

A photograph of a forest floor. In the foreground, several tall, thin, white, cylindrical flower spikes (likely Yucca or similar) stand upright among green grass and ferns. In the background, several dark, thick tree trunks are visible, with green foliage and branches filling the upper part of the frame. The lighting is soft, suggesting a shaded forest environment.

# *SEGments*

Journal of the Scientific Expedition Group Inc.  
Volume 30 No. 3 December 2014



# Scientific Expedition Group Inc.

## Volume 30 Number 3 December 2014

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**Cover photograph:** A Native vegetation compartment in Nangwarry Native Forest Reserve which was burnt about 18 months ago. Photograph Alun Thomas

The Scientific Expedition Group (SEG) came into being at a public meeting on 21st August 1984. Members receive regular information on SEG activities and expeditions. 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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## EDITORIAL

The Scientific Expedition Group has just completed a biodiversity survey of Nangwarry Native Forest Reserve in the lower South East of South Australia on behalf of Forestry SA. The survey was a success in the sense that the required surveys were carried out, but the results were somewhat disappointing with respect to the number of small animals observed and the absence of some of the expected plant species.

Like most forestry plantations the Nangwarry Native Forest Reserve is divided up into a series of rectilinear compartments ranging in size from twenty five hectares to two hundred and fifty hectares, with most about fifty hectares. Compartments are subject to various prescribed burning regimes with the apparent intention of optimizing vegetation variety and growth.

In our fauna survey using pitfall lines, cage traps, Elliot traps and funnel traps we trapped two mammal species: antichinus (two caught) and brush tailed possums (two caught); and about five species of reptiles. Of particular note was that we found almost nothing of interest during the forage searching under leaf litter and logs. One would normally expect to see many creepy crawlies in such places. What we caught in abundance were trapdoor spiders. After the rain we had mid-survey, we caught up to ten male spiders in some pitfalls. Apparently after rain the male spiders go searching for mates and our fence lines must have intersected their paths.

Larger animals such as kangaroos, wallabies, possums and emus were relatively abundant, but these are species which can move relatively quickly between compartments when fires are lit.

Our bird surveys located a number of species but several of the smaller birds expected were hard to find.

The vegetation survey located many species, and although results are still being collated it does appear that some target species were not present in the numbers expected

Similar surveys done in the region twenty years ago gave much more positive animal and bird sightings.

It is impossible to draw definitive conclusions from a single survey. One factor which may have influenced the survey results is that it has been a very dry spring.

That being said, it is concerning that so little was found. It does appear that Forestry SA may have to reconsider its burning regimes or take some other action to restore a desirable ecological balance in the Nangwarry Native Forest Reserve .

Alun Thomas

Co-Editor



The SEG campsite at Nangwarry

# Threatened Plant Habitat Restoration on Kangaroo Island

Helen Johnson

## Introduction

Dr David Paton in his SEGments article "Securing the Woodland Birds of the Mt Lofty Region: A matter of scale and commitment" explained the need for large-scale reinstatement of threatened plant habitat, and noted that most revegetation works in the Mt Lofty Ranges are less than one hectare. Dr Paton also wrote of these revegetation works "I am yet to see a revegetation program that actually matches the heterogeneity that is typical of remnant vegetation" (SEGments June 2013). This brings me to the question "How do you successfully transition from cleared land to a biodiverse ecosystem?"

Several articles in SEGments (Dec 2011 and Dec 2012) have addressed the annual Kangaroo Island Planting Festival, and the success rate for large-scale plantings on the Island. I have been keen to discover the history of the plant habitat restoration project on Kangaroo Island since my attendance at two of the Festivals in 2011 and 2014, when over three days large numbers of volunteers planted seedlings in formerly cleared land. In July 2014, I was able to see for myself the growth over three years of the many species that I had helped to plant. It was truly an inspiring sight. I fully appreciate that many years of planning, research and pertinacity have underpinned the success of the habitat restoration project on Kangaroo Island.

## Kangaroo Island Nationally Threatened Plant Program – the beginning

In 2002 the Department for Environment, Water and Natural Resources (DEWNR) commenced the Kangaroo Island Nationally Threatened Plant Program (KINTPP) led by David Taylor. Whilst the western end of the Island has remained largely covered by native vegetation, the remnant vegetation of the eastern end is much sparser and heavily fragmented due to historical clearing. The island is home to a large number of endemic plant species, many of which are listed as threatened at a regional, State or national level under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act). Investigation under KINTPP revealed that the landscape was heavily fragmented, and that weed invasions, road works, livestock grazing and over-browsing by native animals (herbivores) were putting further pressure on the fragile habitat.

Fortunately DEWNR had access to 200 hectares of formerly cleared land that was made available by philanthropist couple Jack May and Hilary Austen on their Kangaroo Island property Cygnet Park Sanctuary. Cygnet Park is now owned by three parties: Jack May & Hilary Austen, Nature Foundation SA and David & Penny

Paton. Cygnet Park Sanctuary became the threatened plant project's main operational site and is also the site of the project's plant nursery. The non-profit organisation BioR has also been pivotal in the support of Cygnet Park, providing valued expertise to the island's threatened plant program.

## Results of early test plantings

Re-instating good quality threatened plant habitat required the planting of dense and diverse native vegetation, mimicking species composition, spacing and structural layering reminiscent of vegetation found in intact remnants. The first attempts in the threatened plant project to establish native seedlings were only moderately successful. In order to mimic threatened plant habitat found within the Eastern Plains area it was understood that the project would have to include a high diversity of plant species in its restoration sites. This would require the planting of at least 100-150 species to cover the most important of around 350 species identified in this area. In 2004, the collection of seed and cuttings from these native species, and propagation of these in adequate numbers proved impossible due to limited seed availability, and natural seed dormancies that could not be broken in a nursery environment. In addition early test plantings showed low seedling survival rates due to native herbivore damage and competition from weeds.

Over the next few years the KINTPP addressed the problems of competition from weeds; browsing by native animals (herbivores); acquiring the technical skills to propagate a high diversity of native plant species, and organising the resources and volunteers required to undertake mass plantings of tens of thousands of seedlings. The threatened plant project was additionally tasked to deliver large-scale plantings that would be



*Beyeria subsecta* (male flower)



maintenance-free and without the need for ongoing herbivore control.

### **Inaugural Kangaroo Island Planting Festival**

In 2007 the first larger planting was undertaken, testing some new concepts of intensified weed suppression and herbivore-proof fencing capable of excluding possums, wallabies and kangaroos. 2007 was also the year of the first annual KI Planting Festival which engaged more than 100 members from the community to help plant 23,000 seedlings within 3 days. Although these plantings proved successful in addressing the issues of browsing pressure and volunteer resources for large-scale plantings, further improvements in weed suppression were required to achieve higher survival rates for slower growing understorey species and to further reduce the need for ongoing weed management.

