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MINNAWARRA BIODIVERSITY PROJECT Spring survey 30 Sep. – 2 Oct. 2006 Written by Richard Willing

This survey was held during the worst drought in recorded Australian history, even affecting the usually fertile Fleurieu Peninsula. The erratic trapping numbers reflected this, with site one apparently acting as a refuge area, while most other sites yielded much smaller captures. Site seven, usually productive, yielded only one skink during the four day trapping period. Bats and invertebrates were not studied on this occasion.

The weather during the survey was fine and warm to hot, with a mild gusty change in the middle period.

Personnel

The start of the survey was delayed by the return of equipment from the Boolcoomatta SEG Expedition held during the previous two weeks. A lot of work was done by a small number of volunteers, particularly Graeme Oats, Jill and Eliza Tugwell, and the Pahl, Furler and Van Vliet families. The capture processing was undertaken by Christina Pahl, Loraine Jansen, Janet Furler and Richard Willing. Claire Gifford and Frances Taylor completed a survey of the birds a couple of weeks after the main survey. A total of 29 people contributed 330 hours of volunteer time to complete the survey.

Mammals

Sites One (edge of NW swamp) and five (bank of creek) appeared to provide refuge areas during these dry times. More than half of the mammals were trapped here. As usual bush rats (*Rattus fuscipes*) were most frequent with 33 new captures and 45 recaptures, mostly at site five.

SEG 2007 Calendar to be provided in March 2007 SEGments

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For swamp rats (R. lutreolus) there were 16 new captures and 20 recaptures and they were most frequent at site one. For antechinus (A. flavipes) numbers were reduced with three new captures and four recaptures. As usual in spring all were female, all bearing 8-10 young in the pouch. There were two black rats (R. rattus) at site one. Surprisingly no mammals were trapped at site seven, normally a productive area. The total native mammal captured was 52 new captures and 69 recaptures. An echidna (Tachyglossus aculeatus) was sighted opportunistically.

Frogs and reptiles

Twenty-one brown froglets (Crinia signifera) were trapped in pits, mostly at sites one and two (near swamps). 28 skinks were trapped including Lamphrolis guichenotii (16), mostly at site four (creekside). Single specimens of Morethia adelaidensis, Pseudomoia entrecasteauxii, Hemiergis decresiensis and Ctenotis robustus were also collected. Whites skink (Egernia whitii) were sighted opportunistically away from the survey sites. One Brown snake (Pseudonaja textiles) was also seen.

Birds

The bird survey was conducted by Claire and Frances a couple of weeks after the main part of the survey. The final numbers are not yet available, but their impression was of a smaller number of birds and species than previously recorded.

Summary

Many thanks to all who helped make this survey a success. The results reflect a difficult time to be a survivor in the bush.

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BOOLCOOMATTA SURPRISE

Written by John Love

Ever since the first European settlement at Boolcoomatta the land has been held as a pastoral lease. It is well beyond the limit of agriculture, and driving along the Barrier Highway you can see why. Nevertheless among implements scattered near the homestead were found a cultivator, a harrow, funnels for a seed drill, cutter blades for a hay mower, a pitch-fork and a chaff cutter. This series of implements represents the complete life cycle of a hay crop - farming at Boolcoomatta! Perhaps the attempt at growing their own hay was inspired by a run of exceptionally good seasons but it is highly unlikely that the investment in farm machinery returned a profit.

It was not the first attempt at farming in the north-east. The South Australian government established an experimental farm of 1280 acres (518 hectares) at Manna Hill, about 70 km south-west of Boolcoomatta, in 1876. This was partly to test the theory, based entirely on wishful thinking, that 'rain follows the plough'. The manager struggled valiantly against high temperatures and low rainfall until drought forced the closure of the farm in 1880.

The use of seed drill and mechanical mower at Boolcoomatta indicates a later date than the 1870s but more expert advice will be necessary before an approximate date can be assigned. One wonders whether the lessee or manager at Boolcoomatta had not heard of the Manna Hill experiment or whether he knowingly defied the odds!

