

# Scientific Expedition Group Inc.

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Cover photograph by Alun Thomas - Green-and-white Hummingbird (Amazilia viridicauda) at Machu Picchu, Peru

### Editorial

The Scientific Expedition Group has over many years acquired a considerable amount of equipment. This includes camping equipment such as tents and cooking utensils, as well as scientific collecting equipment such as cage traps, Elliot traps and the like. More recently the committee has realised that it is not reasonable to continue to use members vehicles to transport expedition sites. We have therefore acquired several trailers.

Last year we purchased from the Department of Environment and Heritage a vehicle canopy which was surplus to requirements for them and which we intended to mount on a trailer to hold and transport a lot of our expedition gear. It turned out that the total of trailer, canopy and equipment would have been too heavy to safely tow and hence the canopy needed to be mounted onto a tray top truck. We investigated hiring a truck when needed but the cost was prohibitive. For the last 6 months we have looking for a suitable light truck to purchase and this was achieved a little over a month ago. The truck is an Mitsubishi Canter with a crew cab.

The truck need further work to install the canopy and to fit it out for carrying our trapping equipment but it will be a valuable and important addition to our stable.

Next year is going to be a busy year for SEG because of the Nullabor trip earlier in the year and the possibility of another major expedition later in the year. We are always looking for volunteers to assist with sorting out

the logistics and running the expeditions.

In this edition of SEGments I have prepared a photographic montage of some of the interesting birds Kathleen and I saw during our trip to the Galapagos Islands several years ago.

John Love has written an interesting article on the regeneration of sandhill vegetation following formation of seismic survey lines in the Marqualpie region. He has also looked at what camping conditions may have been like when the seismic survey was done.

Janet Furler has described the finding of a very rare black beetle on Minnawarra which highlights the importance of keeping good quality scrublands. Janet has also told us about the passing of Missy.

My Chairman's Report summarises the previous year of SEG.

Margie Sprigg gave an excellent address at the Annual General Meeting and has provided a summary for SEGments.

Minnawarra has had more good news as described in the article by Richard Willing.

Happy reading!

Alun Thomas

**Acting Editor** 

#### Acknowledgement

Excellent photos were taken by Douglas Burns during the last Minnawarra survey and these were used in the previous issue of SEGments but the photographer was not acknowledged. The lizard picture is one of his. Thank you Douglas for the photos.



### Birds of the Galapagos by Alun Thomas

In late 2009 my wife Kathleen and I visited the Galapagos Island in the eastern Pacific Ocean. There are about ten main islands and a number of smaller islands with a range of habitats. Although the islands straddle the equator they are mostly fairly dry and not surprisingly seabirds predominate

We had eight days cruising seven of the islands and saw a range of very interesting birds. This article is a photographic montage of some of the birds we saw.







Magnificent Frigatebird (Fregata magnificens)



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Swallow-tailed Gull (Creagrus furcatus)

Whimbrel (Numenius phaeopus)





Great Blue Heron (Ardea herodias)



Galapagos Penguin (Spheniscus mendiculus)



Blue-footed Booby (Sula nebouxii)

# ARCHAEOLOGY AND REGENERATION

By John Love

About 200 metres north of the base camp for the SEG Marqualpie Expedition 2008 there is an old seismic survey line. The method of preparing for a seismic survey used to involve clearing a straight line five metres wide, leaving a strip of bare earth, sometimes extending for many kilometres. Vegetation is growing back over the line near the base camp. Beside the line is a small rubbish dump: a hole was scooped out by a bulldozer, rubbish was tipped in and left uncovered. Natural processes of wind and rain have partly filled in the hole. Heavier items such as drums and bottles remain there while lighter things were found scattered within a radius of about 150 metres from the dump.

Among the artefacts were an oval fish can, round cans that could have contained fish or puddings, oblong cans that would have held processed meat of the kind eaten for lunch, tall, narrow fruit juice cans, a pressed metal ash tray and numerous aluminium drink cans. The latter had all been bitten and punctured by dingoes. (This is cattle country, beyond the dog fence.) One of the drink cans was identified as 'Southwark Bitter' and another as 'Coke'. All the paint had worn off the others. Notably absent were 'bully beef' and other meat and vegetable cans.