### **Weed suppression trials**

In 2008 a new long term weed suppression method was trialled on a larger scale by grading 22 ha of formerly cleared land to remove the nutrient rich topsoil as well as the seed bank of weeds and pasture grasses contained within it. The topsoil and weeds were piled up in mounds to the sides of the planting strips where they were to remain. It was determined that within the graded strip the remaining subsoil would be suitable for

the establishment of native plant seedlings but hostile to the more nutrient-hungry introduced pasture grasses and pasture weeds. The first surveys showed that survival rates for seedlings after one season were 87-93%, and while weeds were still abundant in the topsoil mounds, they had been largely unable to re-establish themselves within the graded strips.

Direct seeding into the graded strips also proved successful as the newly emerging seedlings could establish themselves virtually competition-free. The grading method had brought the project closer to its "plant and walk away" goal where after the initial topsoil manipulation no follow-up weed management was required after planting and direct seeding.

### **Improving plant propagation capability and capacity**

In the following years the project focussed on expanding the plant nursery propagation capabilities to a capacity of 130,000 seedlings and increasing the plant diversity from 80 to 150 species, including a number of nationally threatened species. The project invested considerable effort into testing numerous seed treatment techniques and currently the project applies around a dozen different techniques including aerosol smoke, 'wet' smoke, hot water, soil burning, leaching and treatment



**Kangaroo Island Planting Festival July 2010**

with various chemicals such as gibberellic acid and bleach.

### Expanding the KI Planting Festival

The delivery of plantings reached a new height with the 2011 Planting Festival when 122,000 project-grown seedlings were planted across 60 hectares within 3 days by 700 volunteers. A streamlined operations plan helped to coordinate the activities of the volunteers made up of locals as well as volunteers and staff from DEWNR, Nature Foundation SA, UniSA, Adelaide University, Conservation Volunteers Australia, Adelaide Botanic Gardens, the not-for-profit organization BioR, and SEG members Mara Pearson and myself.

After 8 years of fine-tuning it appeared that the project could finally efficiently deliver urgently required restoration projects that could halt and reverse the decline of plant diversity in eastern Kangaroo Island. Since 2011 the project has focussed on planting sites of 5 to 20 hectares across various sites on the Island, whilst also investing in the future by creating native plant seed production sites or 'seed orchards'.

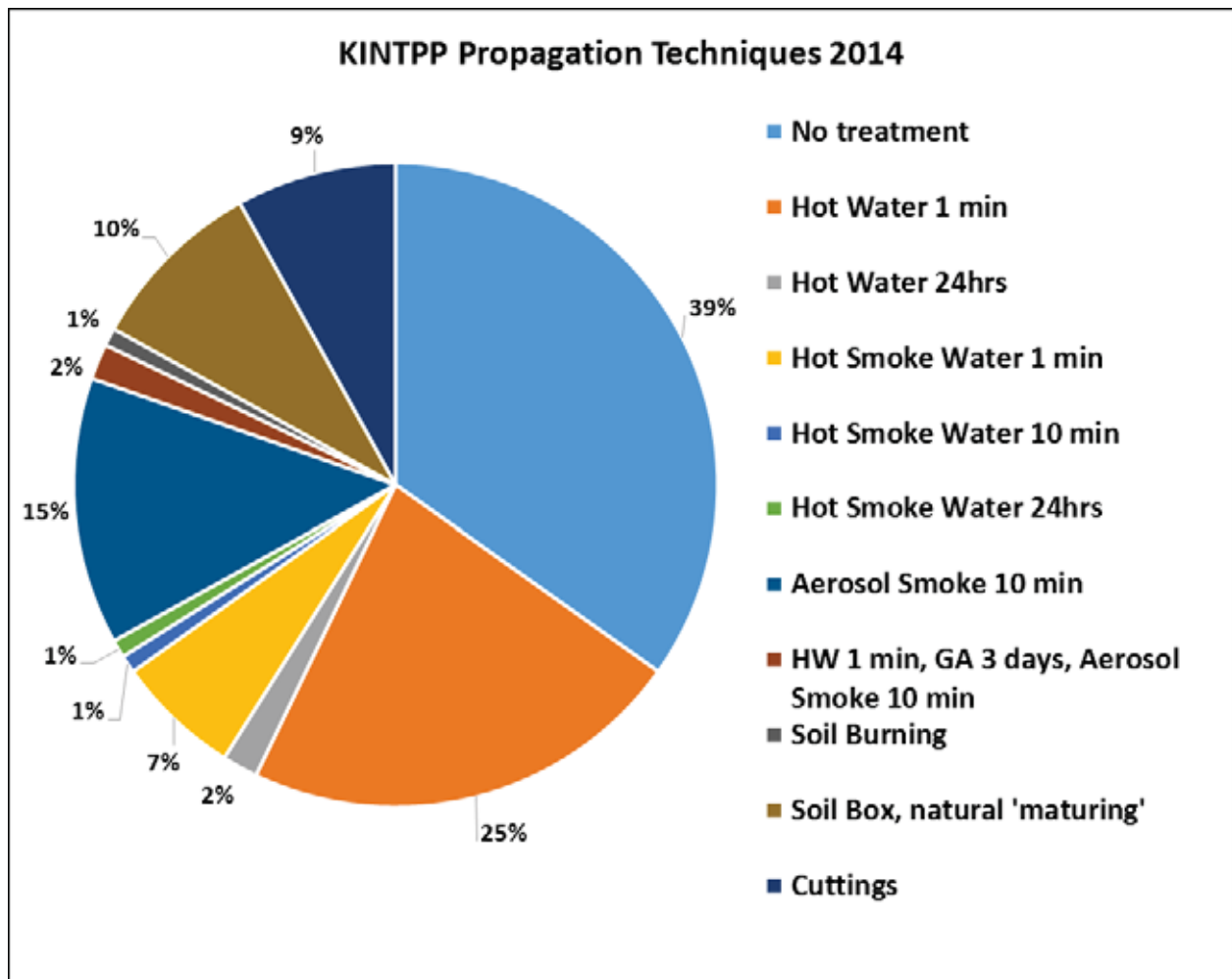
### Seed orchards to ensure seed availability

Large scale revegetation requires significant amounts of seed from a mix of species. Finding sufficient suitable parent plants to provide these seeds can be a major constraint. In practical terms it means that seed

availability can become an important limiting factor for large scale habitat restoration works. To overcome this issue the KINTPP identified a need to establish seed orchards to provide a valuable and readily accessible seed source for future revegetation projects. Seed orchards are specifically designed to include plants which can supply seeds that are difficult to collect in the wild. The seed to establish these orchards is collected from as many individual plants and locations as possible to obtain a high level of variability and prevent genetic bottlenecks at future revegetation sites.

