



# SEGments

***Journal of the Scientific Expedition Group***  
***Volume 27 Number 1***





# SEGments



## Scientific Expedition Group Inc.

Volume 27 Number 1, June 2011.

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# Editorial: The International Year of Forests

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This year, 2011, is *The International Year of Forests*, designated by the UN to highlight the need for sustainable management, conservation and sustainable development of our world's forests.

## What is a forest?

The OED definition of a forest is a large tract of land covered with trees and undergrowth. This describes many different plant communities, which cover approximately 30% of the total world land area, down from about 50% in past centuries. Forests also contain roughly 90% of the world terrestrial biodiversity. Primary Industries Research South Australia (PIRSA) use the term 'forest' for areas where trees grow more than two metres tall and shade more than 20% of the ground. This covers the areas of SA which aren't as good at growing trees, as well as the areas with up to 100% cover.

## Why look after forests?

Forests have value within their boundaries. There is the intrinsic value of biodiversity, which is not always recognised – that we don't have the right to use everything just because it is there. Supporting this requires the preservation of the flora, fauna and their interactions, systems which are practically impossible to recreate fully, but relatively easy to sustain. There are the land-preserving aspects of a covered landscape, such as mitigation of erosion by wind and water, control of excess nutrient load leaching through a system.

Forests also have value outside their boundaries. In the immediate vicinity of forests there are documented benefits to agricultural pursuits. Control of pest insect species is due to birds and bats foraging outside the forest borders. Windbreak effects reduce soil erosion, but also increase stock comfort and therefore productivity. On a larger scale, forest destruction is contributing to increasing atmospheric carbon and therefore climate change, as well as extreme social disruption for indigenous populations who traditionally rely on intact forests to support their whole way of life. Even for those of us who are firmly ensconced in a developed culture, the opportunity to work, sit or contemplate in a natural space is reviving for the mind and the soul.

## Keep hugging trees!

Who knows what understanding may arise from studying forest communities. For instance, the recent SA Museum search at Minnowarra for a rare beetle as part of documenting the genetics of a beetle family may seem

pointless but SO many things have come from nonfinancially motivated basic research.

I would be confident that the readers of SEGments are supporting forests in many and varied ways, however it is worth celebrating forests in any way we can.

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## Janet Furler

The first two articles by Janet Furler about the Minnowarra Biodiversity Survey is a celebration of the last ten years that this valuable survey has been conducted by a band of young volunteers under the mentorship of Janet Furler and Richard Willing.

The Vulkathunha Gammon Ranges Scientific Project has completed another expedition during the Easter weekend. This is another project that has a long history of accumulating valuable data about vegetation, water flow and yellow footed rock wallaby monitoring.

Robert Henzell has written an article about the relationship between the Mulga regeneration and impact of feral rabbits and goats in the area.

There is a pending SEG expedition in 2012 to the Nullabor plains. This is to follow up on a baseline survey conducted in 1984 by the SA government. To facilitate the planning of this expedition, a small group from SEG, DENR and AWRM conducted a reconnaissance trip to the areas to consider camp management and logistics. The article was written by Trent Porter.

To round off the edition we have valuable three book reviews by SEG members.

I would like to thank Janet Furler for her guest editorial about the *The International Year of the Forests* and the continuing work on the Minnowarra Biodiversity area.

## Andrew Barr

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# Minnowarra Biodiversity Project – 10 Years

## Janet Furler

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**Minnowarra forest type**

The origins of the Minnowarra Biodiversity Project (MBP) lie in the convergence of the thought that it would be good to have an easily accessible Project for members to participate in (as an alternative to the remote annual and GRASP expeditions), and the availability of the Chairman's recently fenced scrub one hour south of Adelaide. This led to the establishment of the Project, using recognized methodology, with eight sites in different habitats across the property, collecting data each spring and autumn. The original idea was to document changes in fauna activity as time passed following exclusion of stock. The first survey was in April 2001.

### **So, what have we achieved in this time?**

We have collected a large body of data which differs from many biological surveys due to repeated sampling of the same areas. Because of the ear marking system of identifying individual animals we are getting an indication of longevity of the three native mammal species recorded. (For species details see the Autumn 2011 report). As rats are recaptured up to 6 years after first handling we can conclude that they live longer than many reference sources say. We can compare populations from the different habitats, and relate changes between and within sites and/or species to seasonal and climatic variations. While doing this we have exposed hundreds of people of all ages to the local fauna, which is usually not visible or labelled feral if seen, and to the scientific process of conducting a biodiversity survey. This is something that is

in the SEG aims but is not achievable on the other projects due to time and accessibility constraints. The ability to bring children for one morning has proved very popular with grandparents.

### **What have we not achieved?**

Whilst we have not run the data through statistical analyses, it seems that the mammal populations are responding to changes in weather to a larger degree than to length of time from stock being excluded. This may be due to some of the areas being fenced a couple of years before the surveys started, or that the numbers vary widely between good and drought years. Even though we may not be able to prove our original hypothesis, we have an indication of the resilience of native habitats if they are supported.

### **Keeping on**

The Project is still running strongly, with the April 2011 survey completed and reported in this issue. We are continuing to refine our methods, adding things like a harp trap for bat catching. (Mind you, no-one told the bats. We didn't catch any!) We were also accepted as a Bush For Life site last year. This is very good news, as they are happy to weed anywhere, including helping maintain the 8 survey sites.

Overall, I feel we have fantastic scrub which is necessary to preserve, fascinating to investigate and worth sharing with visitors. The Project is a great way to achieve all these aims.

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# Minnawarra Biodiversity Project - April 2011

## Janet Furler

The autumn survey has been completed, with a large participation rate from both people and creatures. The abundance of animals is due in large part to the extraordinary cool and moist summer which has seen our pasture stay green throughout. The abundance of people is thanks to word of mouth, repeat visitors and a good product!