GAMMON RANGES IN THE SUMMER- OR "DOING IT THE HARD WAY"

17-21 Dec 2006 Graham Blair & Chris Wright

At the AGM of the Hydrological Society, Chris gave a talk on the Gammon Ranges Scientific Project which has now been running for nearly 20 years, and explained how simple technical procedures take on a different dimension, when the temperature is 40 degrees, the dust is in your eyes, and flies are crawling up your nose. Professor Culver (retired from Adelaide University) spoke afterwards about doing fieldwork in that area 50+ years ago, and having their Geiger Counter carried

by camels, in 3 separate pieces because it was so bulky and heavy. I suggested that he should write down his experiences to relate to us modern-day scientists and engineers.

This report covers the experiences of Chris Wright and Grahame Blair in the Gammon Ranges during hot weather,

December 2006.

There are 9 sites in the Gammon Ranges that SEG manages, 8 of them measuring rainfall and one stream flow monitoring station (Fig 1 – below and Fig 2 pg. 4). On the July 2006 trip, a Crossover which was hampered by rain, we had very little opportunity for doing battery replacement and maintenance. We decided to do a general overhaul in November and had planned for six of us to spend 3 or 4 days. However, "The best-laid plans of mice and men gang aft agley" (Burns, "To a Mouse") and several of the group went down with the flu just before the start so we had to cancel the trip.

This left us with the situation that both sets of batteries for the dual data loggers at each site were dangerously low- with no backup. The Arcoona Creek pressure transducers badly needed maintenance, and the 3 pluviometers in Station country needed their CDMA modem units replaced for daily communications with the Weather Bureau in Kent Town.

Chris Wright and Graham Blair decided on a lightning trip of 3 days, squeezed into a busy schedule just before Christmas and with the prospect of very hot conditions.

Sunday 17 Dec 1:45pm - we loaded up Graham's new Subaru and headed north, stopping briefly at Hawker for petrol, and arrived at Arcoona Creek just on dark at 8:30

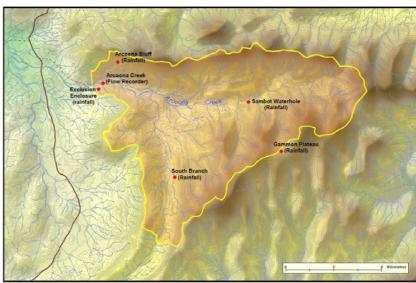


Fig: 1 Monitoring in Arcoona Creek Catchment - Gammon Ranges National Park

pm. Conditions were dry, dry, dry the night was cool and the camp area smelled overpoweringly of dead goat.

Monday 18 Dec - we woke at 5:00 am thanks to my mobile phone alarm. Graham had sorted and checked all the gear the night before and selected exactly what we needed. The tasks for the day were:

- Plateau and Sambot Pluviometers both needed new Davill loggers, to replace the old Cherryville loggers which are 14 years old, with heavy batteries and which need a laptop computer to download and change the memory modules. -both needed their H-S loggers (cigarette packed size) replaced. The new Davill loggers are designed to be able to last for up to 2 years on a set of batteries.
- The Arcoona South logger needed an H-S logger replacement, and servicing of the Cherryville logger, one last time, ready for replacement with a Davill in February.

Graham packed the stuff for Arcoona South separately, to be left in a cave on the way up the main creek, saving the need to carry extra gear. We left at 6:00am on the dot, a cool morning - and were at Vandenberg by 8:15am. We dumped packs and loaded a day-pack with a bit of water and food, plus the new Davill, and an H-S logger and set off up North Tusk Hill which we reach by 9:20am, and continued to the Plateau Pluvio, arriving by 10:10am (4 hours 10 min from the vehicle). Graham got busy with checking and found the batteries flat on both the Cherryville and H-S loggers!! - a timely visit indeed and we may have lost some data from this site. Graham fitted the new Davill without difficulty while Chris did exchange of the H-S logger which sits inside the Pluviometer housing, checked that the little light flashed, checked and recorded battery voltages and we were on our way back, carrying the old Cherryville and its batteries. As I recall it was starting to get hot. The skies were clear and the sun had a bite to it.