This collection of artefacts would seem to indicate that the people who used them were well supplied with fresh meat and vegetables, they lived in caravans or similar mobile accommodation and had a refrigerator. All this is consistent with the type of living conditions provided by petroleum companies for field exploration workers. It is reasonable to

conclude that the rubbish was put there by the surveyors, not cattlemen, and that the dump and the survey line were contemporary. Also found were about a dozen Carnation milk cans, all embossed with the words 'USE BY 03 JUL 81:'. (The significance of the colon is not known.) This gives an approximate date for this particular survey.



A5. Carnation milk can bottom.

Research in the State Library of S.A. and State Records S.A. led to the Mines and Energy Division of the Department for Primary Industries and Resources. Peter Hough of that Division informed the author that the area covered by the SEG expedition had been criss-



A6. Carnation milk can top. crossed by numerous seismic surveys at various times over the past 50 years. From information supplied by the author, Mr Hough identified the

<sup>&</sup>lt;sup>i</sup> See for example, O'Neil, B. *Above and Below*, Adelaide, Mines and Energy S.A., 1995, p.192.

line in question as part of the 'Oonabrinta Seismic Survey' which covered selected areas widely scattered over the Cooper Basin. This particular line, which is named '78-JPU', was surveyed in 1978, and has not been used since then. This gives a clearly defined period of thirty years of natural regeneration in sand-hill country stocked with cattle in an arid climate.

In the following description and sketch map, all positions and distances were recorded using the global positioning system and Geocentric Datum of Australia 1994, and all are approximate.

The survey line runs on a bearing 120° – 300°. It is now crossed by the road to the Keleary oil field at 0467183 6995022. ii To the east, some scraps of steel apparently used in an attempt to repair heavy machinery lie in a claypan at 0467381 6994916. To the west, the line ascends for 220 metres to the top of a north-south dune of fairly well compacted sand, 0466994 6995132. This is referred to in this report as the east dune. There is then a gradual descent over sandy loam to an ephemeral swamp of grey-brown cracked mud. Beyond the swamp there is a gradual rise and then a steeper rise up another north-south dune, of fairly loose sand, 0466439 6995465. This is referred to in this report as the west dune. From its top the line can be seen extending to the horizon.

Photographs were taken at intervals of fifty metres, more or less, along the survey line between the top of the west dune and the Kelearv road, a distance of 863 metres. They have been numbered from B1 on the west dune, going east. In the captions to the photos, the symbol > indicates the direction to which the camera was pointing, thus >WNW means looking westnorth-west. The 'B' is to distinguish these photos from the archaeological studies, which are numbered 'A1', etc. Photos looking ESE are on the left side of the page and those looking WNW are on the right. Small inset photos show details here and there. The sketch map below shows the survey line, its intersection with the road to the Keleary oil field, the two dunes, the dump, the

steel scraps in the claypan, the expedition camp site and the turn-off from the road to the camp.

The most obvious regeneration at the time of the SEG expedition was the carpet of ephemeral flowers on the west dune. The woody plants on the east dune were doing quite well. The survey line seems to have had little effect on the swale, which is sparsely vegetated, while in the lowest part of the swamp there has been no regeneration at all in thirty years.

The author is grateful to Anne Garnaut who helped to find, interpret and photograph artefacts in the field, to the search room staff in State Records S.A. for their usual enthusiastic help and to Jennette Brown and Peter Hough in the Mines and Energy Division of the Department for Primary Industries and Resources, who provided exactly the information needed to confirm the archaeological evidence.

This report has been edited to fit into the SEGments format. The text is complete but the map and four of the six archaeological photographs have been deleted.

Photographs of the survey line fill seven A4 pages, of which samples appear here. I would be happy to make the full report available to anyone who is interested.

John Love, August 2011.

ii See the Auslig 1:250 000 topographical map SG54-14, Edition 2, Innamincka.