44 people spent more than 400 hours helping set up, monitor and pack up the survey. A quick count revealed we had sprayed over 1,100 feet going in and out of the sites. The weather was fine and cool to mild during the survey period, with light rain on the last day. Overnight minimum range was 10 – 15°, daily maxima were 15 – 22°.



**Figure 1: Janet Furler checking *Antechinus* ear holes**

136 mammals were caught, 13 recaptured from previous surveys, with 61 multiple captures. This is a larger number of animals than usual, with a smaller number of recaptures. It seems the summer has provided a good environment for breeding.

35 skinks and 8 frogs were caught. Most sites recorded 0 – 6 skinks, the exception being site 4 with 19 common skinks (*Lampropholis guichenoti*).

As an indication of the variations we are seeing from year to year Site 7 yielded 34 individuals (15 marsupial mice (*Antechinus flavipes*), 5 bush rats (*Rattus fuscipes*), 3 swamp rats (*Rattus lutreolus*), 8 feral mice (*Mus*



**Figure 2: *Pseudomoia entrecasteauxii***

*musculus*), 3 common garden skinks (*Lampropholis guichenoti*)). Over the whole of the spring survey in drought year 2007 we caught 1 garden skink! This year it yielded the same number of mammals as our usually most prolific swamp site (site 1).

Within this survey the number of animals caught at different sites ranged from 13 to 50. Mammal numbers ranged from 8 to 31. These variations relate to habitat, as do the variations in species density within these totals.

We recently purchased a harp trap for catching bats, pictured. It was set but unfortunately the bats didn't play along.

Once again we have collected important information about our scrub, and, equally importantly, shown a range of people what we have and how we record it. Thank you all for your assistance and enthusiasm. We hope to see you all again.



**Figure 3: The Harp Trap (Photo: A Ruler)**

# VGrasp – Easter 2011

## Garry and Michelle Trethewey

This was a reasonably large trip as there was plenty of work to be done. We had thirteen Expeditioners - Chris Wright, Graham Blair, Ian Sinclair Janet and Phil Davill, Bob Henzell, Chris and Jonathan Kemp, John Love, Doug McMurray, Claire Thomas and Garry and Michelle Trethewey.

Throughout the trip, groups formed and reformed to allow for the many and varied tasks, along the lines of Chris's initial briefing a fortnight before. And although we had allowed extra days to complete them the extra time wasn't needed allowing a leisurely but early return to Adelaide.

. As well as the regular pluvio and stream gauge servicing, Yellow Foot Rock Wallaby monitoring, waterbug collecting and photo points, one of the pluvios was to receive a major upgrade and our water security was to be improved with a new cache. Thus there was quite a bit of carrying of equipment and material up the creek and up the hill. Bob Henzell and John Love spent most time on vegetation, in particular, Mulga mapping (see Bob's report). Christine Arnold and a friend also turned up to do some Yellow Foot Rock Wallaby work a few kilometres away, using John Love's car.

For our part, (Garry & Michelle), day one was to carry 20kg each up the creek a bit past Vandenberg. On the way, we did the usual tasks at Wild Ass Waterhole, ie photographed it, collected its invertebrates, replenished supplies, and retrieved equipment from the cache for use upstream.

The creek was flowing, vegetation was green and lush, making the usually well worn paths a bit of a challenge. Vandenberg was full of fast growing Goodia and rushes, and even the Dodonaeas were looking happier. Then further up to SAMBOT Waterhole, again to photograph & sample its wildlife.

Here Michelle attracted urgent attention as she saw a Yellow Faced Whip Snake, *Demansia psammophis*. The poor thing was frozen with fear, but survived the ordeal. More interesting was that on the return journey around an hour later, another small snake was found only a hand's breadth from the same spot, probably the same species, but being only 1/3 the length, definitely not the same snake. The literature indicates that they tend to congregate and frequent the same spots over time.



Figure 1: Working on the pluvio at Maynards Well on the way home – photograph by Doug McMurray



Back to Exclosures Camp fairly late, fed, bedded, and up early next morning, to move camp up the creek. Arriving there, we decided not to camp on the new growth of Vandenberg, but to go a bit further up the creek to another flat and more bare spot. Quickly setting up camp, we retrieved the 20kg of gear we had dumped the day before and started a long slow grind up the hill toward the plateau, carrying up our share of the equipment that would be needed up there for the maintenance. Logistics dictated that on the way back we did as many of the photo points as possible, starting from the furthest and working back. Another long day, notable for the extra thick growth on the plateau and the extraordinary number of great big Golden Orb Weavers, sometimes so thick that their webs touched each other. Pushing through and around the melaleuca uncinata (broom bush) and the thick mess of webs was very tiring.

Next day, we finished doing the remaining photo points, then set up a new water cache, with more durable containers, near Grandfield Waterhole, currently clear and beautiful and full, but often dry. Jobs done, we spent an enjoyable two hours watching waterbugs, metamorphosing froglets, and dozing in the sun.

The next day, we packed up, headed down the creek to our cars, and all except John & Bob drove out to either of Mocatoona Pluvio, or to finish the Station Pluvios. The road through Angepena to Mocatoona was gorgeous, along creeks lined with River Red Gums, through low hills of red shale with Callitris Pine woodlands. We saw a dozen of the biggest River Red Gums I've ever seen, not in a creek, but along an underground watercourse, finishing with a spring bubbling out from between the roots. After Graham did what he had to at the pluvio, we headed to Maynard's Well via a "shortcut". Hmm, perhaps as the crow might fly, but certainly not as the pick and shovel must fix the track. And not so pretty.

Then home for us, the others staying at Maynards Well shearers's quarters, satisfied after another successful and happy trip.