We left the plateau at 10:50am and were back at our packs by 12:26pm with the heat building up, but lovely cool breezes appearing from nowhere to encourage us. Sambot pluvio was the next to be done – about 10 minutes walk up the creek. This instrument was in better shape as the H-S logger had been replaced in July and the Cherryville logger battery voltage was just high enough to keep it operating. So Graham

installed the 2nd Davill logger, and another Cherryville had to be carried home. At 2:10pm we left Vandenberg, arriving at Wild Ass Creek waterhole at 3:00pm.

After a quick breather, we continued to the South Branch junction with Arcoona Creek finding the Husky (laptop) and equipment for Arcoona South pluvio, safe in its cave. This was time for discussion, what to do? The walk to Arcoona South pluvio was some 4 km - through winding gorges and timbered plains, and if we didn't do it then, it would mean having to come back on Tuesday. So we loaded up the gear, leaving the packs and heavier equipment and set off at 3:50pm, both of us struggling with tired legs and the heat around 39 degrees Celsius. By the time we staggered up the last rise to the pluvio; Chris was suffering from heat exhaustion. Graham applied quick treatment by pouring water from the pluviometer storage drum all over his head, neck and shirt, and while Chris lay in the shade recovering, Graham downloaded the data, serviced the Cherryville and changed H-S loggers. Chris' legs were cramping fairly badly at that stage, but regular doses of electrolyte (sugar and salts) helped to ease the pains. We left Arcoona South pluvio at 5:50pm - thankfully the heat of the day was easing and we made quite good time back to the packs, with periodic bouts of cramp.

Once back at the junction, we had to decide what to do? We were longing to get back to the vehicle if for no other reason than we still had a lot of work to do on the following day and Graham's feet were bothering him due to pressure points from his boots, plus blisters. Chris' cramps seemed a little easier, but each time he had to take a step up a bank or over a dead log, they would grip again. Anyway we set off, and with occasional help from Graham's telescopic Alpine stick, Chris managed to climb the first section of the short-cut - after that, it was all downhill and we staggered into camp at 8:30 pm, in the last of the fading light. The stink of dead goat seemed even stronger, so we drove back to the Expedition '96 camp site, near the boundary fence.

That was a long day! And dehydration had been a major problem. Graham's supply of electrolyte was an enormous help. Dinner that night was Back-country stew, just pour boiling water into the packet and wait!! As an aside, we weighed Chris' pack when we got to the car and he was carrying just on 30 kg! Graham had about the same. Distance

travelled was 30.5 km. What a day, but we did sleep well.

Tuesday 19 Dec – we were walking by 7:00 am. We decided to visit Arcoona Bluff pluvio first, on top of the ridge, and the halfway point on the Rock Wallaby circuit - as the H-S logger needed to be replaced. We also had a pile of gear that we needed to pull apart and service the streamflow recorder. We dumped it close to the gauging station at 7:20am then headed up the Bluff via Wallaby Creek. We got to the pluvio at 8:10am, and by 8:25am we were on our way down the hill again - the skies were cloudy and the heat not too bad. At the gauging station there was plenty of work to be done, removing the Conductivity meter (not viable in these conditions) and taking out 1 of the 2 pressure sensors for checking in Adelaide. There were a few problems, mainly trying to draw the cables out of the conduit, stuck with dust and silicone sealer, but eased by pouring some water down the pipe. We were able to check the remaining sensor was working. We will return next year with solar panels and better protection from the sun for the transducers.

After a quick wander across to the Exclosure pluvio site, and doing the (by now) routine logger swap and data download, we returned to the vehicle burdened down with about 40 kg of gear.