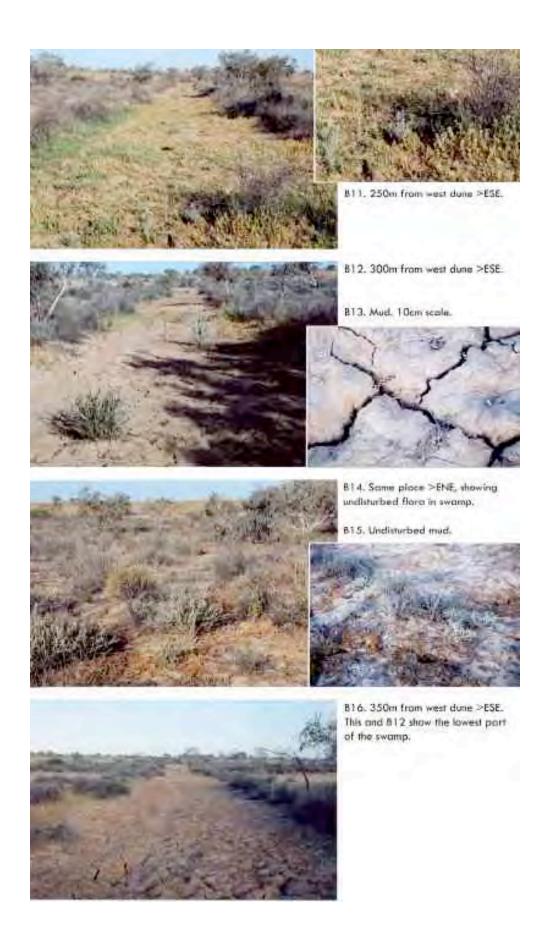
B1. From top of west dune >WNW. It seems that cattle have used the survey line to form their own track.



- B2. From top of west dune >ESE. East dune on horizon.
- B3. Detail 17m east of west dune summit.



- B4. 50m east >ESE.
- B5. Same place, detail.



### A Rare find

A few years ago Minnawarra was visited by the South Australian Museum (SAM) invertebrate people doing a search to see what they could find. They put micropitfalls at our eight survey sites, caught various small creepy crawlies and were pleased with what they found.

Wind forward to February this year, when I got a phone call from Peter Hudson, Collection Manager at SAM. American invertebrate colleague Kip Will was hunting *Acanthoferonia ferox* as part of an evolutionary tree he is building and was requesting a visit, as the previous survey had identified indications of their presence (ie bits, but nothing with useable DNA). Of course I agreed.

It turns out that Acanthoferonia ferox is a terrestrial, nocturnal black beetle. It was thought to be extinct for 108 years until rediscovered at Mt Compass and identified as an endangered inhabitant of Fleurieu Swamp habitat.

So there we were, on a balmy night, wandering through the scrub near sites 7 and 8, checking under logs and litter. We could tell it was a good night for collecting insects due to the large numbers flying around the head torches (and our eyes, noses, mouths ...). Peter and I managed to find many of the common black beetles which land in our pits during surveys. At midnight Kip found one female *A. ferox*. Cheers all round and she is off to become famous.

She was the only one found, that night or the following night, so I have undertaken to keep searching during the surveys. I have a picture of *A. ferox*, and will have a picture of the common one, (whose name is so common I can't find it on the net). Kip assured me that it is very easy to tell the difference, so we will see how we go!

All in all, a fascinating night, a great result and another indication of how important it is to preserve good quality scrub like ours.

Janet Furler

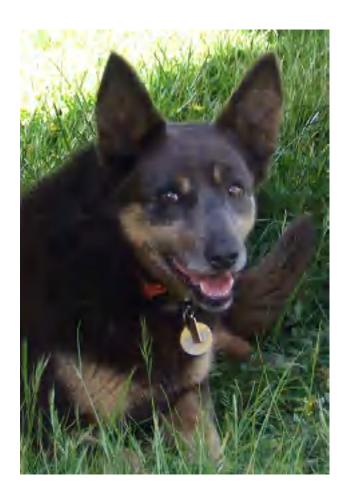


### Missy

Any visitors to Minnawarra in the last 10 years would have been enthusiastically approached by our very charming and persuasive two tone Kelpie Missy. She did her best to chat up anyone for a pat or a tummy rub. Food was an added attraction, as anyone eating outside would have discovered.

Much to the family's dismay, and Jess' distress, Missy became ill after a too-fatty meal and passed away in June. She has been sorely missed by Jess, and by many people.

Janet Furler



## Chairman's Report 2010-2011

#### Summary

I seem to have said this every year since I became Chairman but I can safely say that our 27<sup>th</sup> year has been another busy year for SEG.

GRaSP has continued its work, the Minnawarra Biodiversity Project has continued, the mallee fowl project has become a fixed part of our calendar, we had a successful expedition to Bimbowrie and we are in the final stages of planning for our major expedition this year, a return to Arkaroola, we are planning a Nullabor Exoedition and a Mawson Plateau Expedition is being worked upon.

A most important development is that after many years of using expeditioners vehicles to carry heavy loads to the major expedition sites we have purchased a truck. More later in this report.