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**Figure 2: Maintenance at the Plateau pluvio – photograph by Doug McMurray**

# Mulga regeneration and exotic herbivores in the Gammons

Robert Henzell

Since their construction in 1977, the fenced herbivore exclosures at Arcoona Creek in the Vulkathunha-Gammon Ranges National Park have allowed us partially to separate the effects of different herbivores on the regeneration of mulga, *Acacia aneura*. Mulga is a widespread and relatively common tree in the arid zone but, especially in the southern parts of its range in South Australia, its viability is threatened by a lack of regeneration. The age structure of many populations is heavily weighted towards old individuals, and when they die the species will virtually disappear from the local area.

The early years of the project revealed that the main threat faced by regenerating mulga at Arcoona Creek was rabbits, not native herbivores or the more popular suspect, feral goats. The massive germination event that followed the deluge of February 1979 (when >120mm of rain fell over five days) was almost entirely eliminated by rabbits: new mulga seedlings survived in any numbers only in areas from which rabbits were excluded. We knew this because we had mapped about 1000 seedlings in March 1979 (a few weeks after the rain) and thus on subsequent visits could follow the fate of known individuals through time.

A similar fate awaited the seedlings that germinated in response to the deluges of January 1984 and March 1989. However, by then the recently-introduced European rabbit flea (a vector of the myxoma virus, which causes myxomatosis in rabbits) had arrived at Arcoona Creek, and the improved transmission of myxomatosis that resulted led to a slightly improved seedling survival rate. Although a few seedlings now survived the rabbits' initial onslaught, the end result was almost as bad, the main difference being it took a year or so longer for the rabbits to kill almost all the seedlings.

At Arcoona Creek a number of heavily-grazed juvenile mulga about 30cm high were present when the exclosures were built in 1977 (see Fig. 1); they probably germinated in the 1950s, when myxomatosis was introduced into Australia and dramatically reduced rabbit numbers. Several wet years at that time, combined with very low rabbit numbers, appear to have allowed a cohort of mulga seedlings to become established. Although we cannot be sure they germinated then, with the benefit of hindsight it is the most likely time. The effectiveness of myxomatosis waned in a few years, rabbit numbers shot up, and

opportunities for further mulga regeneration virtually ended. We now know that young mulga grow very slowly in this environment, and this, combined with the ferocious rabbit grazing apparent in 1977, would account for their low stature and overgrazed appearance when the exclosures were erected. In fact, we did not recognise the chewed off stumps as being mulga when we first mapped the exclosures in 1977 (a dry year, with much of the vegetation heavily grazed), and it was only after they put on new growth following good rains in 1978 that we realised what they were.

This was the background to the construction of several new small exclosures during Expedition Gammon Ranges, the major expedition SEG conducted at Arcoona Creek in 1996. SANTOS generously donated helicopter time and transported fencing and other materials to two new sites near Vandenberg, and SEG expeditioners did the rest. Two new exclosures were erected near the original 1977 exclosures, and four more several kilometres upstream, two at each of two new sites. The new exclosures were designed to answer the question: how low do we have to get rabbit numbers before mulga can regenerate successfully? The idea was to erect some of the new exclosures in areas where there were almost no rabbits and monitor the survival of mulga seedlings. As a bonus, we hoped to monitor the effects of rabbits on mulga seedlings before and after the planned release of the rabbit haemorrhagic disease virus (RHDV) in Australia. This would allow the environmental benefits of RHDV (a new biocontrol agent in Australia) to be evaluated. In the event, RHDV escaped from quarantine in 1995 and reached Arcoona Creek probably in 1996, precluding a pre-release assessment of the effects of rabbits in the new exclosures.

More mulga seedlings germinated in February 1997, and were mapped a few weeks later. Monitoring of their survival led to the startling finding that at the four new upstream sites rabbits at the vanishingly low density of less than one per square kilometre killed 40% of the seedlings in the first six months. The rabbit density was estimated from the amount of dung rabbits excreted at these sites. To put this figure into perspective, I have never seen a rabbit near these exclosures (very rarely, other SEG expeditioners see one), I have no idea where they live (there are no warrens, and no evidence they are living in hollow logs or rock piles), and local land managers have no techniques available to





**Figure 1: Main mulga exclosures in March 1979. Mature mulga (middle left of photo, ringed pale green in coloured version) juvenile mulga (lower left of photo, ringed medium green in the coloured version), and dead Mulga (right of photo, ringed brown in the coloured version)**



**Figure 2: Similar view to Figure 1. Same exclosure in April 2011. Many of the mature mulga present are now dead. The 1979 juveniles are now much larger, a result of effective goat control and beneficial effects of biological control of rabbits resulting from myxomatosis and RHD.**

them to control rabbits at such low densities. The only answer is, therefore, more biological control.

Further small germinations followed in 2000 and 2003, with essentially similar results, although small sample sizes limited confidence in the conclusions that could be drawn.

Seasonal conditions were excellent in 2010 (519mm of rain, about double the annual average) with reasonably heavy summer rainfall. The exclosures were inspected

during SEG's April 2011 monitoring trip to see if any mulga had germinated. No new seedlings were seen at any of the exclosures at the original 1977 site. Almost 80 had germinated during the 2010/11 summer at the upstream sites, nearly all in areas to which rabbits have access: the pegged and unfenced 'experimental control' plots, and the 'goat-proof' plots (which keep goats and euros out but let rabbits in). There were not as many new seedlings as hoped for, and the scanty data from the four upstream exclosures will have to be pooled to

have any hope of doing any stats on the results. The locations of the new seedlings were recorded, and the survivors will be mapped during SEG's next scheduled trip in September/October to see how many have survived.