With all work finished and the camp packed up, we drove away, stopping briefly at Owieandana for a chat with Kylie – then on to Maynard's Well. We had had trouble with

each of the CDMA-logger units. These can be dialled from Adelaide, with the help of the CDMA network and the repeater station at Mt Scott (Leigh Creek). Unfortunately a fault had caused each unit to "lock up" for some reason. We brought them all back to Adelaide for diagnosis and remedy and running on test for a few weeks. So this trip was the chance to put back the boxes and (hopefully) they will operate satisfactorily. At Maynard's Well everything went back without Graham checked the logger difficulty. configuration using the SEG iPag (pocket computer), while Chris changed the H-S logger. Temperatures were back up around 40C. All was well and we drove across to say hello to the Nichols family, enjoy a chat and a glass of cool water. To our surprise and delight Gina Nichols presented us with a bag of cherries - part of a box that someone had brought up to them from Adelaide Central Market the day before. That was a real treat. We said goodbye and made plenty of wishes for some rain to ease the drought – and then we were on our way again via the Copley Road.

After a stop to repair a puncture we arrived at North Moolooloo where lan Ferguson greeted us and gave us a drink. Then on we went to Pfitzner's Well pluviometer, fixed the box back in place and changed the H-S logger, then back to the Moolooloo site to do the last one. It was very hot, but the car airconditioning was wonderful, and something that Bob Culver and his camels never had!

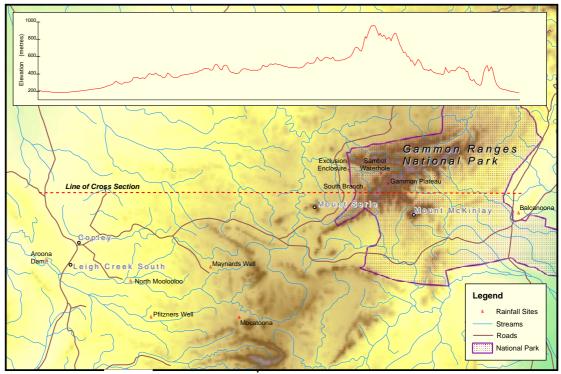


Fig: 2 Cross Section of the Northern Flinders Ranges

We drove back to the Prairie Hotel at Parachilna and booked into one of the cabins for the night, and had an excellent dinner. There were surprisingly many visitors, most of them from Germany, on a bus tour. Two coal trains rumbled past in the night, 181 wagons plus locomotives, but Chris never heard either of them. His snores must have drowned out the noise.

By the end of the trip, the following tasks had been done:

- The Plateau and Sambot pluviometer sites were fully refurbished;
- b) Arcoona South and Exclosure sites services and operational;
- Arcoona Creek gauging stations operational, in good order but with no backup;
- d) Arcoona Bluff pluvio fully operational
- e) Pluvios at Maynard's Well,
 Pfitzner's Well and North
 Moolooloo back in order and
 sending data each day to Kent
 Town.

GRaSP Rainfall recorded in late Dec 2006:

Maynard's Well	17mm, Dec 22
Pfitzner's Well	13.4mm, Dec 23
N.Moolooloo	10.4 mm, Dec 23
Arcoona Bluff	17.8 mm, Dec 23

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The March issue of SEGments will include further information on the Gammon Ranges Project as presented in 2006 to the Hydrological Society by Chris Wright.

Extract from South Coast Track, Tasmania, February 2006 Bushwalk

Melaleuca to Cockle Creek
Walkers: Phil Davill, Chris Wright, Janet Davill

Friday 10/02/06 Longwood to Melaleuca via Hobart Janet's account:

We caught the Virgin Blue direct flight from Adelaide to Hobart and had a bumpy and swaying landing. We met Chris McGeorge (the Hobart BOM hydrologist) who has kindly offered to stow our civilized bags at the Bureau for us. He was hosting Chris Wright after the walk and taking him trout fishing. Chris McGeorge wished us well as we shouldered our packs and trudged over to the Tasair office building. (As we disembarked from our Virgin 'plane, we could

see all Tasair's neat little green and white Cessna sardine tin 'planes lined up on the apron over the way.)

