# Friends of Mound Springs

ISSUE 5, OCTOBER 2007 ABN 965 837 602 66

DATES OF INTEREST:

- **Glendambo B & S Ball, SA 24 November 2007**
- **5th National Water watch Conference, ANU, ACT 26-29 November 2007**
- **Cameron Corner Tristate New Years Eve Bash, NSW 31 December 2007**
- **Friends of Parks Forum, Flinders Ranges National Park, SA 15-17 August 2008**
- **Next FOMS Meeting February 2008 Further Details TBA**

Mary Hewsons grave at Strangways Source: Rick Moore

Contributions to the Newsletter may be emailed to the Publicity Officer (details on last page)

## President's Message

Remaining Telegraph Pole at Strangways springs Source: John & Leigh Childs

Since our last Newsletter the first Annual General Meeting of FOMS has been held, with all current office holders returned to their positions. It is pleasing to have our office holders continue their good work for FOMS and I am most appreciative of the efforts they are willing to make on behalf of the Group. At the same time, I believe that it is important to have some movement in our ranks and I would encourage all members to think about this over the next twelve months. The forthcoming year will certainly provide plenty of focus for FOMS, with much membership interest in the exchange of information and ideas through meetings and the pages of this Newsletter, and through more field trips of the kind that we ran so successfully earlier this year. In addition to this it will be necessary for FOMS to help the Friends of Arid Recovery with the lead-up organisation and running of the annual Statewide Friends Forum to be held at Roxby Downs in 2010, potentially a large task for us, but a rewarding one.

There will also be a need for us to watch closely a number of major resource development projects which could, if progressed, place heavy demands on the water resources of the Great Artesian Basin (GAB). BHP Billiton's expansion plans for the Olympic Dam mine are, of course, enormous in their implications on many fronts, although at this stage the Company clearly favours desalination of sea water over the use of GAB waters. Whilst many will be relieved that this removes a potential threat to the springs, the threat to the marine environment of Upper Spencer Gulf from the discharge of hypersaline wastes is troubling others. In the Arckaringa Basin west of Oodnadatta Altona Resources is currently conducting a feasibility study for the open cut extraction of coal and if this progresses dewatering will remove very large volumes of GAB water. Large volumes of GAB water will also be needed if Marathon Resources proceeds with a proposed underground uranium mine at Mt Gee near Arkaroola in the northern Flinders Ranges. One of FOMS' roles is to monitor closely any processes that might threaten the ground water dependent plants and animals of the mound springs and in this context any developments requiring large volumes of GAB water will need our critical scrutiny.

An opportunity to project the interest and value of the springs to an international audience will arise later this year when FOMS member Rick Moore and I head north with a BBC television crew for filming in the heart of the springs country between Marree and Oodnadatta. Out of it will come a one hour documentary (one of a series the BBC crew is making) on the desert environment, human survival in that country and the traditional role of mound springs in supporting human occupation. In the wake of our earlier field trip Editor Anne Pye has in this Newsletter a focus on Strangways Springs. Heritage listed at both State and National levels, Strangways Springs is a remarkable collection of springs and in many ways the site is an exemplar of the role played by springs in supporting human activity in what would otherwise be a very hostile environment. Recently upgraded interpretative information installed by the Heritage Branch of the Department for Environment & Heritage provides excellent information for the travelling public .

Best wishes, **Colin Harris**, President, Friends of Mound Springs

## Report of the AGM 2007

The fourth FOMS meeting took place on 20 September 2007 in Adelaide. This was our Annual General Meeting. The meeting was well attended and our patron Barbara Hardy brought a wine donation which added to the conviviality of the night. The AGM component of the meeting was painless, with all office-holders agreeing to continue for a further year. Travis Gotch provided an update on the National Water Initiative (NWI) GAB project noting that the current stage of NWI funding has concluded but that further NWI funds are being sought. Work done to date includes collation of GAB satellite imagery, a GAB and GAB springs bibliography, and a draft report on the assessment of threats to spring groups. Travis also said that date palm control works at Dalhousie have been very effective. Lynn Brake noted that the GAB Coordinating Committee is showing interest in FOMS and also suggested that a visit to springs in NSW and Queensland would be instructive. Colin Harris informed the meeting that an interesting CD, "The Living Oodnadatta Track", is now available from the Northern Regional Development Board (PO Box 940, Coober Pedy 5723 www.nrb.com.au). FOMS is now turning its attention to its 2008 program. Whereas the 2007 field trip was largely a familiarisation exercise, it is intended that the 2008 field trip will include practical activities to support mound spring conservation and management.