The paucity of new seedlings in the 'rabbit-proof' plots (from which goats, euros and rabbits are excluded) means that, in order to evaluate the mortality caused by rabbits, seedling mortality in the 'experimental control' and 'goat-proof' plots will have to be compared with mortality in the 'rabbit-proof' plots measured during previous germination events. This is not as scientifically perilous as it seems: the additional seedling mortality caused by rabbits has in the past been much larger than natural mortality, and easily detectable.

Many changes have occurred in the 34 years since the original exclosures were constructed, and some of these can be seen by comparing Figs 1 and 2. Many of the mature mulga evident in Fig. 1 are now dead and not visible in Fig. 2. Many of the mulgas that probably established when myxomatosis was released in the 1950s are now two metres or more high and their growth can be clearly seen by comparing Figs 1 and 2. Most of the 'new' mulgas apparent in Fig. 2 come from this regeneration event. The seedlings that have established since the exclosures were built in 1977 are still nearly all too small to be visible in Fig. 2; most of these are in the 'rabbit-proof' plots.

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# **Scientific Expedition Group INC.**

## **ANNUAL GENERAL MEETING 2011**

**FRIDAY 26 August 2011 At 7.30 p.m.**

**In the Fullarton Park Centre  
Corner of Fullarton Road and Fisher St.**

### **Business will include:**

Reports by the Chairman and the Treasurer

Membership subscriptions

Election of the 2011-2012 Committee

Any other business

Guest Speaker: to be announced

## **Nominations are called for the 2011-2012 Committee**

The present Committee consists of : President Dr Richard L Willing, Chairman Mr Alun Thomas, Vice-Chairman Mrs Michelle Trethewey, Secretary Ms Gina Breen, Treasurer Mr Graeme Oats, Committee members Messrs Trent Porter, Duncan MacKenzie, Bruce Gotch, John Love, Andrew Barr, Graham Hill, Stuart Pillman.

*All members will retire and are eligible for re-election.*

Nominations must be signed by the proposer and the nominee and sent to The Secretary, PO Box 501, Unley 5061, by 29 July 2011.

**Gina Breen**





Sunrise at Colona on the Nullabor

During the SEG 2010 Bimbowrie Expedition, the camp had a visit from Harald Ehmann who put before the committee a proposal for an expedition to the Nullabor region in 2012 as part of a follow up to a baseline survey done in 1984.

This was to be run by the Alinytjara Wilurara (AW) NRM Board in conjunction with the Dept. for Environment and Natural Resources (DENR) over a

period of two weeks in March/April 2012 using trapping sites of the previous survey and additionally to use some new metrics (yet to be decided upon) to measure climate change effects on this relatively pristine environment.

SEG was invited to participate in a logistics, site preparation and camp management role and the invitation was accepted. I

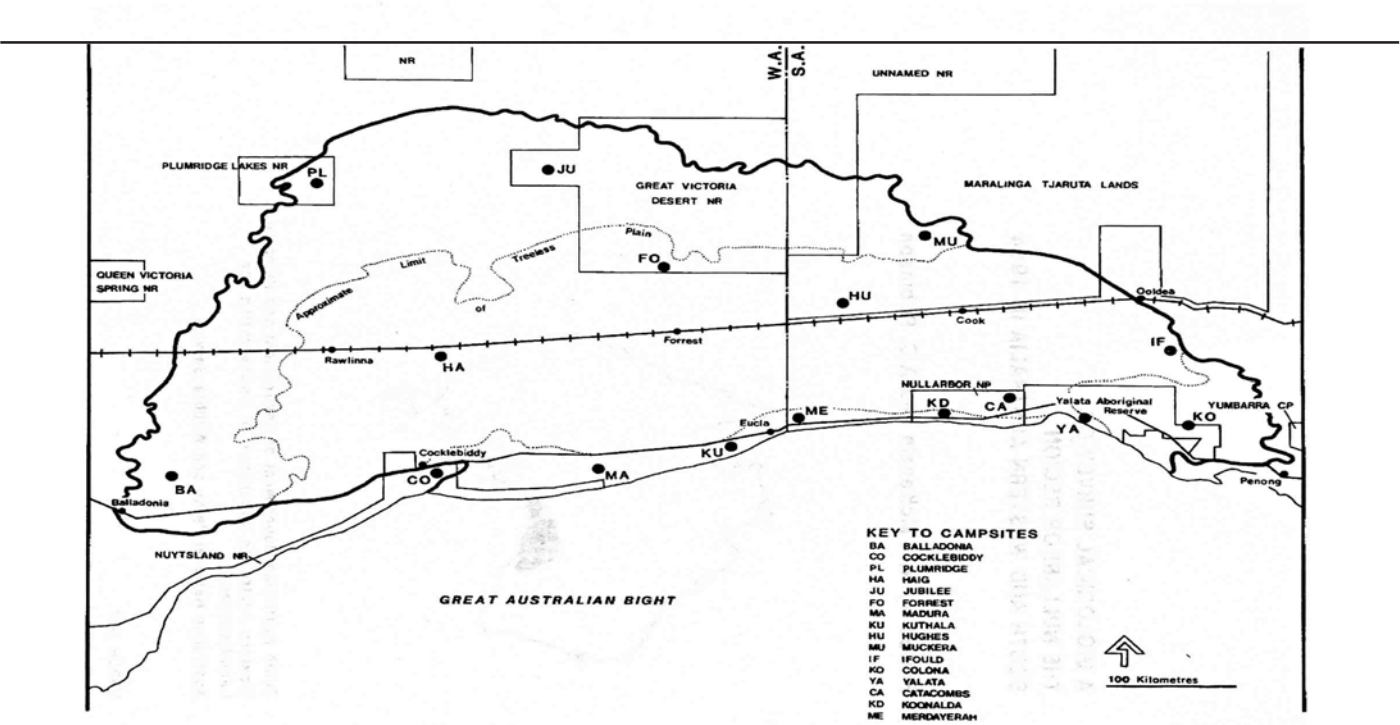
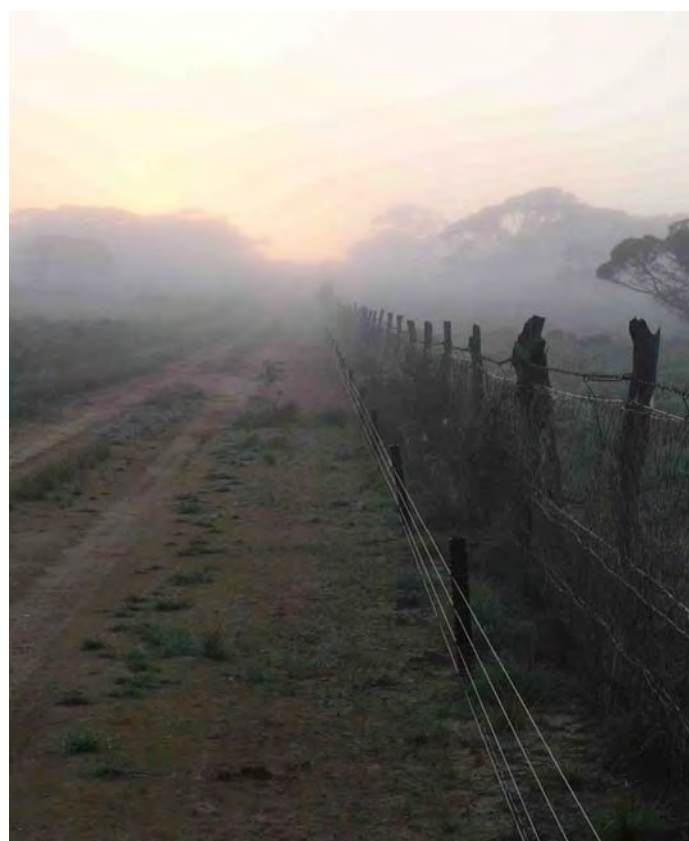