#### GRaSP

Chris Wright and his team have continued to develop the Gammon Ranges rainfall project with more electronics and remote communications. He has been ably assisted by Michelle and Garry Trethewey, Graeme Blair and many others.

We have a sub-committee at present conducting a study into the scientific outcomes of the Project and what changes might be made in the future. The sub-committee is expected to report later this year.

#### Minnawarra Biodiversity Project

The autumn survey of the Minnawarra Biodiversity Project has been carried out and the spring survey will be in a few weeks.

#### **Major Expeditions**

Last years expedition to Bimbowrie was very successful despite some heavy rain which made many roads impassable and disrupted the surveys. A report on the expedition was published in the December issue of SEGments and the scientific reports are being prepared.

This year's major expedition, in a few weeks, is to Arkaroola in the far north of the Flinders Ranges. Members will recall that several years ago we had a major expedition to Arkaroola but owing to drought conditions very few animals were caught. Since then there has been a lot of rainfall at Arkaroola and we have had reports that animals are plentiful again. This survey will be able to assess how strong the recovery has been.

Once again we have applied for and been awarded sponsorship for students by the Nature Foundation so that we are able to subsidise five students to the sum of \$500 each. We are very grateful to the Nature Foundation for the continued support.

Michelle Trethewey has agreed to be Camp Leader, and Stuart Pillman will be Scientific Leader and a strong scientific team has been organised and as usual Trent Porter is quartermaster and chief organiser. We have a full quota of expeditioners. It sound like it will be a great expedition.

A small party from SEG has done a reconnaissance on the Mawson Plateau in the Arkaroola region to decide if a larger expedition is possible. The sites look very promising. A number of members are raring to go but logistics planning is difficult because of the need to get equipment onto the plateau. It is likely that we will need to use a helicopter. Has anyone got a spare one?

#### Mallee Fowl Monitoring

Our third mallee fowl monitoring project was undertaken in late October last year.

We monitor two sites, Bakara Conservation Park and the property of one of our members, Henry Short. Bakara is located 32 km East of Swan Reach on the Swan Reach to Loxton Road. After essentially no activity being seen in the previous surveys and after good rains the results this time were encouraging with several active nests being located and mallee fowl being observed working on one mound. If you have not yet indicated your interest in this survey and you would like to be involved please register with Bruce Gotch.

#### **SEGments**

Andrew Barr has produced this year's editions of SEGments and maintained a very high standard. He will be overseas for the next edition so I will be editing but I have huge shoes to fill. As usual if any members have any articles they would like published in SEGments please send them to me as soon as possible.

#### Website

Michelle Trethewey continues to manage our website. We are in the process of having a re-write of the website by a student from the University of South Australia. We should have the new website by the end of the year. I encourage members to visit the site regularly to keep an eye on what is going on. We also

have a new email address which is accessible from the website and is listed in SEGments

#### Committee

In my eighth year as Chairman the committee has continued working well.

- Michelle Trethewey is Vice-Chairman and has ably filled-in in my absence.
- Gina Breen who has taken on the enormous work of Secretary and done a very good job. As some of you may know she recently visited family in Ireland and has been taken down by a serious illness. It will be some months before she is well enough to travel back to Australia and in the meantime John Love has offered to act in the position of Secretary. Thank you John.
- Graeme Oats has been our indefatigable
   Treasurer and has changed the form of his
   monthly reports to allow us to understand our
   current financial position. Graeme will
   present his annual financial report next.
- John Love is in the process of revising our various forms used for GRaSP and the major expeditions so that they are consistent. Thank you for that work John.
- Trent Porter has managed our equipment and storage and been a major contributor of time and effort in the truck purchase.
- Stuart Pillman has provided valuable insights into the Department of Environment and Natural Resources.
- Bruce Gotch has been a valuable contributor on the truck purchase committee.
- Graham Hill has been working hard preparing material for improving our camp and hygiene standards and this material will be provided to expeditioners at Arkaroola.
- Duncan Mackenzie has been a steadying hand on the committee. With his Gluepot experience he can often guide in the right path through the maze of bureaucracy.
- Richard Willing, as President, has provided a steady hand and a historical perspective as well as a place for our monthly committee meetings. Thank you Richard.