## Henry Bull Templar Strangways (1832 –1920 )

Strangways was born in England in 1832 and moved to Adelaide in 1857 as a solicitor. He was an MP from 1858, Mayor of Glenelg 1862-1866 and SA State Premier from 1868 – 1870 when his government lost power. He was responsible for legislation creating agricultural areas with credit purchases, and was prominent in initiating railways in SA and the Overland Telegraph. Strangways returned to England in 1871. Source: *http://www.adb.online.anu.edu.au/biogs/A060221b.htm*


Source: Google Earth

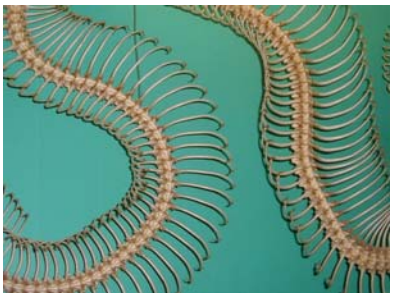
# Jarntimarra Database: (Strangways from Mars)

**Longitude**:136°33.147'E **Latitude**: 29°9.88'S
**Access**: 37km south of William Creek, and 1km west of the Oodnadatta Track.
**Geology** : Strangways springs forms an elongated dome about 3 kilometres long by 2 kilometres wide and up to 10 metres high. This area has numerous circular mounds formed by spring activity that are dispersed irregularly over this larger structure; they are up to 10 metres wide and 3 metres high. The mounds show various levels of active growth from old degraded mounds with little visible structure, to ones with a distinct crater at the summit with fine sediment and vegetation, to a few that contain standing water as well as vegetation
The mounds are built up of irregularly layered limestone tufa – calcium carbonate deposited around reeds and other vegetation. In places, secondary white calcites together with black manganese oxides have been deposited in veins and irregular spaces. The crater-like features at the summit show a distinct soft inner portion with or without water and distinct from a hardened outer rim. The mounds were clearly built up by outflow of mineralising water that progressively deposited layers of calcium carbonate much like that of a volcano.
**Climate**: The average annual monthly minimum temperature is 5 degrees Celsius (July) and the average annual monthly maximum temperature is 36 °C. The average annual rainfall is 150mm.

Water Tank at Strangways Source: Rick Moore

**History**: The mounds have provided valuable water for Aborigines for hundreds of years and have also been an important source for Europeans in this inhospitable climate. The sites were once thought to be volcanic cones. Discovered in 1858 by Major Peter Warburton, this was the site of a homestead, a yard, a woolshed, a cemetery and a water tank. In the 1870's Strangways was used as a repeater station on the Overland Telegraph Line and used until 1896. The ruins of many buildings still remain at the site.
Source: http://www.marssociety.org.au/jnt/jnt-db/Australia-SA_Strangways.html

# Pangki Warrunha (Strangways Springs)



Source: http://www.pbase.com/terryballard/image/34138161

"There are many springs around Strangways, most of them close to the old Telegraph Station but some on the other (northeast) side of the old main Marree– Oodnadatta road, easily visible as the road approaches the Warriner Creek or *Warditji Karla.* Some of the mound springs are extinct and a few still active, but they all form part of the one mythological site ***Panki Warrunha*** 'White Ribs.'

Solanum quadriloculatum (bush tomato)
Source: Sue Black

The myth to which this site refers is that of the two ancestral Snakes, ***Kukari*** the green Snake and ***Yurkunangku*** the Red-Bellied Black Snake. They have traveled from far away ...and they have had many adventures....They are now travelling south from Toogamoona Creek *Thungka-marna*, having their mouths full of solanum berries. They camp overnight at Strangways and waking in the morning they say " *mathapurda ngunanayi arimpa pangki warru-thirnda-ki, warritharu yukarndinaru"* "Eh, old fellow, my friend, our ribs have turned white! It's because we have traveled such a long way!"

The many mound springs around Strangways, both active and extinct, do in fact have bands of white silcrete that look like the ribs of snakes.

*Quoted from SA Dept of Environment & Planning(1986)* ***Heritage of the Mound Springs: The assessment of Aboriginal Cultural Significance of Mound Springs in South Australia*** *prepared by Dr Luise Hercus & Dr Peter Sutton.*

# The Black-fronted Dotterel

The Black-fronted Dotterel (*Elseyornis melanops*) is one of the most widespread resident waders of mainland Australia, but although it follows rivers to the coast, it is rarely found on beaches. Instead it inhabits the shores of lakes, swamps and river edges and is found on isolated claypans, receding shallow floodwaters and the wetlands of the inland.