Figure 1 : Map of the survey area

in order that we could begin to prepare for this unusual and quite remote expedition, Jill Tugwell and I took part in a recce of the sites with Harald (AW NRM) and John MacDonald (DENR).

Jill and I drove as far as Wudinna on Saturday 26<sup>th</sup> March so that we could meet with Marlene Boylan – President of the local Lions Club with the idea that they could “host” the Expedition at an overnight stop on the way across and on the way home. She agreed to work toward this at the local Community Centre.

In the morning we made it to Ceduna and met Harald and John, and on Monday, purchased our supplies, packed the Nissan Patrol (not even room for a toothpick



**Figure 2: Dog (dingo) fence**

extra) and pushed on to our first site at Colona on the Eastern boundary of the Nullabor. These sites are all along the dog fence track which makes them easy to locate in spite of the intervening years and will (along with all the other sites), have the pitfalls re-commissioned by a contractor prior to the survey.

We also found a rough and ready fencers shed which we can use as a science/kitchen facility for the Colona sites and a good camp area.

Next day, we called in at the Iluka sand mining camp and met our contact there, and he agreed that we could

obtain water on our way through to the next sites at Lake Ifould and offered to provide a site tour for expeditioners on their day off.

The Lake Ifould sites are fairly widespread in mallee country but we worked out a do-able circuit and a good campsite before crossing the railway line at Ooldea and moving on to Oak Valley community on the Maralinga Tjaruta lands. To our surprise, there was almost no-one home.

The whole community had apparently travelled south to attend funerals leaving only store managers, teachers and social workers in the village. We did however meet Chris Dodds, an Aboriginal man who seems to run all the essential services and had a chat about the wonderful condition of the country following extensive rains.

North of Oak Valley, the country varied between dense mallee and large but well vegetated dune fields, covered in animal tracks of all kinds and including what were becoming ever present camel pads. These were really everywhere and before long we encountered a mob of about 15 which ran in front of us, foaming at the mouth, for several kilometres along the road before peeling off in 2's & 3's to charge through the mallee and disappear.

That night we set up camp at a “shed tank” which is a large roofed area made to collect rain water and funnel it into a series of tanks to provide water for travellers. There are quite a few of these along the various roads in these areas and they are also a good shelter and we hope to use this one for the Muckera sites close by.

From Muckera, the track took us south again to the railway station at the thriving metropolis of Cook where



**Figure 3: The feral camels**



we saw, along with all the old, empty, derelict buildings, the strange sight of a large new building being erected by a crew of 6 blokes in Hi-Vis gear, tranny blaring, nail guns thumping, angle grinders screaming, all surrounded by.....nothing!

Some-one had grafittied across the front “HUNGRY JACK’S – OPENING SOON!!!!” What could it be for?????

We followed the railway then, about a hundred K’s west, on a lumpy track to another metropolis, this one with no buildings at all, called Hughes, where we crossed the tracks and headed north for around 30 kilometers. Here, we camped in a slight depression where a few pittosporums provided some shelter and relief from surrounding plains which undulated away into infinity covered in salt bush and bluebush. We had pizza for tea, cooked in a camp oven, on an open fire! It works wonderfully!

Next morning, we had to solve the puzzle of totally missing tracks – on the map but not on the ground, obscured by the passage of time so we made our own and eventually found the sites of ’84 in a remote pittosporum grove and re-marked the tracks for ’2012.

West to the border as night was falling and running south for Eucla, a most spectacular sunset on totally treeless horizons – a sight never to be forgotten!

That night in the unaccustomed comfort of a motel at Eucla made for an early morning start for the coastal cliff-top sites of Merdayerah – very speccy!!! And on through badly overgrown tracks (need some pruning here to avoid paint damage) to the next camp at Koonalda where we were serenaded by dingos most of the night. No wonder we saw almost no kangaroos – the dogs are thick!

