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GROUP INC.

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WILDFLOWERS IN THE GAMMON RANGES, ARCOONA CREEK

18-22 October 2001

by Chris Wright

The River and the Weather

John Love, Susan Love, Guy Olding and myself travelled up to Arcoona Creek in the Bullock Wagon (Prado), and arrived at the entrance to the Gammons National Park at about 4:15 pm. The weather was perfect, we enjoyed four cool days and some cold nights, with no sign of rain until we left. There had obviously been plenty of rain recently because there were still pools of water in most of the rivers we crossed. Arcoona Creek had frequent pools full of clear water most of the way up to Vandenberg camp. At one or two places we noticed that water was still trickling from pool to pool. There were frogs calling at Wild Ass Creek waterhole, but I had neglected to bring a tape recorder, so we were unable to record the calls.

With just the four of us in the group, it was a quiet trip, and the nearest we came to other human beings was the footprints in the creek and the remains of a couple of camp fires.

The Wombat Cage

John Love had constructed a metal box, to be carried up to the cache at Wild Ass Creek, so that the scientific equipment can be stored safely without damage from the rocks that we use to cover up. He constructed it from a steel shelving kit, and painted it in carefully selected camouflage

colours, with a sandy surface, and a picture of the serpent Arkaroo, sliding across the bottom. The box is about the size of a domestic combustion heater. He strapped it onto his backpack, put a few useful things like sleeping gear inside and carried it all the way up the creek, looking a bit like part of a Burke and Wills expedition with a camp oven on board. On a few occasions when he turned round rather suddenly the rest of us had to dive for cover to avoid being flattened. The box was duly delivered to Wild Ass Creek and is now installed and covered over. It works very well

Aquatic Biology

Before we left Adelaide, Scotte Wedderburn had given us a training session on identifying water beetles and bugs. We took with us two Kitty Litter trays, some 10mm plastic vials for specimens, a couple of magnifying glasses, a Petrie (?) dish and plenty of enthusiasm. The net was already at the cache, and we took it with us to Upper Sambot, where we did the standard 10 metres of sampling in 30 seconds, and then washed the catch into the trays. We had the standard Water Watch sheet with us for identification, and a copy of the text book Hawking and Smith, if we were still in doubt. Guy, Susan and myself spent an hour at the waterhole at Upper Sambot and Wild

Ass Creek, trying to catch and identify bugs. (Photo at Wild Ass Creek shows Guy and Susan at work) We think we managed to identify the more obvious ones, but there were several that we had to take samples of and bring back to Adelaide for Scottie to examine. One red worm that we noticed wriggling round in circles completely eluded us, we don't know where he went. Next time we will try to work out a way of catching samples of each beetle in a pipette so that we can look at it a bit more closely, otherwise they move very quickly around the bottom of the tray and are difficult to examine. The samples we took were dosed with metho, much more friendly than the formalin we had been using previously.

At Upper Sambot, we noticed small fish swimming in a group. We were unable to catch a sample, but we assume that they were Spangled Perch. We were advised that these fish cannot survive periods of drought and must swim up the river to spawn. However the periods when the river flows are rare and very short. If the fish migrates up the river you would expect to see fish in the waterholes further downstream, however we did not notice any. It seems unlikely that the parent fish could have swum all the way up to spawn. How did these fingerlings get there? Were the eggs carried up there on the feet of water birds? Can the fish survive in muddy crevices during drought periods?

Botany and Flowers

The Arcoona Creek area is looking very beautiful, with many shrubs in flower, plenty of small plants and some tiny ones flowering prolifically. We saw four different Eremophilas, red, yellow, dark blue and pale blue flowers. The dodoneas had masses of hop seeds, and the sennas had big crops of seed pods. Some of the small bullock bush plants that had been eaten back to a few sticks, were sprouting and growing again. There is a very spiky bush with dark green leaves that is quite common in the smaller creek beds. I have noticed in the past that the plants have been heavily grazed, presumably by goats.



