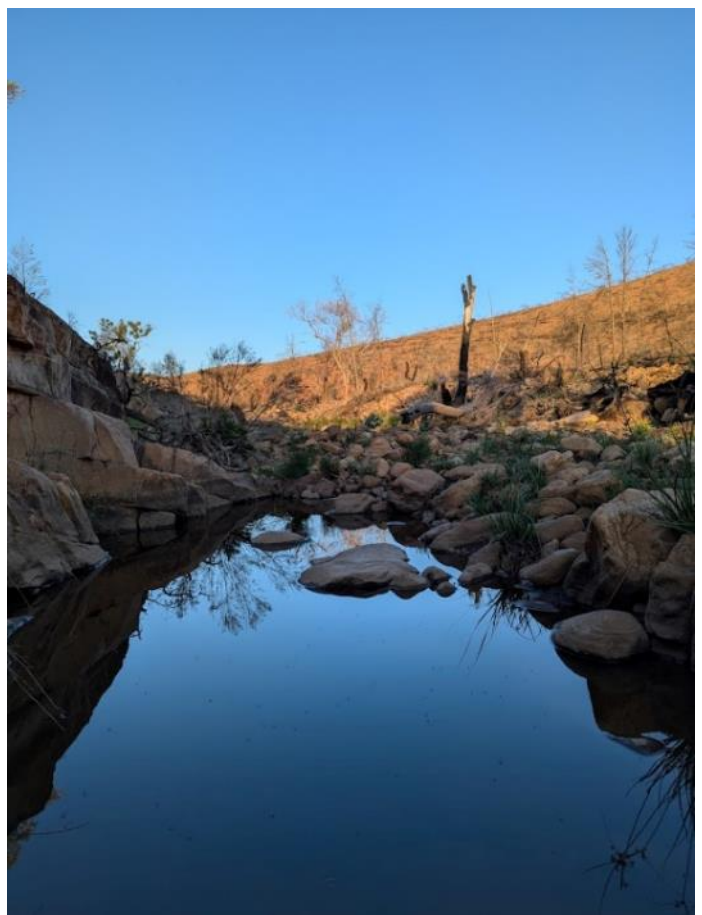
The People

Over the years, many expeditioners have worked on VGRaSP. Particular thanks are due to Graham Blair managing the telemetry, data collection and instruments, and to Garry and Michelle on the biological monitoring, also to Christopher and Sarah Kemp .

Alex Cornish has enthusiastically managed the April trips, helped by a keen group, willing to carry water, food and equipment to the remoter sites. Phil and Janet Davill have done the servicing on Arcoona South and The Bluff. Chris Wright and John Love focused on the station country instruments. John Love has been active in building heat shields for the telemetry gear on each site. Steven Gatti has given great support, as has Sarah Hollis.

Surface Water

Over the years we have become accustomed to the lack of surface water in the Arcoona Creek catchment. The only permanent water is near the outlet, at Woodcutters Well and close by at the seeps in Arcoona Creek. In both cases the water is a vital source for animals and birds under dry conditions, although the salinity can be quite high. We have managed field trips by carrying in water, often doing special trips, and by storing water in caches. Opportunistically the caches were filled on occasions when there was surface water, often at Grandfield Waterhole.



Pool close to Vandenberg Camp. Photo Sarah Kemp

Since the bushfire, a dramatic change has occurred in the upper catchment. Virtually all vegetation has been burnt. During 3 trips in 2024 there has been water in most of the pools upstream of Wild Ass Creek junction.

Rainfall during the year has not been exceptional and experience would not suggest finding water. Discussions with Hydrogeologists (e.g. John Waterhouse) suggest that the removal of all vegetation by the fire has dramatically reduced evapotranspiration, e.g. from River redgums. Also the bare soil surface may have been capped by rainfall. It is suggested that the groundwater, in the unconfined gravels in the creek bed has risen to the surface and is maintaining surface water levels. After the fire, water quality was poor, with much ash. However, the quality is good enough to support aquatic life, as evidenced by the heron.

The coming summer will no doubt lower the water table and it will be interesting too see how much.

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A White Necked Heron at Vandenberg Camp

SEG'S 40TH BIRTHDAY CELEBRATIONS

Alun Thomas

On Sunday 20 October 2024 SEG celebrated 40 years since it was formed, with a barbecue and talk at the Volunteer Centre in Long Gully, Belair National Park.

The celebration was attended by our Patron, Mr Rod Bunten and more than 40 members and friends.

After a barbecue under the shady trees of Long Gully we were privileged to have a talk by ecologist Peter Copley on "Scientific Expeditions of a Threatened Species Ecologist". Peter spoke on the fieldwork he had done which directly related to the type of fieldwork training which SEG was originally set up to do and continues to do for young people of all ages.

The afternoon concluded with our Patron Rod Bunten cutting a 40th Birthday cake and a afternoon tea.



SEG Patron Mr Rod Bunten cutting the 40th Birthday cake.
Photo: Alun Thomas

MALLEEFOWL MONITORING NOVEMBER 2024

Helen Owens

The annual Malleefowl mound monitoring at Bakara Conservation Park for 2024 was carried out on the 3rd November. The planned date of 2nd November was declared an extreme fire day so unfortunately we required a last minute reschedule to comply with hot weather policies. Six of the expeditioners were unable to make the last minute date change but we still had ten people to help get the job done. It was a very pleasant day trip with a later than normal start of 9:30 to give people time to drive up from Adelaide. With the group split up into four teams it was a comfortable three and a half hour walk with everyone re-convening at the campground in time for a late lunch.