Because time was getting very short, we were not able to visit the sites at Catacombs but did come across several very large sinkholes, complete with their own veg. colonies in the debris at the bottom, on the way to Yalata. Here we met the pitfall re-conditioning team who were working in the reverse direction to us and observed their technique of vacuuming out the holes, re-sleeving and re- bottoming each pitfall and re-sealing using a four layer detection system so that they can easily be re-located. Having located and photographed the photopoints at these sites as well, we raced back to Ceduna just in time for dark again.

Next morning was all unpacking, cleaning gear and putting away, debriefing and as soon as we could heading for home. Whew!! – what a trip and what an Expedition to come. Can’t wait!!!

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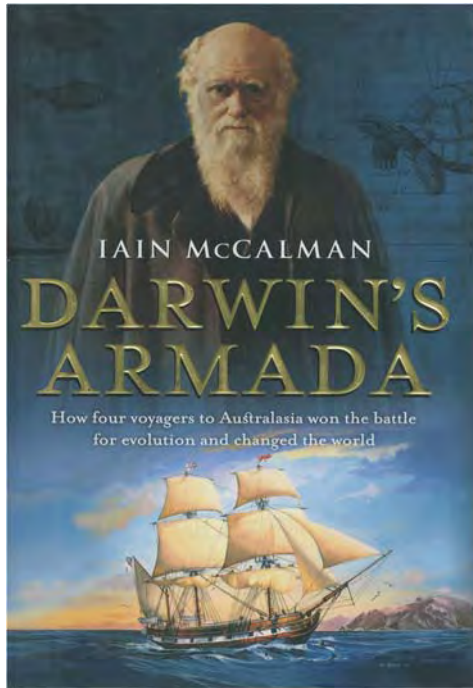


**Figure 4: Expeditioners ( L to R) John Mac Donald, Jill Tugwell, Harald Ehmann and Trent Porter**



**Figure 5: Cliffs on the Great Australian Bight at Bunda**

# Book Reviews



**Darwin's armada: How four voyagers to Australasia won the battle for evolution and changed the world,** McCalman, Iain, 2009, Penguin, Australia; 422 pp.

The bicentenary of Charles Darwin's birth a couple of years ago produced a variety of publications. This is a good one, written in easily digestible prose, it takes a broad view, with an antipodean perspective, of Darwin's achievements leading to the publication of *On the Origin of Species*.

The nineteenth century was a time when adventure and science were closely allied. Over three decades, four young adventurers, all in their early twenties, travelled to the southern hemisphere in search of new fauna and flora. Their shared experiences of travel and hardships brought them close together, and they became firm friends later in life, and supportive allies in times of incredible adversity.

Charles Darwin, a doctor's son with an insatiable curiosity about the natural world, travelled in *HMS Beagle* with Capt Robert FitzRoy during 1831-36. In his *Voyage of the Beagle*, besides the hardships, he describes the fauna and flora that he encountered in South America including the Galapagos Islands, New Zealand and Australia. This led to his protracted pondering of his theory of evolution before he felt comfortable to publish it, realising that it would upset the widely held traditional creationist view of the world.

The second was Joseph Hooker, son of a botanist who became Director of Kew Gardens in London. Inspired by

Darwin's publication, his voyage on *HMS Erebus*, from 1839-43, included travels to the Cook Islands and Antarctica with Capt JC Ross, after whom the Ross ice shelf is named. The plant specimens that he collected and studied added critical evidence to Darwin's developing theory of evolution. They became close friends and collaborators. Hooker followed his father in becoming Director of Kew Gardens.

The third was Thomas Huxley, whose voyage was on *HMS Rattlesnake*, during 1846-50. His main interest was in marine biology south of the equator. Highly intellectual and sceptical, he coined the term 'agnostic' to describe his doubt about a supreme being, thus avoiding the 'atheist' label. In opposing the clergy's strong objections to evolution through natural selection, he became "Darwin's Bulldog". Among many other achievements he founded the prestigious scientific journal *Nature*, still highly respected today.

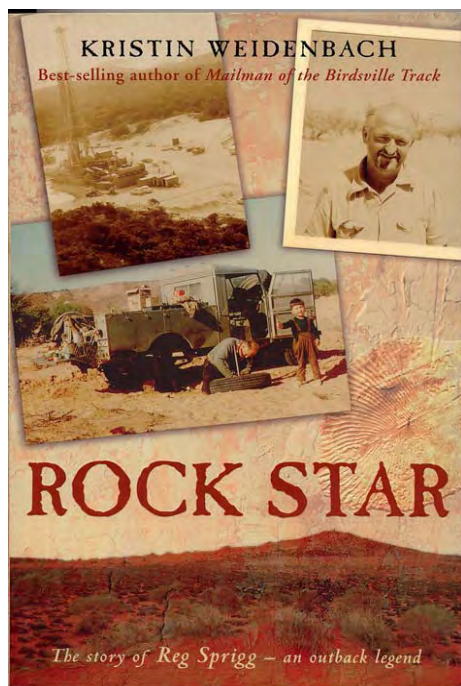
Unlike the others, Alfred Russel Wallace came from humble beginnings to spend the years 1848-66 travelling in the remote regions of South America and South-East Asia as a collector of biological material. His observations of the faunal differences between islands of SE Asia led to the "Wallace Line" of demarcation of faunal species being named after him. His observations led him independently to the same conclusion about evolution by natural selection that Darwin had evolved over the previous twenty years, but who had been tardy to reveal it to the rest of the world. From his relative obscurity during his years of collecting he became the authority on animal distribution in the 19<sup>th</sup> century.