#### Equipment

Top of our list of new equipment this year has been a truck. Last year we purchased from the Department of Environment and Heritage a vehicle canopy which we intended to mount on a trailer to hold and transport a lot of our expedition gear. It turned out that the total of trailer, canopy and equipment would have been too heavy to safely tow and hence the canopy needed to be mounted onto a

tray top truck. We investigated hiring a truck when needed but the cost was prohibitive. For the last 6 months we have looking for a suitable light truck to purchase and this was achieved a little over a month ago. The truck is an Mitsubishi Canter with a crew cab. We do not have time before the Arkaroola expedition to mount the canopy but once it is mounted the canopy will provide a permanent storage for much of the trapping gear which will provide some much needed breathing space in our shed at Blackwood.

I particularly thank Trent Porter and Bruce Gotch for their hard work in obtaining the truck.

#### The Future

SEG has a great future with strong activities planned. The most interesting of which at this stage is the expedition to re-survey the Nullarbor nearly 30 years after a previous survey using the same sites. The survey is being done in conjunction with the Alinytjara Wilurara Natural Resource Management Board and will require four separate teams. I understand that the teams are presently oversubscribed for participants but as there is likely to be some dropouts if you are interested please give your name and details to Trent Porter.

It has not yet been decided if there will be another major expedition next year.

#### Summary

There are more activities than ever that SEG is getting involved with and if members can provide assistance with organizing expeditions the committee would be glad to hear from you.

In my opinion SEG continues in good hands.

Alun Thomas Chairman





#### New NRM Community Grant awarded to SEG

SEG has been awarded a Community Grant Award in the current 2011-12 round, that will enable the continuation of long-term monitoring of small mammals in the Minnawarra Biodiversity Project.

For the past 11 years the small mammal population in fenced-off Heritage Area scrub has been monitored. To identify recaptured animals a system of ear marking has been used, using a punch to make a small hole in either or both ears at one or more of 4 ear sites. The animals can be identified by the combination of holes in the ears. This system has been used for the three main small mammal species that we capture – Bush Rats (Rattus fuscipes), Swamp rats (Rattus lutreolus) and Antechinus (Antechinus flavipes). It has worked well for about 10 years, but now, particularly at the heavily populated sites, we are running out of ear space. A better option has to be found if we are to continue to identify our captures.

With this grant it is proposed to use microchips inserted under the skin to identify animals. For small animals, modern technology has developed very small chips. The smallest of these, the nano-transponder, is 7mm long, and 1.25 mm in diameter and has been used in small

birds and micro-bats. The hand-held scanner sends a signal to the microchip, which returns a signal with an individual number which permanently identifies the animal. As well as giving a life-time marker to these small animals, micro-chipping appears to be less stressful and have less impact on them than ear punching. It will also reduce the risk of duplication, which may occur with the current system because old ear numbers are being used, hoping that the original animal is no longer alive. It will thus provide a more accurate documentation of animals' life span. It is also hoped that this technology will answer the question of whether there is migration from one site to another in the longer-lived animals such as Swamp Rats. Initially this will take more time because we will still have to look carefully at the ears for identification, then microchip each animal. Eventually, processing each capture will be quicker and less stressful, as the need for ear inspections is unnecessary. The time needed for clearing the traps will also reduce as the population of animals with microchips increases.

#### Richard Willing

#### HELP WANTED

SEG's VGRASP (Vulkathuna - Gammon Ranges Scientific Project) has recently finished converting, collecting, and collating well over 2000 photos of vegetation taken by our intrepid volunteers over 23 years.

We've converted old films & slides, collected more recent digital photos, and catalogued them all.

But we're missing 2003 & 2004, and we're a bit thin a couple of years either side.

So we're asking all old Gammon Ranges

expeditioners to look through their attic, shake out their pockets, develop the film in that old Kodak Box Brownie, look in that mystery envelope in the back of the wedding album.

If you can turn up anything, please email Garry Trethewey

garrytre@bigpond.com <mailto:garrytre@bigpond.com> or ring 8390 3011

#### **FOOD STANDARDS AND CAMP DUTIES**

Each year since 1985, the Scientific Expedition Group has organised an annual expedition to conduct biodiversity surveys in a variety of locations throughout South Australia.

The management of the planning, preparation and operation of an expedition is enormous. Consider just some of the components of organisation for this event: transport of people, camping and personal equipment, food for two weeks, cooking facilities and equipment for the period, equipment for the scientific surveys and numerous other items to provide for any situation which may arise.

The SEG Committee has decided that expeditions should endeavour to comply with the Department of Health Food Standards and guidelines as applied to voluntary organisations in camping conditions.

These include five main considerations for keeping food safe.