Once established, these seed orchards will start contributing seeds for the various restoration programs across the island. The time taken and distance travelled during collecting trips is significantly reduced when seed from a number of difficult to collect species is available at a single location. These orchards will reduce collection pressure on remnant patches of vegetation and function as an important backup to wild plant populations should anything happen to them.

In 2014 the KINTPP established three seed orchards as part of its habitat restoration program. The orchards are embedded within diverse plantings and have the added advantage of becoming threatened plant habitat themselves. There are 25 species represented in the orchards, all of which qualify as 'hard to collect from wild





populations'. Included are five nationally threatened species; *Olearia microdisca*, *Pomaderris halmaturina* subsp. *halmaturina*, *Leionema equestre*, *Spyridium eriocephalum* var *glabrisepalum* and *Beyeria subsecta*.

### Germination success with *Olearia microdisca* and other nationally listed species

The project's various methods of seed treatment for successful germination will be of particular interest to SEG's botanists. Some of the earliest tests with propagating the EPBC listed Small-flowered Daisy-bush (*Olearia microdisca*) did not show any overwhelming results, but some germination in the nursery environment gave hope for improvement. The project managed to get some seed to respond to smoke water treatment, breaking the seed dormancy of this species known to be able to remain dormant in the soil seed bank for at least 70 years. The results in the early years were somewhat inconsistent across the seasons but eventually the best methodology was worked out. Currently, the seed of *O. microdisca* is dry-smoked with pasture hay and sown in seed trays in the months of June and July for best results. Experiments have shown that smoke treated seed can safely be stored in sealed plastic bags for a number of months with no reduction of the germination rate; i.e. the 'bushfire treatment' can effectively be sealed into the seed for later use, for example for direct seeding in the field. To date more than 6,000 seedlings have been successfully planted in many of the project's restoration sites. Many of these established plants are now good seed producers and significantly help towards collecting vast amounts of seeds of this species. This has enabled the project to include *Olearia microdisca* into its direct seeding program and should ultimately assist in re-establishing this species on available land across most of its former range. What a heart-warming result for the years of dedicated effort.



Seeds of Small-flowered Daisy-bush (*Olearia microdisca*)

Good results were also achieved with Kangaroo Island Pomaderris (*Pomaderris halmaturina* subsp. *halmaturina*). The seed of this species is relatively easy to collect and heat treated for propagation. The local sub-population around Cygnet Park has been boosted from 83 known remnant specimens in the wild in 2002 to well over 3,000 specimens in 2014. Seeds of other Kangaroo Island EPBC-listed species such as the endemic Kangaroo Island Phebalium (*Leionema equestre*) and Kangaroo Island Turpentine Bush (*Beyeria subsecta*) are notoriously

difficult to collect and germinate. Low seed availability, low seed viability and seed dormancies that are hard to break have resulted in slow progress with these species. However, there appears to be some good news around the corner with the KINTPP's chief propagator, Michelle Haby, recently reporting "somewhat of a breakthrough" with *Leionema equestre*. From a propagation point of view the outlook for this species is now "promising".

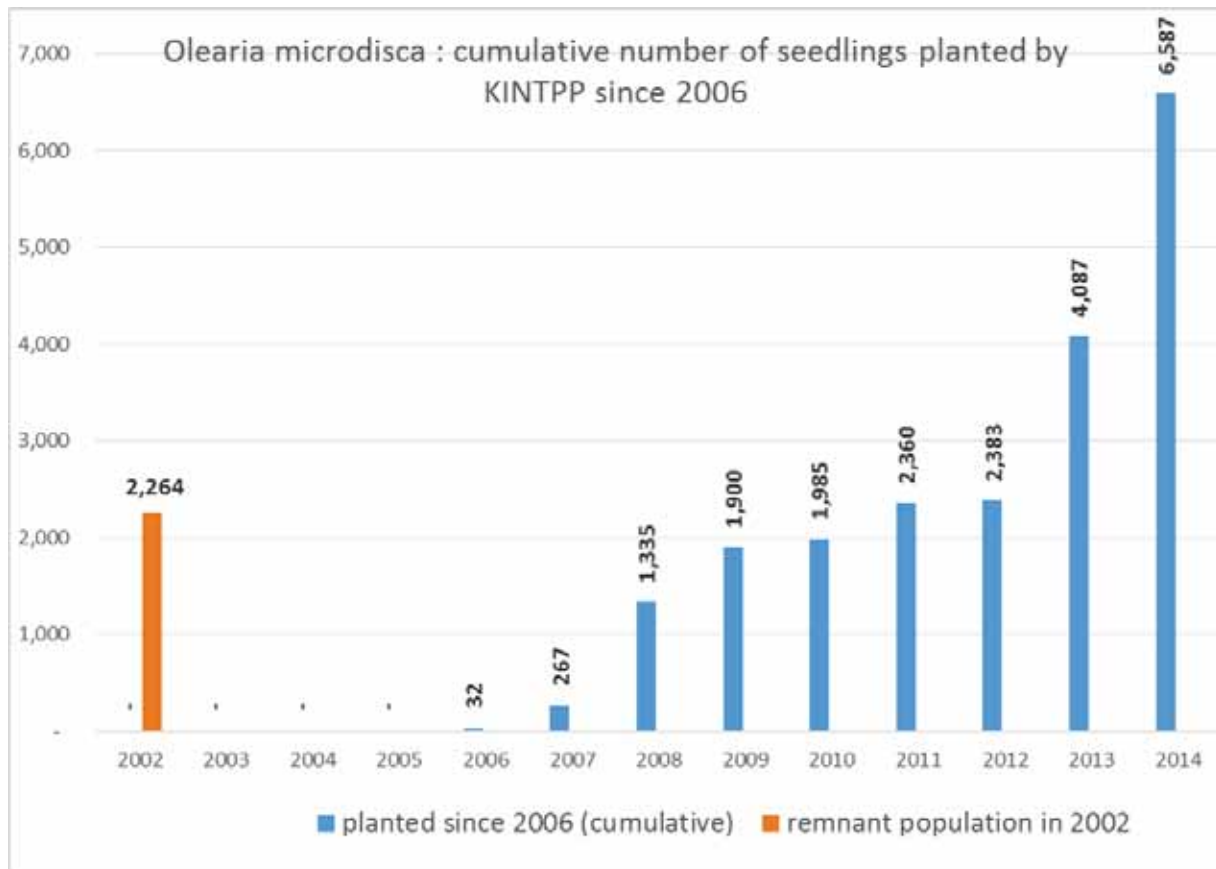


### Achievements to date

The Kangaroo Island Nationally Threatened Plant Project has planted 590,000 seedlings, comprising 150 species across 265 hectares and engaged 3,100 volunteers across all of its activities from seed collecting and propagation to planting in the field. The KINTPP has achieved success on all fronts: weed control, seed germination, plant propagation in large numbers and high density, mass plantings, herbivore control and establishing seed orchards for seeds from hard to collect species and including five nationally threatened species. The restored habitat is largely 'plant and forget', although in this matter Dr Paton confirms the constraints that the KINTPP is aware of: "To build a woodland habitat takes a hundred years or more and there is a need to continually manage and adjust the plantings to secure the desired end result". (SEGments June 2013)



Kangaroo Island Phebalium (*Leionema equestre*)



The 2015 Kangaroo Island Planting Festival is tentatively planned for the weekend of 4/5 July and will be confirmed on the Natural Resources Kangaroo Island Website ([www.naturalresources.sa.gov.au/kangarooisland](http://www.naturalresources.sa.gov.au/kangarooisland)) closer to the date. Volunteers are welcome to join in for one day or several days.