With the urging of Hooker and Huxley, Darwin published *On the Origin of Species* in 1859, to predictable controversy. Darwin's decades of procrastination and lethargy were shaken off to defend his proposition against vitriolic attacks. Subsequently, the other three became his strongest public supporters, and evolution by natural selection gradually became widely accepted. Darwin's reputation went from being the "Devil's disciple" to one of England's most respected scientists. After his death he was buried in Westminster Abbey in 1882. The book has a good index, and extensive bibliography for those wishing to pursue the subject further.

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# Book Reviews



**ROCK STAR The story of Reg Sprigg - an outback legend.** By Kristin Weidenbach. (Adelaide, East Street Publications, 2008. ISBN 9781921037290)

As partner of Doug Sprigg, Kristin Weidenbach has no doubt heard much about his father. She would also have become acquainted with Reg through his substantial accumulation of personal and business archives, well housed and cared for by Kristin in a special building at Arkaroola. From a large body of material she has produced a lively account of a remarkable man.

The dominant theme is geology, the fire that energised Sprigg's life from childhood to death. Recurrent sub-themes deal with his bread-and-butter work: searching for uranium at Radium Hill and Mount Painter, for oil in South Australia, Queensland and Turkey and doing general geological surveys. We read of his experiences as a public servant and then his involvement in the foundation of Santos and his own companies, Geosurveys of Australia and Beach Petroleum.

Other themes deal with 'hobby-horses' that did not earn money, including a nickel mine that never happened in the far north-west of South Australia, submarine chasms off-shore from the present mouth of the Murray River, submerged beaches in the South-East, his boat and improvised diving chamber built for under-water geosurveys, and above all, the Ediacara fossils, Sprigg's most significant contribution to science.

Of increasing importance in the later chapters is the purchase of Arkaroola and the financial hazards of developing it as a centre for ecotourism.

Sprigg appears as an impetuous, energetic, irreverent, adventurous man, both demanding and considerate towards his staff, a family man who took his wife and two small children with him on gravity surveys across the Simpson Desert, a man who could grasp the essentials of a new idea and convey them to an audience but lacked the patience to give meticulous attention to the routine, boring details needed in preparing an academic thesis for submission. However, he had the satisfaction of academic and civil honours later in life.

The author's style is fluent and vivid. Describing his mapping of the uranium deposit at Radium Hill she writes, 'He worked largely alone, dangling on ropes in shafts up to 50 metres deep; slithering through tunnels, narrow and crumbly . . . it was nerve-wracking, dangerous, difficult work. But he loved it! The geology was fascinating and that was all that mattered.' (page 28) One does not go nit-picking for faults but the occasional solecism shows up: 'His smutty, schoolboy sense of humour always enervated the talk.' (page 263)

There are several references to Sprigg's life-long friendship with Sir Douglas Mawson. However, in the one chapter where Mawson appears in any detail he is depicted as a grumpy old man unfairly blaming his young assistant for a series of mishaps. As an eighteen-year-old student of elementary Geology, this reviewer, during one of the field excursions, found himself walking along a beach beside Sir Douglas. The Professor was not remote or dismissive or condescending but courteous and friendly.

**John Love. SEG committee member**  
[jtlove@internode.on.net](mailto:jtlove@internode.on.net)



## MOONABIE EXPEDITION REPORT

SEG is now in a position to publish the report on the Moonabie Expedition of 2003.

The aims of the Moonabie Expedition were to extend a biological survey to the western end of Munyaroo Conservation Park which is south of Whyalla on Eyre Peninsula. An earlier survey had been carried out on the eastern end of Munyaroo Conservation Park in 2002. The aim of the survey was to contribute species and locality records to the Biological Survey of South Australia and to train participants in biological fieldwork techniques.

While the eastern end of the park is predominantly western myall plains behind coastal samphire flats the western end is more topographically interesting with several lines of escarpment with mallee and sandhill country behind them. Part of the area was cleared for agriculture early in the twentieth century and another portion has been subject to fire in recent years.

This varying topography provided a range of survey sites from sandhills covered with low heath to rocky hillsides and mature mallee stands.

The camp was from Sunday 26<sup>th</sup> November to Wednesday 7<sup>th</sup> December 2005.

In the report some historical records are presented of European land use on Munyaroo prior to its proclamation as a Conservation Park. These records include an attempt at cropping an area outside Goyder's Line of sustainable cropping.

For the biological survey, eight sites were established on representative habitats in the western part of the park. Within each of these sites, intensive observations were made of the flora and fauna. In addition, 'opportunistic' observations made outside these sites added to the species records.

Altogether some 222 plant species were recorded during the expedition. Of these 52 were first records for the park. See Table 5.2.

Of the reptiles, dragons (3 species), geckoes (6 spp.), legless lizards (4 spp.), skinks (17 spp.), and elapid snakes (2 spp.) were recorded. See Table 7.1.

Sixty seven species of birds were recorded during the survey. Evidence of breeding was found for nine species, namely Emu, Malleefowl, Nankeen Kestrel, Galah, Scarlet-chested Parrot, Rainbow Bee-eater, Red Wattlebird, Striated Pardalote and Black-faced Cuckoo-shrike. Fifty-nine species were recorded from the survey sites. Species recorded at the most sites were Port Lincoln Ringneck (7 sites), Emu (evidence, 7), Weebill (7), Inland Thornbill (7), Grey Butcherbird (6), Grey Shrike-thrush (6), Red Wattlebird (6), Spiny-cheeked Honeyeater (6), Yellow-rumped Pardalote (6) and White-fronted Honeyeater (6). See Table 8.1

The survey recorded 16 species of mammals, 14 of which were native (1 monotreme, 2 dasyurids, 3 macropods, 2 rodents, 6 bats) and 2 introduced species (rabbit and fox) (Table 1). No House Mice were captured on this survey. See Tables 9.3, 9.4 and 9.5.

Expeditioners and staff of the expedition will be supplied with a copy of the report in the next few months when it is published and copies will be available for purchase by other people.