John Love carrying in the Wombat Trap



Chris Wright carrying out the old pitfall buckets and star posts

However now it is growing well and looks healthy.

Feral Animals

We saw only two goats during the trip, but noticed goat spoor from time to time. In general the numbers of goats appeared to be low. Admittedly the abundance of water will have made it easy for the animals to spread out, away from the regular water holes. We found the remains of a donkey, not far from the seeps upstream of Woodcutters Well. No rabbits were seen, and we did not hear any foxes calling.

Yellow Footed Rock Wallabies

On Thursday evening we walked up Arcoona Creek, past the Flow Monitoring station, and saw a Wallaby on the north side of the Creek, moving fairly quickly across the slope towards some caves. Just before dark Susan saw a second animal, near the top of Evasive Creek.

The following dawn, Friday, I was following Wallaby Creek, and saw a Wallaby in one of the narrower sections, not far up from the bed of the creek. I was able to watch the animal for a few minutes until I frightened it while trying to get my camera into operation.

While we were walking back to camp on the Sunday afternoon, about 400 metres before we got to the vehicles, we disturbed a wallaby which was resting in the shade beside the main channel of the river. He moved away very quickly towards the cover of the rocks up the side of the north bank, but despite our surprise, we all got a good look at him.

Pitfall Trap Removal

Peter Bird asked us to excavate and remove the pitfall traps from the upper two sites that were installed in 1996. We successfully removed 23 buckets, and the fly wire, pegs and star droppers. The buckets were all cleaned up and stacked together. After leaving 2 buckets in the Wombat Cage at Wild Ass Creek, all the remaining equipment was carried out and returned to Adelaide. Sherpa Chris Wright carried the buckets and Guy Olding carried all the heavy stuff.

SEG and the Adelaide Zoo Aroona Sanctuary

September 19 - 26 2001
Paul Wainwright

As I stare to the east, the subtle reds and oranges reflect perfectly on this postcard perfect evening. They augment the tranquility of this place, a haven autonomous, unaffected by the world events of the past week. As I watch shadows change I am momentarily distracted by the sounds of crashing scree, a moving macropod. Odds favour a euro, I am right, but we live in hope. The plains to the south are carpeted in herbs, greenery that I have never seen

vertical walls of the Aroona Dam, surprisingly close to a water supply to which they are not reliant. The unknown question is whether they will follow creek lines through flattish ground to find the habitat we are exploring? Or are they too cautious, wary of predation, and therefore confined to the small release area that they know?

A wallaby siting is the ultimate reward for a hard day spent scouring the hills,

building exclosures at Yellow Well with us on Expedition Warraweena in 1999. Ashley is a new recruit, a landscape/horticulturist with a keen interest in natural history and wild places. All then there's myself (Paul), who has been involved with the Gammon Ranges Scientific Project and been part of several SEG expeditions in the area. Alex Emmerich is a researcher from the Adelaide Zoo, who monitors the



this far north. I question the significance of Goyder's Line, that theoretical boundary 200kms to the south. The Flinders Ranges has the reputation of being a barren place, but throw seedlings a lifeline in the form of good rain, and they'll surprise you with their resilience.

I am five kilometres to the south of Leigh Creek, sitting at a vantage point close to a cave full of macropod poo. SEG have collaborated with the Adelaide Zoo, who are keen to learn more about localised wallaby movements. Seven SEG colleagues are exploring creeklines on the eastern side of the Mt Scott range, the steeper, more rugged and inaccessible the better. Such areas provide ideal habitat for the Yellow Footed Rock Wallaby. We are hoping animals have moved across from their original release site two kilometres away. Their stronghold confined to the

but apart from the obvious, it is a great excuse to explore new areas, keep fit and wear out SEG volunteers. 'Poo searching' is a less invasive method of determining presence or absence compared with the aerial surveying from a helicopter. Wallaby scats tend to be a little more elongated than a similar euro scat with a tapering wick at one end. Finding scats is a job for those who have little fear, who prefer things vertical to horizontal. Caves, crevasses and terrain inaccessible to most other medium sized mammals tend to be preferred by the wallabies, so we have to direct our efforts in these areas.