*I wish to acknowledge the valuable assistance of Heiri Klein, Catchment to Coast Program Manager, Department of Environment, Water & Natural Resources (DEWNR) in the preparation of this article. Photographs and figures courtesy DEWNR*

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Reinstated habitat at Cygnet Park planted in 2008 and photographed in 2012



## SEG Celebrates 26 Years Work in the Vulkathunha - Gammon Ranges National Park (VGRNP)

Sunday 5<sup>th</sup> October 2014

**Text of President Richard Willing's speech on the 26  
year commemoration of V-GRaSP. Read on the  
Gammons Plateau by his daughter Janet Furler**

To all members and supporters of the Scientific Expedition Group associated with the Vulkathunha – Gammon Ranges Scientific Project (V-GRaSP).

This is a very special day in the history of the V-GRaSP project. To imagine a volunteer project not only lasting this long, but continuing to expand and grow in stature is quite remarkable. The recent equipment upgrade means that the project is capable of going for much longer with less manpower to maintain it.

As President of SEG, I would like to congratulate all who have played a part in starting and supporting V-GRaSP and bringing it to its current highly organised state. A large number of people have been involved, and it would be difficult recognize all who have contributed, but mention must be made of Chris Wright, whose enthusiasm, organizing skills, dedication and persistence in the face of recurring obstacles over the years has enabled V-GRaSP to be where it is today. The reunion program today is due entirely to his enthusiasm.

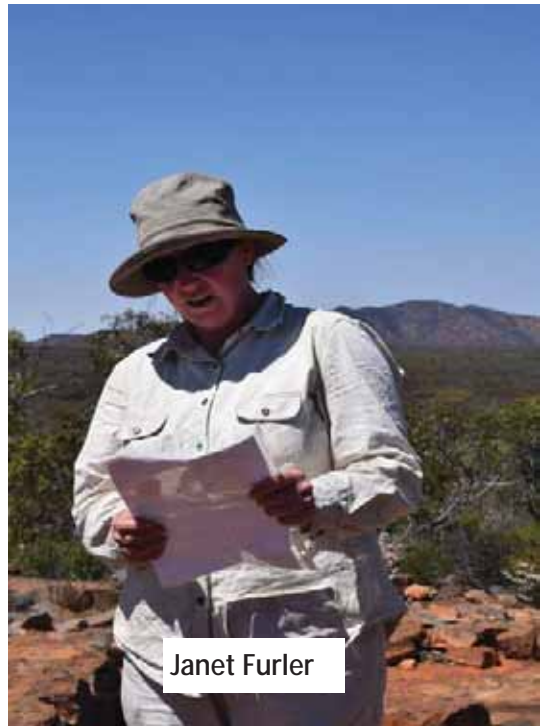
I would like to add my personal apologies at not being with you today, as well as those of several others who wished to join me. The plan to fly a helicopter and ferry a small group of people to join you on the plateau for this celebration has been aborted, at short notice, by the helicopter being withdrawn from Arkaroola. Setting it up took much time and effort, and

an affordable substitute could not be found. Along with other potential flyers, unable to hike up, I am very sad that it has not happened.

Funding cuts and the paucity of grants of all sorts probably means that keeping the project going may face some difficulties, but SEG is dedicated to keeping it going at all reasonable costs, and rate it as a project of high priority.

On behalf of SEG, I send best wishes to all who have ascended to the Gammon Plateau for the celebration, and, again, congratulations to all who have brought the project to its present high class condition. Enjoy the celebration. I hope that any cooling of a celebratory libation does not depend on David West's socks.

**Richard Willing**  
President



Janet Furler



The team on North Tusk Hill

## Expeditioners Who Attended The 26 Year V-GRaSP Celebrations in VGRNP Provide Their Comments

### Nadine Brown

In Oct 2014, a group of 18 people, ranging in age from 15 to 83, undertook a 3 day trek to the Gammon Plateau to celebrate 26 years of rainfall recording in the National Park. Thirteen past and present SEG members attended the walk from Arcoona campground at the western end of the Park to Vandenberg base camp 9kms upstream along Arcoona Creek. From here, the gauging station on the Plateau (the highest automatic rain gauge in the State) can be accessed via a steep climb up North Tusk Hill. Being a scientific group it presented only a small challenge for one of the members to devise an ingenious method of keeping bottles of champagne cold for two days in back packs in the heat to celebrate the occasion!

SEG maintains 8 pluviometers in the Flinders Ranges, 6 of which are in the VGRNP. In 1988, some of the founding members were puzzled by the irregularity of rainfall in the area and sought to establish a method to record rainfall in the Ranges which they assumed to be different to that of the surrounding area. The group was initially set up to encourage young people (16-25 year olds) with a scientific background, to participate in biological surveys. Chris Wright is the organiser and driving force of this group, and has been since its inception. He recalls that when monitoring first began in 1988, it was necessary to check the gauges five times a year in order to change the batteries and access data. With improved technology over the years, this has been reduced to once annually. Five of the six gauges in Arcoona Creek are now automatic, and data transmitted from the Plateau can be retrieved immediately by the Bureau of Meteorology in Adelaide.

In addition to monitoring rainfall, SEG has also set up 6 vegetation photo-point sites that are visited twice yearly by volunteers. The group has, over the years, expanded their

involvement in the area to include monitoring vegetation change through photo-points and exclosures, monitoring Yellow-footed rock wallaby populations as well as aquatic biology, carrying out fox baiting and establishing pit-fall traps to monitor native animals (these traps have since been removed as trapped animal numbers were quite low). All materials needed for these projects have been carried in on foot (apart from one day's use of a helicopter donated by Santos).



John Waterhouse, David West and Chris Wright

As an overall observation, all members commented that there has been a huge improvement in the vegetation cover in the area with the reduction of goat and rabbit numbers. Certainly on the weekend of the walk the vegetation was stunning. *Calytrix tetragona* was flowering in profusion on North Tusk hill, along with Sennas, Halganias, various daisies, Greenhood orchids, Dianellas and other lilies, just to mention a few.