We were greeted by a cheerful young man who was to be our pilot. He took down our particulars and the weights of us and our packs. With all the paperwork done, we hefted our packs and went over to the largest of three Cessnas. We got a good view of a Jetstar passenger jet landing. It too wobbled and side slipped in the wind, landing on one wheel and then the other. Our pilot gave us a safety talk and handed us a little yellow plastic package to clip around our waists.

The cloud was down too low for going over the mountainous inland route, so we flew down the coast. My pack was loaded behind the back of the 6 seats and the men's packs were strapped into the 2 back seats. Phil had the front seat by the pilot, as he was officially the heaviest, and Chris and I wiggled into the 2 middle seats. There are ear phones for all but as the intercom was on the fritz, we only heard the pilot's communications with the tower and other planes. I had a quick survey of the control panel and could not see any knobs missing or switches hanging by frayed wires so hopefully that is all that was broken.

We taxied out and waited for a Virgin Blue to take off and another Jetstar to land. Then it was our turn to move out onto the runway and take-off. The little plane roared off down the strip and lifted off. The pilot immediately banked to the left as we climb and we headed SW over the Derwent and past the city and then on down the coast past Bruny Island and some fish farms. We spotted various features we would walk past – or over and across. South Cape Range, Precipitous Bluff, the Maatsuyker Island group, Louisa Bay and finally Cox Bight. The pilot gave us a map to follow.

We turned right and head up the valley leading into Melaleuca and I saw the white path of the walking track threading its way below. The pilot over-flew the white landing strip to check its state and then circled around to land. This gave us views all around Melaleuca and a birds eye view of the tin mining marks. The button grass appeared to be rapidly overgrown in places. We zoomed down for a three bump landing.

We nipped into the shed by the airstrip and the pilot dispensed our pre ordered 4L of meths. I presumed they bring it in by boat – or may be they have a special meths and

shellite delivery flight? The pilot got back into the 'plane, checked flaps etc., taxis to the end of the runway and took off. The 'plane was soon a buzzing white dot away to the south and disappeared shortly after that behind the heights of the Bathurst Range, that forms the eastern side of the valley we were in. Feeling a little bereft and abandoned to our own resources we gathered our packs and now full metho bottles.



Point Eric and Freney Lagoon at Cox Bight.

Chris takes up the story:

For those who have read Lord of the Rings, walking the South Coast Track has a lot in common with the journey of the Hobbits through forests and up on to wild moors, never quite knowing who or what would be round the next corner, coping with all sorts of circumstances.

The Track runs from Melaleuca, a spot near the south west corner of Tasmania where alluvial mining of tin has been under way for 100 years or so. Deny King and his father, Charles, mined it for many years. Deny died a few years ago but the mining is continued by Peter and Barbara Wilson, an elderly couple who brave all kinds of weather in this remote. beautiful and desolate spot. After studying the maps of the South Coast, I thought that tracking our course from the air would be easy, but the rapidly changing panorama and the clouds over the higher peaks confused me and it was not until we had covered the first 60 km that I could recognise the bays and mountain ranges that we would be visiting on foot. I could not see our path either, which was a bit of a concern - 80 km that we would have to walk to reach supplies of food and civilisation.

We made our way up a path leading eastwards to the public huts. We noted a side track and a sign posted to the bird hide, which is part of the Orange Bellied Parrot observation project by Birds Australia. Chris had been in contact with Wally Mounster, who had walked the South Coast Track a few weeks ago, and Wally recommended that we overnight at Melaleuca and go to the bird hide early next morning, before walking out, to see the parrots. We came to the Charles King Memorial Hut, built in the Nissen Hut style and looked inside. No one is within and there is no sign of anyone's gear so we 'move in'.