Our SEG contingent of seven has four representatives from the University of South Australia; Jane, Louise, Leah and Emma. These girls joined SEG in 2000 and were participants in the Gluepot Scientific Expedition. Fleur DeLaine rejoins us again having spent time

wallabies' progress in the Aroona Sanctuary. We are grateful for her organisational expertise, enthusiasm and good humour. Everybody had an enjoyable week, despite a drenching on the first day.

We finished the week without a wallaby siting but with a better understanding of the surrounding terrain and its suitability as wallaby habitat. Much of it is not steep, rugged or three dimensional enough. In area, it is much smaller than our surveying transect close to Arcoona Creek. There are a couple of creeklines with steep vertical walls and well formed caves which look promising, but aren't being utilised at the moment. So, we live in hope, but further our understanding all the time.

The Earth *did* move for you !!

A change in the map datum has resulted in – Australia effectively moving 200 metres North East.

by

Greg Roberts

Well the earth did not really move, but our method of measuring location, grid coordinates, has changed and anyone using maps needs to be aware of the change.

Introduction

Since January 2000, mapping authorities in Australia have migrated to a new coordinate reference system for mapping. Coordinates are what we commonly call the grid references used to plot points on maps for navigation. Until 2000 maps used a coordinate system called Australian Map Grid (AMG) that was based on a Universal Transverse Mercator projection (UTM) from the Australian Geodetic Datum (AGD66 or AGD84). AGD66/AGD84 datum describes a solid spheroidal object (similar shape to a fat smartie) that approximates the shape of the Earth for the Australian continent, however it is not geocentric. Geocentric means the centre of the spheroidal object is at the same location as the centre of mass of the Earth. Whilst this AGD84 suits mapping of Australia, it is unsuitable for other countries. As a result over 100 different datum are used by countries to suit their particular area, keeping in mind that the Earth is a quite irregular shape. With the advent of satellite based navigation systems, such as the NavSTAR Global Positioning System (GPS), and the need for countries to share spatial data in a common reference system, a new datum was required. Satellites orbit the centre of mass of the Earth, so a geocentric datum was the obvious choice. To this end Australia has adopted the Geocentric Datum of Australia (GDA94) as the new datum and revised the coordinate system to Map Grid Australia (MGA).

The result of the new datum is that grid references in the new MGA are

approximately 200 metres north east of grid references for the same location in AMG.

How does this affect SEG Activities?

The Department for Environment and Heritage (DEH) are publishing the next edition of the ubiquitous 1:50,000 topographic map series that are commonly used for our activities. The new editions use MGA as the coordinate system rather than AMG used on previous editions that may impact on planning for activities.

Problems

- If you use coordinates measured to AMG (i.e. from an older map) on new maps with MGA then the location will be in ERROR.
- If you use coordinates measured to MGA (i.e. from a newer map) on new maps with AMG then the location will be in ERROR.
- Adjoining maps using different datum will not align – there will be an approximate 200metre discontinuity.

Solutions

- Ensure that everyone using maps on an activity is using the same edition; this includes leaders and the event organiser. Providing maps to participants, either as originals (expensive) or as colour photocopies of your area of interest will ensure that everyone is on the same map. If photocopies are used then copyright declaration forms can be obtained from Mapland at no cost.
- Check the source details of grid references that you are given (eg. from guidebooks, previous hikes, etc). You should ensure that both use the same datum and grid system or that you use

the map specified by the provider of the grid references.

GPS users

If you use a GPS receiver with your map then you will need to set up the datum and coordinate system to match that of the map.

In the set up of your GPS receiver, set the Datum to WGS-82 and coordinate system to UTM. WGS-82 is a suitably close approximation of GDA94 (within millimetres).

FAQ

How can I identify map that use GDA94?

1. Initially, the user should look at the marginal information on the map. Along with the Legend, Scale and North arrow the marginal information will tell you about the publisher, the print date, the datum and the grid system. If the map uses GDA94 then the datum shown



will be GDA94 and the grid system will be MGA.