SEG is an amazing group of dedicated volunteers who have maintained enthusiasm for three decades. When they began in 1988, it was thought that if they could continue their involvement in this project for ten years then they would be happy! 26 years on, they certainly have cause to celebrate.

### Simon Sherriff

This was only my second field trip for the V-GRaSP project, and I only became actively involved 3 years ago. So relative to most trekkers on this trip, I had not really earned the right to relax through the first project trip in 26 years that did not involve lugging of star droppers, concrete and gadgetry... but what the hell! I love the Gammons! There is something special to me about the big sky, the dry atmosphere, the rugged landscape, the low impact camping, sweating through a hard days walk, cooling down on ancient rock slabs in shady creek-side caves, surviving on turbid water from life-giving waterholes, and talking leisurely around an electric candle as camp stoves clink and bubble. I was inspired by all those around me, but standing out was the endurance of John Love and Graham Oats, the dry ice mastery of David West and the selfless and tireless leadership of Chris Wright. I will be back. Next time, I might even earn my keep and carry more than chilled champagne up to the Plateau. Amazing



project. Amazing people. Amazing persistence. If I can still drag myself up to North Tusk at 80 years of age, I will be a very happy man.

#### David West

Big blue sky overhead, glass of chilled sparkling white in my hand, warmth radiating back from the orange rocks of the Plateau around me, I listened to the words of John Waterhouse, Chris Wright and Richard Willing (as read by Janet Furler). As they acknowledged the amazing efforts of all those who have contributed to keeping this monitoring project running for more than a quarter of a century, I reflected on how we could never have imagined it running for so long, nor growing so extensive, when we first lugged gear up the slopes of North Tusk Hill in July 1988 in preparation for the installation of the original Plateau pluviometer.

My mind drifted to memories of previous visits to North Tusk Hill and the Plateau, and to the people I'd shared those visits with - especially those who couldn't be there for this celebration.

I'm sure that the vegetation has changed since the project began all those years ago - the slopes of North Tusk Hill and the top of the Plateau looked lusher, and denser (not to mention more colourful courtesy of the flowering *Senna*, *Calytrix*, and other assorted shrubs) - and I sensed some changes in species composition, although this might just be an

artefact of my optimistic imagination.

Inspired by the efforts of John Love and Graeme Oats on this trip, and memories of Warren Bonython's ascent for the 10 year celebration in 1988, I see no reason why I couldn't be part of the 50th year celebrations for this project in 2038 ... although I might have to delegate the responsibility for chilling the sparkling white by then!

#### Jeff Smith

It was great to be celebrating with SEG on this special occasion after such a long absence. It was really heartening to see how much work is continuing to be done by Chris Wright and the rest of the team. I personally enjoyed reacquainting with some old colleagues and meeting new friends as well as sharing the adventure with seasoned scientists and the next generation of upcoming scientists.....

My thirteen year old daughter was not even born the last time I was involved in the V-Grasp project. I had no doubt Amelia was physically capable of completing the walk (even with the heat and limited water) but I knew it would build her character in ways we can only guess about in the future. I hope her participation will encourage more young people to engage in similar expeditions.

Working for the BoM, I know the value of this long term rainfall data. Collecting this information on SEG trips is made all the more interesting because of the knowledgeable



Working on the antenna



Plateau pluviometer and celebratory libations

volunteers that freely and passionately share their expertise.

I look forward to the next opportunity to contribute to this important work and interact with another diverse group of science based adventurers.

#### **Amelia Smith**

While the Gammon Ranges hike was tiring and I felt like I needed a shower the whole way, it was an educational and inspirational trip. It taught me to persist and to see things from a different perspective. With the help of fellow hikers, I learned about the six hundred million year old rocks and the native flora and fauna. Even though my pack was heavy, I really enjoyed the walk and being able to experience the great views from the Plateau and from the top of North Tusk Hill.

#### **Graeme Oats.**

Several times over the weekend (3-7 October 2014) at SEG's 26 years celebration of V-GRaSP I mentioned that I thought the last time that I carried an overnight backpack was



John Love

during the 1998 – the 10 year celebration of V-GRaSP, however on perusing the “25 Years of SEGments” CD prepared by Alun Thomas I found that I was in the Gammons in July 1999 on a SEG Gammons Crossover Walk. But, the last time that I drank champagne to the success of V-GRaSP was in 1998 – that’s 16 long years between drinks. Much has changed, personally of course I’m 16 years older, less agile, not wiser, but still a glutton for punishment, North Tusk Hill is now a lot steeper and longer, both ways – up and down. All along the Arcoona Creek, the slopes of North Tusk Hill and on the Plateau the wildflowers were in abundance, the vegetation seemed to be more lush, healthy and denser than I recall from the 1998 visit. The camp site at the base of North Tusk has been moved 10 minutes further up the Arcoona Creek, a wise move. Even after vacating the first site some years ago there is still evidence ever so slightly of human activity. The current campsite is much larger in that walkers have a longer stretch of level and higher ground under the shade of plenty



North Tusk Hill



of pines. The “kitchen” area of course does show some wear and tear as is to be expected. Our party of 18 on this trip were spread some 100m along the creek and not overcrowded.

The replacement of the campsite does however mean a shorter but steeper initial climb around a rock ledge up North Tusk Hill, whereas my recollection from the old campsite is that we took a longer route up a more open and gentler gradient through Spinifex Triodia, but that just might be that my memory has faded somewhat.

North Tusk summit was a busy place as we all gathered there to reminisce on past conquests. Many photos were taken both of the splendid view out west to Mt Serle bathed in the spring morning sunshine and of each other, especially the three musketeers who had been on the journey in 1988, Chris Wright, John Waterhouse and David West – the 3 W’s in various poses.

It was a pleasure to walk down hill albeit too short before we plunged into the thick head high Melaleuca scrub then gently rising to the Plateau which is more open with broad areas of Mallee, before arriving at the Plateau Pluviometer which has been sitting there doing its work tirelessly (but probably not always carrying out its functions correctly) for 26 years.