- temperature control of food
- safe water supply
- hand washing facilities
- protecting contamination of food
- disposal of rubbish and waste water to prevent the contamination of food



In addition to food preparation and control, there are also other general health and welfare arrangements in the camp. These include facilities such as toilets, showers, rubbish and waste water disposal, sweeping and cleaning areas used by participants and pest control (flies, insects and mice).

SEG has now developed a procedure whereby specific Camp Duties are completed by Duty Teams on a daily basis All participants will be allocated to a Duty Team of four / six members who will be allocated by roster, to complete the standard Camp Duties on a specific day. This means that a Duty Team will be allocated to Camp Duties on one or two days during the expedition. A

Camp Duties Guide has been prepared which includes descriptions of the jobs which have to completed and can be used as a reference by the Duty Team.

It is anticipated that application of Food Standards and the use of Duty Teams will create a healthier and well managed camp with all participants making a contribution.

Graham Hill

Foremost among the considerations of the expedition committee is the health and welfare of the participants. The event is conducted under standing camp conditions and for most of the participants this is quite different from normal practices. A major consideration is the preparation of food and meals for the participants. There is a need to plan to ensure food safety! Food poisoning can result in unpleasant gastric illness which may occur within a few hours of eating contaminated or poisonous food. The symptoms may include abdominal pain, diarrhoea, vomiting, nausea, headache. People can become very sick! All the more difficult because the expedition is usually operating in a remote are where medical assistance is not readily available.

# Yulkathunha Gammon Ranges Scientific Project (YGRaSP) Report 2010 / 2011

Over the last year or so, VGRaSP volunteers went to the Arcoona Creek part of the Gammon Ranges in April 2011, October 2010 and August 2010.

In **August** last year, a small group of technical experts went to the Gammons, calibrated the pluviometers and changed over our old (HS RRDL3) data loggers to Davill modified loggers. The old loggers needed to be changed over once every 3 months. Christopher Davill designed a modification, using an external battery pack, enabling the loggers to operate for more than 3 years on a single set of batteries. This means that volunteers are able be more efficient and prudent with our visits to the Park. Visits will still occur every April and October as this is traditionally the time that the vegetation photography has been taken over the past 21 years.

In **April** of this year, we had quite a large party of 13 people, all involved with various jobs. Some of the group were involved with Mulga Mapping, others did the vegetation photography and also established a new tucked away water cache with 60 litres of water. The rest of the party were involved in the upgrade of The Plateau Pluvio to turn it into an automated station.

All of the Station Pluvio's (Maynards Well, Pfitzner's, North Moolooloo), plus Arcoona Bluff and now The Plateau have been automated. This means that the Bureau of Meteorology receives rainfall information. This means that the rainfall can be recorded as it happens and displayed on the Bureau of Meteorology webpage.

#### October 2010

- Surface water.
- The Stream Gauge pool was 70m long.
- Woodcutters Well tasted less salty than usual.
- There was dense new growth everywhere.
- Lots of big mozzies.
- No fish were seen.
- Vandenberg Camp had been a swamp for a while.

#### April 2011

• Lots and lots of water running freely in many places.

- On our trip of April 2010, we saw heaps of fish, but haven't seen any on trips since, despite there being lots of water around.
- The creek was flowing. Vandenberg was full of fast growing Goodia, rushes and Dodonaea.
- A few mice around camp, two very small groups of goats, total approx 5, two Yellow Faced Whip Snake, *Demansia psammophis*.
- Extra thick growth on The Plateau and an extraordinary number of great big Golden Orb Weavers. Many of the spiders were feeding on plague locusts. Pushing through and around the melaleuca uncinata (broom bush) and the thick mess of webs was very tiring.
- Bob Henzell and John Love collected more vegetation data, in particular, Mulga mapping. Seasonal conditions were excellent in 2010 (519mm of rain, about double the annual average) with reasonably heavy summer rainfall. There were not as many new seedlings as hoped for

### What other jobs have we been doing behind the scenes?

Ray Hickman and Garry Trethewey have been digitising and recording all of the old slides of photo points. All known slides have now been completed.

#### What happens next?

The remaining pluviometer sites are in the valley and not directly accessible to Next G. We are considering using short-haul modems to send data from the lower sites to Arcoona Bluff, and from there to the mobile network. However this will require a major upgrade to all of the data loggers and training of volunteers.

We also need to think about what we will do with the newly digitised photographs. Putting them on our website is one option.

# Michelle Trethewey VGRaSP Committee Member



### 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														
Name										· • •						
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