On the June 2007 FOMS trip, Black-fronted Dotterels were seen on the Margaret and at Levi Springs. The group who visited the south of Wabma Kadarbu on Tuesday afternoon, crossed the Margaret on their way to and from Mt Hamilton. On the water of the Margaret were Black Swans, and Pacific Black Ducks; and a Black-fronted Dotterel flew across in front of the lead vehicle. On our return, Colin Harris noticed the Dotterel using its distraction display on the stony creek bed, fluttering to lead it away from its eggs.

The two vehicles stopped as the little bird settled on its three mottled eggs, the nest just a scrape in the pebbles. The Dotterel's strikingly patterned black, brown and white plumage blending into the surrounds and making the still bird difficult to see. With the vehicles only a metre or so away the bird trusted its camouflage and sat tight with the cars towering above it. We took photos and hoped the bird managed to raise a family without interference from dingoes or ravens.

On Thursday a pair of Black-fronted Dotterels were seen flying off from Levi Springs. These springs had a nice little area of shallow water with a sandy shingle surround suitable for foraging by small wading birds. Inland shallow fresh water is a common habitat for these Dotterels, which also feed on the edges of dams and are thought to have spread in distribution with the building of farm dams. When incubating eggs in the extreme inland heat, the Dotterel parents will shade rather than brood their eggs.

The courage of the Margaret Black-fronted Dotterel is typical of the species. In *The Shorebirds of Australia* there is a report of a Black-fronted Dotterel pair nesting between railway tracks in a shunting yard at the Adelaide railway yards. The parents stayed on the nest when carriages passed over their heads. Heather Woods and I greatly admired the courage of the Dotterel on the Margaret. We voted it the bravest bird on the FOMS trip and felt it typified the spirit of the Outback.

Written & Photo by Sue Black Further information available from *Pizzey & Knight (1997) The Field Guide to the Birds of Australia* and from *Pringle (1987) The National Photographic Index of Australian Wildlife: The Shorebirds of Australia.*

# Red sky at night…jackaroo's delight..


"Weather systems in temperate climates tend to move from west to east ..due to the combined effect of temperature and the Earth's rotation on the movement of air around the globe...so a red sky at night means that though there are clouds above you, it is fairly cloud free to the west (where the sun is setting) which allows the ruby light to flood up below them. Clear skies to the west mean there is a fair chance of clear weather approaching…..

When the Sun is low on the horizon, the light reflected off the clouds only reaches us once it has passed through a long tangential slice of the atmosphere. Indeed, since the atmosphere tends to bend the light around the curve of the Earth, rays from near the horizon can pass through as much as forty times more atmosphere than those coming straight down from a high Sun.

At this angle, the light reflects off the cloud and reaches the cloudspotter only after most of the short (blue and violet looking) wavelengths have been scattered away by the molecules and particles in the atmosphere. The longer, red-looking wavelengths make it through largely unimpeded……..when the Sun is just above the horizon, light reflected off the low clouds will have passed through more of the atmosphere, and so appear redder, than that from high ones. A low Sun therefore colour codes the cloud altitudes: the highest ones being bright white, the mid-level golden and the lowest red. When the Sun is just below the horizon, the lower clouds become dark, in the shadow cast by the Earth." Quoted from Gavin Pretor-Pinney ***The Cloudspotter's Guide*** available from www.cloudappreciationsociety.org or a good bookshop

# The Overland Telegraph & Ghan Railway

In November 1862 Strangways was taken up under pastoral lease by a syndicate consisting of John Warren, Julius Jeffreys and William Bakewell. By 1863 3000 ewes, 300 rams and 40 head of cattle had reached the springs. Unaware of a developing drought the syndicate brought in a further 3500 sheep and by 1865 half the livestock and cattle had died. The drought ended in 1866 and the pastoralists continued their activities, with wool being carted to Port Augusta and sold to English markets. Many structures were built for the pastoral run including a head station and dry-stone wall yards. In 1870 Strangways was selected as a site for one of the repeater stations of the Overland Telegraph and the pastoral activities were re-located over a period of years to nearby Anna Creek.

In 1870 construction of a 3178km Overland Telegraph line from Port Augusta to Port Darwin, was commenced to speed up communication between England and the isolated colonies of Australia. Strangways was one of the many repeater stations established at intervals of ~250 km to re-transmit the telegraph signals along the line. Construction of the telegraph line involved tremendous effort. Some 36,000 poles had to be erected across the continent and hauled many kilometres by horses and bullocks into arid land through searing heat. Overall control of the project was given to Charles Todd, then SA Postmaster General, Superintendent of Telegraphs and Govt. Astronomer...The working parties persisted and on 22 August 1872 the final link of the telegraph line was made. Strangways Repeater Station and Telegraph Office opened officially on the same day.