Some wandered around the “Pluvio”, looking at it for the first time, some dropping their packs and resting while others

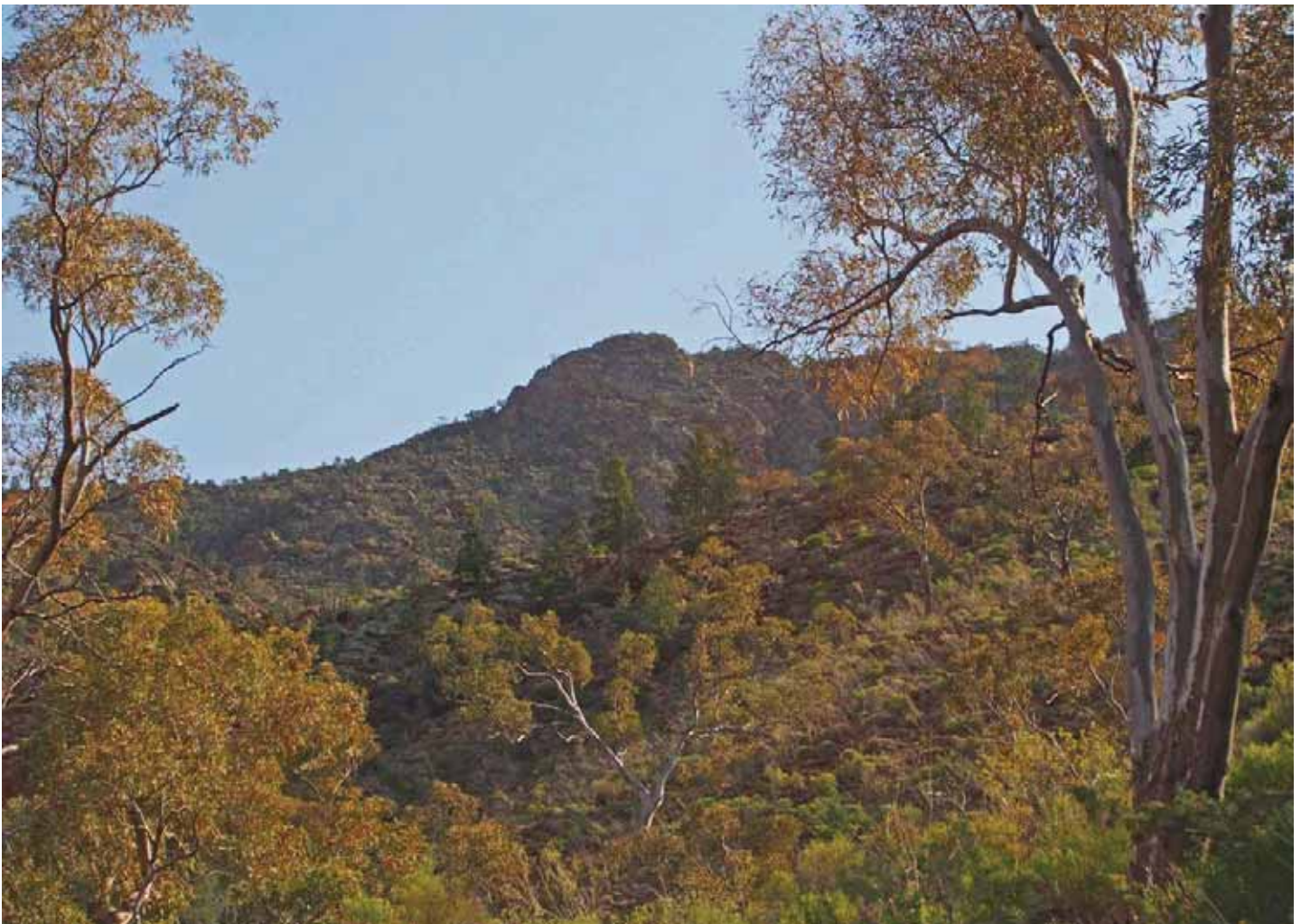
scrambled further to the west to the slightly higher rise where the antenna is located to check it out and to affix a heat shield manufactured by John Love.

The view east across the Plateau towards Mt McKinley has always been one that I would never forget. I reminisced about the times that I walked in the Gammons with the Adelaide Bush Walkers during the 1980’s through those eastern gorges, the SEG cross over walks and in 1996 when Warren Bonython, Terry Kreig, Joc Schmiechen and I retraced Warren’s 1947 achievement of crossing the Gammons from south to north.

I cannot finish this memoir without some comment on walker’s attire – I’ve walked in many countries over 3 decades, but never, never have I seen a walker in a leather kilt! Perhaps I’ve lived a too sheltered life?

They say “never say never” but, whilst my mind says I can do it, the body seems to have other ideas. I said a quiet goodbye to the Pluvio, and to keep up the good work.

Thanks to Graham Blair (who unfortunately could not be there to celebrate) for his efforts in setting up the Campbell Loggers a special thanks to Chris Wright for his untiring efforts over the last 26 years and in particular for the organisation of the most memorable weekend in the Gammons.



Arcoona Bluff

**SCIENTIFIC EXPEDITION GROUP**  
**MINNAWARRA BIODIVERSITY**  
**SURVEY SPRING 2014 Janet Furler**

We have completed another successful survey of our scrub, held at the beginning of the school holidays. There was a large and enthusiastic contingent of volunteers, some just for the day and some camping for the whole time. The young adult bunch were pleased to burst out of the caravan and take over the new shed, complete with Xbox and fire place.

With warmer weather at the start we caught a range of species of skinks. There were fewer mammals than the previous autumn but this has been a trend for the last few years. We did erect the harp trap but the cool nights, and probably our lack of thinking like bats, meant no captures.

**Weather during the Survey**

Date	Temperature range ( °C)	Wind direction and speed	Rainfall
27 September	16 – 24	NW 15-43	Nil
28 September	13 – 23	NW – SW 50	Nil
29 September	13 – 22	W 20 k	Nil
30 September	11 – 18,	NW – SW 90 – 30	6mm
1 October	8 – 14	SW 15 k	Nil

All 8 sites caught skinks (range 1-4), with White's Skink (*Liopholis whitii*) being the least common species. Catching Three Toed Skinks (*Hemiergis decresiensis*) next to Garden Skinks (*Lampropholis guichenoti*) allowed us to show the difference between the ones that run on top of the leaf litter and the ones that burrow underneath.

Mammal captures at each site ranged from 4 to 24 individuals, with Site 5 leading the count, site 9 having the least and the other six ranging from 10 to 15. Site 1, which has had the most captures until recently, had 13. We caught a total of 100 individual mammals and 21 frogs and skinks, with one Red Bellied Black Snake



Three Toed Skink (*Hemiergis decresiensis*)



Belly of Three Toed Skink (*Hemiergis decresiensis*)

(*Pseudechis porphyriacus*) seen and left in peace. Counting all the visits of all the animals we handled 232 bobs over the 5 days. There were no feral rats or house mice this time.



I calculated the difference in visits to traps per individual for the 3 mammal species. The *Antechinus* averaged 2.8 visits, the bush rats (*Rattus fuscipes*) averaged 2 visits and the swamp rats (*Rattus lutreolus*) averaged 1.8 visits. I guess the *Antechinus* are more desperate or opportunistic, or they just like the peanut paste better. Almost 2/3 of the *Antechinus* (14 of 23) were recaptures from previous surveys, compared to just less than 1/3 of the *Rattus* species (25 of 77). Maybe another indication of a fondness for peanut paste!

Brian and Jo Blaylock kindly did the bird survey a fortnight later.