2. The map may bear the GDA94 logo shown here.
3. New maps in SA using GDA94 bear the GDA logo and are printed with a pink-brown colour margin.

How do I convert coordinates between AMG and MGA?

Instructions for converting between MGA (or WGS-82) and AMG are located in the marginal information. The process generally involves adding or subtracting a constant value from the easting and northing (or lat, long) as measured from the map. The actual constant is determined for the centre of the

map, so there will be different values for different maps.

Does GDA94 effect geographic coordinates (latitude and longitude)?

Yes. Geographic coordinates or Latitude and Longitude are measured from the centre of the spheroid that is used to model the Earth's surface. Moving from AGD84 to GDA94 alters both the shape and the location of the centroid for the spheroid; therefore it follows that the coordinates of any arbitrary point on the Earth's surface will also be different.

Does GDA affect the map information?

No. The actual information on the map (eg creeks, roads, towns, contours, etc) remains the same. It is only the coordinate system, an imaginary grid draped over the land for human benefit, which has been adjusted.

Are there still maps using AMG ?

Yes. This is why users need to be vigilant. Many maps for areas where the landscape changes slowly (i.e. remote areas compared to an expanding city) have a low priority for reprint. For that reason earlier edition maps are still on the shelves at retail outlets. Additionally, it takes considerable amounts of time to update maps and field check them. The phase in program for new map editions based on GDA94 will be over several years, and the lag of exhausting current stocks of maps from retail outlets will further increase the time. Users need to be aware that there may be clashes when trying to join adjacent maps that use the different datum and that this could be a problem for some time to come. An example is new edition maps for Adelaide and surrounding sheets are available, using MGA, however maps for further away from the metro area are still to be printed.

When using maps of various scales, or maps from different providers of the same area, users should check that all maps use the same datum. Users should check the marginal information on maps produced by interstate agencies for the datum details.

Where can I get further information?

Reference information can be found at <http://www.dehaa.sa.gov.au/mapland/gds.html> - GDA94 in South Australia explained

<http://www.anzlic.org.au/icsm/gdatm/index.html> - Technical explanation of GDA94.

Our thanks to the Scout Association for their kind permission to reprint this article from "Scouting Statewide".

Kids Corner

This time the hidden words are to do with Christmas . They are hidden in all directions. Can you find them all?

S	L	V	P	E	A	C	E	G	H	N	S	G	N	R
W	S	R	G	N	I	K	C	O	T	S	M	I	O	O
A	O	E	A	H	R	R	D	O	E	P	J	F	R	O
M	O	E	T	L	E	Q	W	D	Z	H	Y	T	T	F
I	N	D	A	E	G	X	R	W	A	L	H	S	H	T
S	A	N	S	O	N	S	T	I	N	S	E	L	P	O
T	T	I	Y	N	A	D	I	L	I	N	S	E	O	P
L	I	E	O	E	M	L	G	L	E	E	R	T	L	P
E	V	R	T	S	A	M	T	S	I	R	H	C	E	R
T	I	N	H	O	L	L	Y	S	Z	Z	D	Y	W	E
O	T	W	I	S	E	M	E	N	R	X	K	C	A	S
E	Y	M	A	G	I	C	C	A	V	E	R	W	E	E
X	S	U	A	L	C	A	T	N	A	S	S	V	R	N
R	U	D	O	L	F	S	H	G	I	E	L	S	S	T
C	C	N	X	U	C	H	I	M	N	E	Y	J	J	S

WORD LIST

- | | |
|-----------|------------|
| CHIMNEY | PRESENTS |
| CHRISTMAS | REINDEER |
| ELVES | ROOFTOP |
| GIFTS | RUDOLF |
| GOODWILL | SACK |
| HOLLY | SANTACLAUS |
| MAGICCAVE | SLEIGH |
| MANGER | STAR |
| MISTLETOE | STOCKING |
| NATIVITY | TINSEL |
| NOEL | TOYS |
| NORTHPOLE | TREE |
| PEACE | WISEMEN |

SCIENTIFIC EXPEDITION GROUP CHAIRMAN'S ANNUAL REPORT

7th September 2001

Richard Willing

Welcome to the 17th Annual General Meeting of SEG. The highlights of this report are: Expedition Gluepot; the Gammon Ranges Scientific Project; the Minnowarra Biodiversity Project; SEGments; and future events. We welcome Dr Bob Sharrad, president of the Nature Foundation, as our guest speaker this evening.