In June 1882 plans were announced to extend the ' Great Northern Railway" from Farina to Hergott Springs ( now Marree). The track reached Herrgott in 1884, and in July construction was started on the next section to Strangways Springs. Five to six hundred unemployed men, recruited from Adelaide, traveled northwards temporarily residing in the area and increasing the level of activity at Strangways. A canvas and iron settlement arose about two km north east of the repeater station with temporary structures such as Bennett's Eating House and Store catering for railway workers, iron sheds for clerks, and tents for a butcher and saddler. More substantial structures came with a hotel built in 1886, and a police station erected in the same year to deter sly grog sellers (with little success by all accounts). Race meetings kept workers entertained. Following completion of railway construction to Oodnadatta in 1891 most of the workers left, resulting in the closure of the police station a few years later. Strangways was an important centre for many years , but on October 1896 its post and telegraph services were closed and transferred to the nearby town of William Creek on the recently completed Marree – Oodnadatta Railway.

*Source : http://www.environment.sa.gov.au/heritage/pdfs/showcasing/strangways.pdf*

# Stuart near Strangways Springs

**Thursday, 10th November,1859 : Strangway Springs.** Suffering very much from bad eyes and the effects of the water of these springs; cannot help it, but must go and examine the country to north-west and west. Sent Muller to the east in search of springs, with instructions to strike my former tracks and examine all the country between. Started at 7 a.m. with one man, on a course of 315 degrees, and at one mile crossed a salt creek with water; at three miles the sand hills commenced, crossing our course at right angles. At 2 p.m. struck a large lagoon (salt) about two miles broad and five miles long, running north-east and south-west, narrowing at the ends; distance, fourteen miles; tried to cross it but found it too boggy; rounded it on the south-west point, where we discovered a spring; no surface water, but soft, and the same all round for about two acres square, covered with grass reeds of a very dark colour and very thick, showing the presence of water underneath. Proceeded round the lagoon to a high hill, which seemed to have reeds upon the top of it; after a good deal of bogging and crossing the bends of the lagoon, we arrived at the hill, and found it to be very remarkable. Its colour is dark-green from the reeds and rushes and water-grass which cover it. It is upwards of one hundred feet high, the lower part red sand; but a little higher up is a course of limestone. On the top is a black soil, sand and clay, through and over which the water trickles, and then filters through the sand into the lagoon. Where the water is, on the top, it is upwards of one hundred feet long. Immense numbers of tracks of emus and wild dogs, also some native tracks, all fresh. On the north-west side there is one solitary gum-tree, and about half a mile in the same direction is another bed of reeds, and a spring with water in it. All the banks round the lagoon are of a spongy nature. I am very glad I have found this; it will be another day's stage with water nearer to the Spring of Hope. We can now make that in one day, if we can get an early start. By the discovery of springs on this trip, the road can now be travelled to the furthest water that I saw on my last trip from Adelaide, and not be a night without water for the horses. The country to the south and south-east of the last springs (which I have named the William Springs, after the youngest son of John Chambers, Esquire), is sand hills and valleys, rich in grass and other food for cattle. Thence I proceeded to hill bearing 10 degrees south of north, distant three miles, from the top of which I could see no rising ground to the westward, nothing but sand hills. Changed my course to south, to a white place under some stony hills; at ten miles reached it, and found it to be a salt creek, but no springs. The last ten miles were through hills not so high as those I crossed on my way out, but more broken, with plenty of feed. It is my intention to push for the Strangway Springs tonight, so as to get an early start in the morning. Arrived at 10 p.m., found that one of the horses had not been seen all day; something always does go wrong when I am away; I shall have to make a search for him in the morning. My eyes very bad from the effects of the glare of the sun on the sand hills, and the heat reflected from them, and that everlasting torment, the flies.

**Friday, 11th November, 1859 :Strangway Springs.** My eyes so bad I cannot see; unable to go myself in search of the missing horse; despatched two of the men at daybreak to circuit the spring, and cut her tracks if she has left them. They have returned, but can see no tracks leaving the spring; she must be concealed among the reeds; sent three men to examine them. They found her at 1 p.m. Started at 2 p.m., and arrived at William Springs at sundown. Distance, fourteen miles. By keeping a little more to the east, the sand hills can nearly be avoided, and a good road over stony country, with good feed, can be had to this spring.