With up to 33 people for some days we were kept busy, but everyone was interested and keen to help. Just over the 5 days we added up 567 volunteer hours. Thank you to all of you for coming, helping, learning and enjoying our scrub.

P.S. I have checked the poplar site (cleared in 2012 with a huge effort from SEGgies). Although I can't guarantee a complete absence of poplars hiding in the bracken, there were none visible in the low shrubbery or the paddock. Well done team!



Maddy at Work



Group Photo at Minnowarra



# Nangwarry 2014 "Through Fresh Eyes"

Felicity Small

I am a TAFE student currently studying a Diploma of Library Studies. I have had the privilege to join SEG's Nangwarry expedition held in November, and I was asked if I could write an article to share my experiences of the expedition.

It was my first week back at work in an outdoors equipment store since my wedding, and I was feeling slightly sad at getting back to the same old, same old when a well-spoken lady with bright red lipstick walked into the store.

As I was talking to Annette about the items she was buying I discovered that they were for the Scientific Expedition Group's Nangwarry trip. Annette told me about her work at the Museum and how it meshed in with SEG, and she kindly wrote down the details of how to be a part of the Nangwarry trip and went on her way. Once I got home I spoke to my husband Joel about the opportunity. I realised that I could only go for four days, although Joel was encouraging me to go for the entire trip. After talking to Trent and Stuart via email I found myself with my bag packed, and realised that during the trip I would be a poster child for my workplace (as my kit was purchased from there).

**Sunday 9/11/2014.** I had difficulty sleeping on Saturday night as it occurred to me that I would be spending four days with a group of people that I didn't know, but when I recalled SEG's permission forms which mentioned "in case you are eaten by a bunyip or something", I took comfort that they had to be a good group. Once I got to Frewville Foodland it was a brief hi there and off we went. This was my first long drive on my own, and so being in a convoy was very comforting.

When we stopped at Tailem Bend, Willalooka and Penola along the way before reaching the forest, I took out my camera and started snapping away. I initially kept my distance and observed the group. I found that these people are not just scientist and volunteers, they are old friends with a passion for discovery and the occasional burst of cheeky behaviour. As I have been a part of volunteer groups of a similar nature, it was easy to become more comfortable and just to be myself; and they are very welcoming to new people.

Once we reached Nangwarry Native Forest Reserve we found the place where we were to set up camp. The SEG website was not joking when it was mentioned that we would be camping in a beautiful sylvan glade; plenty of space and many beautiful trees. I camped under the cork tree which was amazingly beautiful to look at, and this was also the first time that I got to see most of the unusual plant species that are in the arboretum



*The cork tree from my tent in the arboretum base camp*

We all got to work setting up our tents. Once our own tents were up we got to work on the communal kitchen tent and the science tent. These structures are not like the tents that I sell, but took me back to the tents that I used as a kid with my family in the Flinders Rangers. It takes everyone on hand to get them set up; plenty of advice on knot tying, Garry and Bill's ingenuity to feed the guide wires through the extension so that nobody trips on the lines and Trent with a hammer.

During this time I got to find out about the different team that would be running around the forest for the next two weeks: The mammal/macropod team - A group who would be digging trenches, fencing, putting in pits and setting traps around the pit lines to catch various creatures and insects. The ant/invertebrate team: - Annette and Nick would partner up with someone and would set small ethanol filled traps and check on them twice a day to see what they had caught. Nick would be looking for tell-tale holes in the soil and would be digging up trapdoor and wolf spiders. The bird watching team - led by several people called Brian, would go out early in the morning and again later in the afternoon. The Veg Team - a group of botanists would mark out an area within one of the blocks and identify what plant species were there and the percentages or numbers of those plant species in that area, to get accurate statistical data that could then be compared over each site.

This particular reserve is unique from many others as the area has had controlled burns. In some blocks it hasn't been burnt for possibly ninety years. This gave the SEG team a chance to compare plant and animal life block by block to see what thrived and what didn't.

Once the tents were set up the scientists were desperate to start looking at the blocks. This was when safety was discussed. You need radios out there. Once you start



driving around the blocks it all looks the same. When you are far enough into one of the blocks it is very easy to get disorientated and lost. This is the first time I was to ever walk off the trail and I have to admit it was an intimidating thought (particularly when the bracken is up to your neck).



*First look at the blocks for the trapping sites*

I couldn't help but think to myself this is why I tell hikers to wear boots! I now also have a far better appreciation of leg gators.

Whilst we were trying to mark down locations on the maps that we had been given, we found out that the system that was going to be used had changed, making it a bit more difficult to navigate our way around the blocks. However we did manage with a block number and site number. If we could get a precise GSP location it was even better.

Once we had distributed the equipment/traps to be set the next day, and had got an idea about what the terrain was like we headed back to base camp for tea. During the evening there would be a meeting to discuss who would go with each team, and which blocks the teams would work in. Since the mammal team kept saying I was young blood, I put my hand up to help them set up the traps.

**Monday 10/11/2014** The plan was to leave at 8:30am. I think most of us were up at 6:00.... except me as I stayed in my sleeping bag for a bit longer than I should have. Once I was up I had no idea how full-on the day would be.

I headed out with the mammal team to our first stop where I successfully botched up the markings they were making to measure out the distance of the pit-line for trenching. John and I were given shovels to start clearing a path for a fence line. I got the instruction wrong and started to dig a trench with the shovel but once I was quickly shown what to do I was fine, but felt a little goofy. Erecting the pit-lines doesn't sound too full-on in theory, as you scrape away about 60 meter of ground cover to expose the soil, and then dig a small diameter, but fairly deep hole to insert the cylindrical trap/pit (6 of them evenly spaced). Using various tools you dig a line in the soil deep enough to anchor a wire

fence, so that animals stopped by the fence will run along one side of it and then fall into a pit. In practice the work is a lot more physically intensive than I imagined it would be. You know that you need to improve your fitness when the eighty six year old is leaving you in his dust clearing the path with a shovel.

The initial trenches were taking longer than expected to clear as the scrub was so thick, so by lunch time we had all the other teams helping us to clear the paths and to put the fences into place.



*Setting up the fence along the trench*

I got the chance with Lorraine to set up Elliott traps which are used to increase the chance of small mammal captures. You learn how to set them up easily enough once you finger gets caught the first time.

Once we had finished the trenches for the day Jill, Stuart and I went back to check on the traps we had set up at the beginning of the day. Fortunately we had managed to catch 3 different types of skinks which would be identified later that night in the science tent

While we were checking the traps Stuart discussed the ethics around specimen collecting and what they do if they have to keep a specimen. I noticed that the animals that were caught were treated with the highest respect.