EXPEDITION GLUEPOT

This expedition occurred last October at Gluepot, the Birds Australia conservation property north of Waikerie. It differed from our usual format in that the expedition was divided into 3 separate campsites, each with its own leader, doing research tasks in different disciplines and areas, with a strong emphasis on birds and soil structure. The hot weather did little to suppress the enthusiasm of the participants. Duncan McKenzie, the hard-working Chief Leader will tell us some of the highlights later. Other committee members providing invaluable help were Bob Major, Phil Cole, Trent Porter, John Love and Graeme Oats.

MINNAWARRA BIODIVERSITY PROJECT

Minnawarra, the Willing farm near Myponga, has a large amount of scrub dedicated as a Heritage Area. Fencing this has taken several years, but the task is now complete, and domestic animals have been excluded, thus providing the opportunity, as an ongoing project, to document changes in fauna and flora. While regeneration of flora has been shown after fencing off native vegetation, alteration of fauna has not been reliably documented, so this is an opportunity for original research. A pilot survey took place over Easter, with pitfall and Elliott traps opened for 4 nights, belt surveys of the

vegetation, and bird observations at each site daily. Some students from Thailand participated. Although we were blessed with perfect dry, sunny weather they still found it cold in the southern Fleurieu Peninsula. Mammals trapped included bush rats (*Rattus fuscipes*), swamp rats (*R. lutreolus*) and antechinus (*Antechinus flavipes*), mostly males. The next survey, in mid-October, will include invertebrates. See me for further details.

GAMMON RANGES SCIENTIFIC PROJECT (GRASP)

GRASP has been running now for more than 10 years. Four trips to the Gammon plateau were made this year. One trip, memorable for the participants, celebrated the new millennium on January 1st, with a gourmet meal and celebratory fluids consumed on North Tusk Hill. As well as the rainfall monitoring other projects are progressing well, including the Yellow Footed Rock Wallaby survey. Aquatic biology samples are being analysed, the rainfall data for the first ten years are being prepared, and the leaders' reports for the first ten years are being collated. Chris Wright is to be congratulated on his continuing commitment to the program. Details about future trips may be sought from him.

SEGMENTS

In spite of other competing interests and changing jobs Alun Thomas continues the good work as editor of "SEGments", our quarterly bulletin. Alteration in publishing arrangements has slightly increased the cost of production, but Alun's efforts plus some volunteers to help with printing and mailing keep the costs within acceptable limits. Alun also fills the role of SEG Vice-chairman.

FUTURE EVENTS

Encounter 2002.

SEG is involved with one sector of this celebration of the meeting of Captains Flinders and Baudin 200 years ago next year. In March Graeme Oats will lead a small group from Chinaman's Creek, south of Port Augusta to the top of Mt Brown, with collection of botanical specimens on the way, recreating the first European ascent by Flinders' naturalist Robert Brown in 2002.

Expedition Munyaroo.

Next year's annual expedition will occur in Munyaroo Conservation Park on Eyre Peninsula, between Whyalla and Cowell, in September. This park has various habitats which lend themselves to being studied. It will mark SEG's return to Eyre Peninsula after a gap of 10 years. Kingsley Turner, an Eyre Peninsula expert, is working on the scientific program which will include a biodiversity survey.