We were all rewarded for our efforts with each team recording at least one active mound (total of five in the park out of the about 50 mounds checked). The 8 cameras were all checked, with memory cards and batteries replaced. Our suspicion of camera interference was confirmed with images from the camera showing a guilty goat approaching a camera before the camera pointed at the ground and then pointed at the sky. Further investigation is underway !!!

Other highlights of the day were the sightings of multiple Southern Mallee Dragons (*Ctenophorus tuniluki*) running around and a much less common Nobbi Dragon (*Diporiphora nobbi*).

Two new recruits came along for training and were a great asset to the trip and hopefully future trips. Thanks to all

who came and those that tried to come. Our data would already now be loaded into the National Malleefowl Database contributing to the big picture and helping inform management for this amazing, special, creature.

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Kathleen Cunningham and Emma Randal inspecting one of the active sites located on Bakara this season. Photo: Alun Thomas



A goat approaches a camera with subsequent photos indicating the camera first pointing to the ground and subsequently to the sky.



Nobbi Dragon: Photo Helen Owens

CHAIRMAN'S REPORT 2024

Bob Sharrad

So the Scientific Group is now 40 years old and some among us will remember the early days: the first expeditions and scientific studies and the many that followed.

Expeditioners have worked in the deserts, the mountains, the mallee and the woodlands and forests. They have been bogged, sand-blasted, had their tents blown down, been bitten and endured countless hours listening to the likes of Trent. Over this time though they have collected an astonishing array of information which has (mostly) been stored for use by researchers. Most importantly they have enjoyed themselves and enhanced their appreciation of our fascinating environment and its biota.

Many organisations don't reach our age. However, I think we are actually getting stronger and have much more to achieve. As evidence for this I note that we have recently added a number of impressive, well credentialed, younger people to the Committee including: Piers Brissenden, Viv Passos and Julie Schofield. We have retained: President: Alun Thomas Vice-Chairman, Duncan MacKenzie, Secretary: Sarah Telfer Treasurer: Peter Whitehead, Committee members: Trent Porter, John Love, Helen Owens, Jill Tugwell. Happily, our former President, Richard Willing, is also a regular attendee.

During the meeting we will have reports on our ongoing, **long-term projects:**

- **Malleefowl monitoring** is turning out to be requested of us each year and Helen Owens has the major organising role for SEG. Janet and Phil Davill are tireless workers on the project

- The **Vulkathunha Gammon Ranges Scientific Project** (V-GRaSP). Graham Blair, Chris wright, John Love and Garry and Michelle Trethewey conduct regular trips to this remote and rugged area and we always look forward to hearing about their adventures.

- Richard Willing and Janet Furler continue to lead the **Minnawarra project**, conducting, with volunteers, autumn and spring surveys of terrestrial vertebrates and we look forward to their report.

SEGments our colourful and informative journal is edited by Alun Thomas and continues to maintain a very high standard.

Arkaroola fauna survey: Some of you have recently returned from this trip to one of the most rugged parts of the Flinders Ranges and we look forward to learning about the results of the work.

Adelaide University Internships: Helen Owens and Piers Brissenden organised this important initiative and Annabelle Matthias was selected to attend the Arkaroola survey

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THE MINNAWARRA BIODIVERSITY

PROJECT SPRING SURVEY 2024

Richard Willing

The survey was preceded by a very dry Spring followed by some appreciable rain in the weeks before the survey started. In the week before the survey there were some quite severe frosts in parts of South Australia. A band of staunch SEG supporters assembled on Saturday morning 28th September to prepare the 8 survey sites and open up the Elliot, pitfall and cage traps, only to close them again after the afternoon round because of a forecast 5 degrees C overnight. After re-opening the traps the next morning the sun shone upon us for the next 5 days, but the days were cool, with little wind. Because of the recent rain, though, about one third of the pit traps had to remain closed because they were filling with ground water.

Once again the predominant small mammals were native rats. Bush rats (*R. fuscipes*) led the pack with 52 individuals caught 80 times, with 20 recaptured from previous surveys, and 32 new animals microchipped. Next were swamp rats (*R. lutreolus*), 40 individuals caught 64 times, with 8 recaptured, and 32 newbies microchipped. Last were *Antechinus flavipes* with much diminished numbers. 23 individuals were caught 59 times, with 13 recaptures, and only 10 new animals needed to be microchipped. This is the time of year that all the *Antechinus* caught are females, mostly with young in their pouches. They appear to have been outbred by native rats over the past few surveys. It will be interesting to see if this trend continues, and why. Watch this space in future!

Although the total number of small mammal captures was 203, the previously busy sites were all rather quiet. It was too cold for skinks, only one caught, and one frog. The bird survey is still coming.

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Antechinus with young in pouch.

SCIENTIFIC EXPEDITION GROUP INC.

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RENEWAL for 2024 — 25

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Scientific Expedition Group Inc.

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