We also looked at the camp spots in the teatree grove area but the hut was too tempting and it looked a little showery to get the tents wet just yet – plenty of time for that I'm sure. We met one of the volunteer bird observers down by the lagoon edge and had a yarn about the parrots and his past job with the omnipotent Hydro. Everyone we met seemed to have worked for them at some stage. I took a few shots of Melaleuca Lagoon and noticed another man along the shore having a quiet ciggie and a cup of something. I did not intrude on his contemplation of the beautiful still waters and the mountains beyond to the northeast.



The Charles King Memorial Hut

The hut had 3 sets of double bunks and a huge and beautiful Huon pine table. This was donated to the hut and a small sign was on it to deter the more dense individuals from putting their fuel stoves on it. There was also a built bench just below the front window for cooking on. This allowed illumination by the enduring twilight. It was getting on for 7:00pm as we entered the luxury of this dear old hut with its bent, undressed timber rafters. There was a stone and mortar fireplace but the chimney had been disconnected. The area is a 'fuel stove only' area now as people who do not know how to handle fires and light them at the wrong time and in the wrong place and have caused damage in the past. However, cosy and cheery times must have been spent by privileged walkers in this hut, by this

fireplace, in the past. Those times are gone and we certainly have no regrets as we can understand the reasoning.

We got out the trangias and the food to get things cooking while we set up our beds. Chris surprised us by producing a bottle of Piramimma Shiraz from his pack, not unlike a magician pulling a rabbit out of a hat. While I cooked, the men went out for a short exploratory foray. I managed to get all the pasta, peas and corned beef into one pot, although it is like a magic pudding that keeps expanding as it cooks. The men returned and we dined by candle light as the hut was very dark within, even though it was still light outside.

There were two smallish windows, one in either end wall and there was one panel of clear 'ensalite' – all to let in natural light. They did supply plenty of light to see well enough for most things near the windows. We then had Aunt Betty's light fruit puddings and custard, followed by coffee. A very swanky evening to start what was to be a very hard walk.

We had a post-prandial stretch of legs by walking back to overlook the airstrip in the fading light. There we meet Norbert, the man I saw by the lagoon. He was sitting having another quiet ciggie and cuppa. He appeared to be a character and told us he was a stone sculptor from Gordon, near Kettering, just south of Hobart. He was doing the track for the umpteenth time. He was very friendly in a gentle, restrained way. He was instantly likeable and I guessed we would see more of him along the track in the days to come. After gaining a few tips about the track from him, we wandered back to the hut in the deepening dusk.

The bunks turned out to be very comfortable. We set alarms for 6:30am so that we could visit the hide in time for parrot feeding time at 7:00am. We settled into our respective bags, each claiming that they would snore the loudest and keep the others awake. I heard a few good showers of Tasmanian rain on the roof in the night.

The March issue of SEGments will include further extracts from the South Track Walk.

SEG SUBSCRIPTION RENEWAL

Like most voluntary organisations, SEG relies heavily on its supporters to keep it operating. Over the years (since 1984) we have had many who have continuously renewed subscriptions annually.

This year however, only a handful of members have renewed subscriptions. I urge you to continue your support by renewing membership. I will be posting to those people who have not renewed membership this year or in the 1-2 previous years.

If you receive a notice from SEG please complete the renewal form that you receive or the one on the last page of this issue of SEGments. There is also a form on our website (see the last page for the URL).

Thanks in anticipation for your continued support in 2007.

Graeme Oats. Hon. Treasurer.

Kids Corner

The hidden words are taken from words in the article "Extract from South Coast Track Tasmania, February 2006 Bushwalk". The words are hidden in all directions. Can you find them all?

Word List

Puddings Melaleuca
Trangias Cape
Hobart Range
Lagoon Mountainous
Panorama Parrots
Coast Showery

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



SCIENTIFIC EXPEDITION GROUP - Membership

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 receive regular information on SEG activities and expeditions

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SEG COMMITTEE Office Bearers President Dr Richard Willing Alun Thomas Chairman Vice-Chairman John Hayes Hon. Secretary John Love Hon. Treasurer Graeme Oats

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