THE COMMITTEE

Once again I must pay tribute to our hard-working committee, most of which have now been involved for several years, adding stability and a sense of common purpose to our efforts. Since living out of Adelaide I am aware of the increased difficulty of networking, so necessary to being an effective chairman. This will eventually lead to my retirement from this position. Another adverse effect of our move to the country is that the Willings' dining room is no longer available for committee meetings, but alternative venues are being tried. A couple of working bees at Minnowarra have involved several committee members who have cleared trap lines and cleaned up at the end of the survey. For their

contributions to the work through the year special thanks are due to John Love as secretary, Graeme Oats as treasurer, Chris Wright as coordinator of the Gammon Ranges project, Alun Thomas as editor, Duncan McKenzie for his mammal work, and Warren Bonython as our president. Thanks also to John

Hayes, Bob Major, Phil Cole, Trent Porter, Paul Wainwright and Greg Kerr for their continuing help.

SUMMARY

SEG has now been organizing expeditions for 17 years. As a volunteer, non-profit organization this has required a lot of effort on

the part of the committee and leaders. We are grateful also for those sponsors who have generously helped get expeditions on the road. Although small in size, SEG continues to pursue its aims and helps make others environmentally aware, especially young people

EDITORIAL

As many members will know it was necessary to postpone the Minnowarra Biodiversity Survey in October because it was just too wet at Minnowarra. It was still quite wet when the survey went ahead in early to mid November. Only one or two of the pitfall traps still had water in them and so they were not opened.

I did have an opportunity to participate in checking the traps and pitfalls and I doing so we found out why we had not caught any *rattus lutreolus* or *rattus fuscipes* in the pitfalls. After we had released a *rattus lutreolus* which had been caught in an Elliot trap it ran along a fence line and fell into a pitfall. A moment later it leapt out and continued on its way into the undergrowth. It look like the buckets are just not deep enough to hold them. It is well worth participating in one of the surveys and I encourage members to assist in the next survey in autumn.

Our main focus over the next few months will be finalisation of the Encounter 2002 Walk to Mount Brown project and preparation for the Munyeroo Expedition. Assistance is required from scientists of all the natural disciplines and for camp leaders.

The Committee and I wish all readers a Happy Christmas and safe and prosperous New Year.

Alun Thomas

FUTURE PROGRAMME

The Scientific Expedition Group (SEG) welcomes enquiries from all members and friends who are interested in participating in one or more of our projects or expeditions. Please contact the leader or convener of the project or expedition that interests you for more information.

We welcome enquiries from anyone from 16 - 60 years (or more) who would like to participate in our scientific, environmental and educational projects.

Current recurring projects

GRaSP

Gammon Ranges Scientific Project (GRaSP) is now in its thirteenth year. The project involves a four or five day trips to the Gammon Ranges about four or five times a year. It is a data collection project involving flora and fauna and rainfall gauging which also involves bush camping and trekking. Other activities include feral animal counts, fox baiting and yellow footed rock wallaby counts. Expeditions are being planned for December 2001 and Mach 2002.

Contact Chris Wright 8278 8818

Minnawarra

SEG is running a biodiversity project in the Spring Mount area near Myponga based on a number of Heritage Sites on Richard Willing's property, Minnowarra. . The next survey will take place during Autumn 2002. For information contact Richard Willing on mobile phone 0408 807 517.

Future Expeditions

An expedition to Munyeroo on the eastern coast of Eyre Peninsula is in the early stages of planning for September 2002. The Scientific Leader will be Kingsley Turner. For information contact Richard Willing on mobile phone 0408 807 517

SCIENTIFIC EXPEDITION GROUP

The Scientific Expedition Group came into being at a public meeting on 21st August 1984. 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.

Members will receive regular information on S. E. G. activities and expeditions

SUBSCRIPTIONS (Including GST)

Working adult member -----	\$16.50
Pensioner student or unemployed -----	\$11.00
Family membership -----	\$22.00
Organisation membership -----	\$22.00

APPLICATION FOR MEMBERSHIP AND MEMBERSHIP RENEWAL

Name

Address

.....

Telephone (H) (W)

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

.....
.....
.....

Applications should be addressed to : The Hon. Secretary
 Scientific Expedition Group Inc.
 P.O. Box 501
 Unley S.A. 5061

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