**Tuesday 11/11/2014** Bird watching first thing in the morning. I didn't know how I would go considering I had never done this before. Helen was very nice and let me borrow her binoculars and bird identification book for the morning, although in the end I used my camera, and it ended up that Brian would point

at something and I would take photos. Brian had extensive knowledge on the history of the area and was searching for signs of early tree felling and other human and animal interference within the blocks while we were out.

We were successful at sighting a family of red-tailed black cockatoos, although the birds were just far away enough that the photos I took were a bit grainy when close up. There were plenty of grey shrike thrushes around for me to chase. Other species we sighted were grey fan tails and treecreepers.

As the morning got later and the birds got harder to spot we discovered a macropod skull, ribs and vertebra which were placed in my pockets until we could get them to the car. This was when we discovered markings on a tree in a v-shape. Brian explained that they were from sugar gliders (*Petaurus breviceps*) feeding on the tree sap of an acacia tree. We also came across tree stumps that were cut in a diagonal motion indicating tree felling around 1920; took note of termite activity; and scratch marks on trees. By this time it was worth heading back to camp for lunch.



*Acacia Tree with sugar glider chew marks*

During lunch the discussion was held as to whether we could remove a road-kill wallaby's head for skull collection. In most cases this would upset people. Although my dad used to talk about his Roseworthy days over a roast lamb dinner so this didn't faze me.

After lunch the mammal team wanted me back but I snuck off with Nick to search for spiders. We found several trapdoor holes although only acquired one female trapdoor and a wolf spider with egg sac. Nick gave me the chance to catch the wolf spider and was very patient while I gingerly tried to put it in the specimen jar.

Once I had caught the spider we heard a 4WD pull up to the block with a very excited Garry yelling that he had caught a tiger snake, and then produce a lizard (I think we were all happier to see a lizard). Nick and Bill got their cameras and started taking photos as they didn't know exactly what species Garry had caught.

After dinner I got the chance to speak to Bill and Garry about photography and comparing our cameras, and then Annett asked if I wanted to see what she was doing with the ants she had caught. While looking at the varied collection I got the chance to find out how the specimens get preserved and had the chance of seeing them in detail through her microscope. They are fascinating and terrifying to look at.

**Wednesday 12/11/2014** My last day and I only had until midday to help with something, and so I went with the only team I hadn't been with yet -the veg team, a group of botanists who were identifying plant species in different blocks of the forest. I took my camera as I had so far found it useful.

I quickly found that I was pretty useless in trying to identify different species of grasses so when a species was located I would take photos. This is when I also discovered that trying to take a photo of grass in amongst lots of other grasses is tricky, but I managed to get some good shots.



*Lomandra juncea*

Once I got back to the base camp I packed my car and had lunch with the gang before I left. I didn't want to leave so early but it was all the time that I had before I had to go back to work. I said my goodbyes and jumped into my car only to have it blocked by the big water truck. As I looked up into the cabin all I could see were four smiling faces looking at me. The guys jumped out of the truck and Trent demanded that I wasn't leaving without saying goodbye to them.

This was an amazing trip to go on. Truly an adventure. I pushed my boundaries and took a chance on a group of people that I found to be funny, quirky and passionate about their work. I learned so much about SEG and myself. I'm looking forward to the next expedition that I can make it to.



# SCIENTIFIC EXPEDITION GROUP INC.

The Scientific Expedition Group (SEG) came into being at a public meeting on 21<sup>st</sup> August 1984. Members receive regular information on SEG activities and expeditions.

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.

## APPLICATION FOR MEMBERSHIP AND MEMBERSHIP RENEWAL for 2015

### SUBSCRIPTIONS rates

Adult member - - - - -	\$30.00
Concession cards/ student - - - - -	\$15.00
Family membership - - - - -	\$35.00
Corporate membership - - - - -	\$35.00

Name. ....

Address .....

.....

Telephone (H) ..... (W) .....

E-mail .....

Details of scientific, cultural, and adventuring or other relevant skill or interests you may be prepared to share with the group:

.....

.....

Send a cheque ( Scientific Expedition Group Inc.) with a photocopy of this page to:

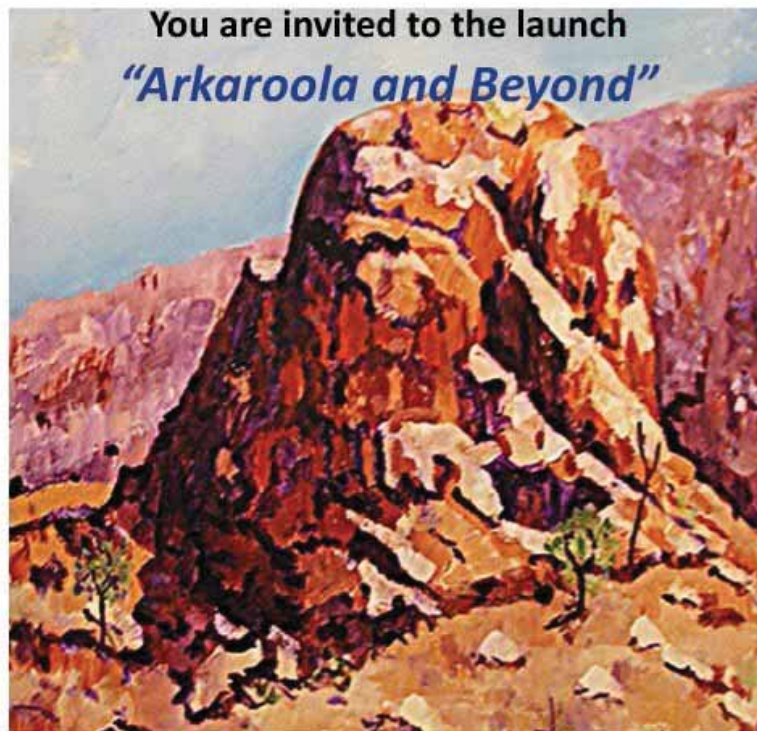
The Secretary  
Scientific Expedition Group Inc.  
P.O. Box 501  
Unley S.A. 5061

**FRIEND OF VULKATHUNHA-GAMMON RANGES  
NATIONAL PARK  
EXPRESSION OF INTEREST**

In 2001 the Friends of Gammon Ranges National Park was set up, but after a year or so interest faded and the group has been in limbo ever since. Recently the Friends received a substantial bequest and the group is hoping to re-ignite interest so that the bequest can be wisely used in the Park.

You are invited to attend a public meeting in Adelaide in February 2015 at a date and venue to be confirmed. If you are interested please record your expression of interest by contacting me by email prior to 31<sup>st</sup> January 2015.

Graeme Oats – [gdoats@bigpond.net.au](mailto:gdoats@bigpond.net.au)



a solo exhibition by

***Andrew Barr***

at Gallery One, 1 Torrens Street, Mitcham SA

February 6 at 7:00 pm

To be opened by

**Dr Richard Willing, President :  
Scientific Expedition Group**