**Contact: Alun Thomas**

**Email: [athomas6@bigpond.net.au](mailto:athomas6@bigpond.net.au)**



# Expedition 2011

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You are invited to join us on an expedition to the Arkaroola Wilderness Sanctuary in the northern Flinders Ranges of South Australia. This area has been subject to major geological activity over the last billion years or so, resulting in a great variety of soil types and land forms which have a large influence on the flora and fauna to be found. The purpose of the expedition is to conduct a comprehensive biodiversity survey of all the life forms of the area and will include vegetation, invertebrates, reptiles, mammals (including bats at night) and birds.

Standard biological survey methods will be used to identify, measure, document and release animals caught.

This is a great opportunity for people of all ages and expertise to observe and participate in professionally conducted field survey work with experienced biologists and natural historians.

You won't need any special scientific skills - just a love of exploring the bush and learning about its many inhabitants and seeing some amazing country along the way.

**DATES:-** The Expedition departs early on the morning of Sunday 18th. September 2011 and returns on Saturday 1st. October 2011

**Accommodation:-** On this survey, we will be based at the old Arkaroola Station, with sleeping and bathing facilities in both the shearer's quarters and the homestead itself. We will also make use of the shearer's kitchen to prepare meals. For those most happy under canvas there are also plenty of camping spots. BYO tents.

**Costs:-** The total cost for each expeditioner is only \$500 which covers transport, food and participation in all activities.

Numbers are strictly limited on this survey due to logistical and movement requirements particularly on the Ridgetop track so register your interest now!! Please phone Trent Porter on 82789078 or email on [trentasaurus@bigpond.com](mailto:trentasaurus@bigpond.com)

**BE QUICK - SPACES REALLY ARE STRICTLY LIMITED**

## GLUEPOT RESERVE – A RESERVE WITH A DIFFERENCE

**Birds Australia Gluepot Reserve** is Australia's largest community managed and operated conservation reserve. Situated 64 km from Waikerie on the River Murray in South Australia's Riverland, the reserve is managed and operated **entirely** by volunteers. Some 54,000 ha is size, it is home to 18 nationally threatened species of birds, 53 species of reptiles and 12 species of bats, some of which are nationally threatened. **There are few areas of the world that support such a concentration of threatened species.**

### Some program details for early 2011

#### **An Introduction to Nature Photography**

**3 & 4 September 2011 Code: NP11**

**Facilitator: Craig Ingram**

This workshop is designed to help you get the most from your nature photography experience and to teach you how to make technically excellent images of birds and other wildlife with an artistic flair. An afternoon lecture on the Saturday will fill your head with tips and tricks to improve your photography and an early morning shoot on the Sunday to capture the best light and put all those new ideas into action. Craig will be there on the Sunday shooting alongside you to help out and answer any questions that may crop up in the field. The course is tailored to fit the needs of photographers from beginners to advanced, so that each will receive the most out of the workshop.

#### **An Introduction to Macro Photography 10 & 11 September 2011 Code: MP11**

**Facilitator: Craig Ingram**

Discover the exciting world of close-up photography in this fun, informative 2-day workshop. Daily tutorials about the equipment and technique used in close up photography will be followed by time behind your viewfinder discovering hidden treasures in magical miniature landscapes that Gluepot has to offer. Techniques included will be macro flash photography, using natural lighting, reflectors, macro telephoto, composition and much more!

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#### **Further Information**

For additional information contact

Mrs Anne Morphett

Environmental Education Centre Administrator

Birds Australia Gluepot Reserve

61 Sturdee Street, Linden Park, SA 5065

Phone: (08) 8379 3865 or 0421 582 710

Email: anne\_morphett@yahoo.com.au

Or alternatively contact Duncan MacKenzie on:

Phone: (08) 8332 1204 Fax: (08) 8364 5527 Email:

dmackenzie@iname.com



#### **An Introduction to Bird Banding**

**27 & 28 August 2011 Code: BB11A**

**Also**

**29 & 30 October 2011 Code: BB11B**

**Facilitator: Wally Klau**

This course is an Introduction to bird banding and is led by one of Australia's most experienced and respected bird banders. If you are interested in birds and would like to learn more about how to study them, this course will show you how. In addition to classroom work, you will spend most of your time in the field learning how and where to set mist nets. You will be able to handle birds and experience the excitement of determining the species, age and sex of birds and will be shown the fine detail that determines a correct identification. You will also learn the correct method for banding, weighing, measuring and data collection for each bird you catch. Importantly, you will learn about the vital role that banding plays in bird research. At the conclusion of the course, participants are welcome to spend the rest of the week assisting Wally with banding.

#### **An Introduction to Birds & Birdwatching**

**17 & 18 September 2011 Code: BW11**

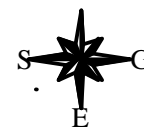
**Facilitator: John Gitsham**

An 'Introduction to Birds and Bird Watching' will take you step by step through the techniques and basic knowledge you will need to get more out of your birding. Bird watching is fun, educational and healthy and the two-day workshop, covering theories and issues of bird watching, will include two guided trips around some of the best birding locations on Gluepot Reserve. The workshop will provide you with clear interpretation and guidance that will assist you to develop your bird watching skills, and thus obtain the most enjoyment from this fascinating pastime and hobby.





# SEGments



## SCIENTIFIC EXPEDITION GROUP

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.

### APPLICATION FOR MEMBERSHIP AND MEMBERSHIP RENEWAL for 2011

#### SUBSCRIPTIONS

Adult member - - - - - \$30.00

Concession cards/ student----- -\$15.00

Family membership - - - - - \$35.00

Corporatemembership - - - - - \$35.00

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Address . . . . .

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. . . . .

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**

# Visit the Scientific Expedition Group Website

<http://www.communitywebs.org/ScientificExpeditionGroup/default.htm>



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