*Quoted from John McDouall Stuart (1864)" Explorations in Australia, The Journals of John McDouall Stuart When He Fixed The Centre Of The Continent And Successfully Crossed It From Sea To Sea"*

# Geology

Source: John & Leigh Childs

Silcretes are very hard layers of silica($SiO^2$)-enriched material formed near or below the soil surface. They range from silica-cemented sand and gravel to an amorphous matrix enriched with small silica particles. Silcretes are found in many deserts and are a prominent feature in Australian deserts. Silcrete tends to form roughly horizontal, almost impenetrable layers of less than 5 m thick. When exposed by erosion, silcrete forms highly resistant breakaways. Silcretes may be the product of precipitation from ground water, or of the capillary rise of silica-rich water into the soil above the water table in arid and semi-arid climates. Residual surfaces of silcrete are common throughout the stony deserts of northern South Australia where they are often described as gibber tablelands. Progressive break-up of the silcrete surface produces the well-known and frequently weather-worn gibber rocks. Source: www.tec.army.mil/research/products/desert_guide/lsmsheet/lssilc.htm

# Supply ships of the Desert

In 1860 the first Muslim cameleers arrived in Australia to join the Burke & Wills Expedition. By 1901 there were estimated to be between 2 and 4 thousand 'cameleers' in Australia. Although generally referred to as 'Afghans' this first generation came from both India and Afghanistan. It was Afghans and their camels who gave access to the vast interior. The cameleers laboured across the continent, carting produce, water, mail and equipment at a time when roads and railways were still limited in their reach. They proved themselves during the construction of the Overland Telegraph Line 1870-172. They were used in both the survey and construction work, carrying loads of materials into otherwise impenetrable country. "The workers were able to forge ahead into the arid unknown for they could be assured of regular and reliable service and supply by the camels and cameleers. Horses and bullocks often could not travel the long waterless stretches with any degree of reliability". They also accompanied exploration parties into the little-known interior. Cameleers assisted all the major expeditions into Australia's uncharted interior, starting with the Burke and Wills expedition in 1860 and ending with the Madigan expedition across the Simpson Desert in the 1939. These early Muslims contributed greatly to the development of rural and remote Australia.

Source: http://www.samuseum.sa.gov.au/

Marree, formerly known as Hergott Springs, was a famous rest station at the centre of the interstate camel communication network. In 1880, 4 years before the arrival of rail, Hergott was the focus of camel strings that traveled what is now known as the Birdsville Track, the Strzelecki Track to Innamincka, through to NSW, and up to Alice Springs and other northern stations on the Overland Telegraph Line. After the arrival of the railway, camel teams travelling from one state or colony to another converged at the dusty station on the busy railway head, where goods were loaded and offloaded. "Once the mail was cleared the station master would take off his shirt, and with his one porter, would repair to the goods shed, loaded with cart note books : consignee notes must match with corresponding loads and then the load would be allocated to the particular camel train. Not only the shed but the dirt platform would overflow with huge mounds of bundles and cases; the station master would grow so frantic that his voice at times would fade almost to nothing as he hurled orders and directions to the camel men and their native helpers while he endeavoured to collect the consignments in their correct order. The loadings for transit were assigned to different drivers by the station owners or their managers. Some goods had hundreds of miles to go and the return trip might take months"

The cameleers generally lived away from white populations, at first in makeshift camel camps, and later in 'Ghantowns' on the edges of existing settlements. In its heyday, Marree supported a thriving Afghan community, separated by the railway line from the European population. Some people called Marree, 'Little Asia' or 'Little Afghanistan'. A ramshackle, tin-roofed house there served as a *caravanserai*, or resting place, for the camel caravans converging along tracks from QLD, NSW and the NT. In the wake of the camel men came Indian hawkers and merchants. Arriving from Karachi, Peshawar, Baluchistan, the Punjab and Bengal, hawkers travelled across the Australian countryside, offering their merchandise for sale to remote settlers. They were supplied by wholesale merchants, who opened small shops in the towns and cities.

The South Australian Museum exhibition " **Australia's Muslim Cameleers : Pioneers of the Inland 1860s to 1930s**" shown in Adelaide over winter, will be on show at the Canberra National Library from 12 December 2007 until 2 March 2008. It reveals their extraordinary history, and acknowledges the remarkable contribution of the cameleers to Australian scientific exploration, the pastoral industry, and the support they provided to isolated communities in Central Australia. These Muslim pioneers provided the lifeblood for many inland settlements, isolated stations and mines, and forged communication routes throughout remote Australia. *Sourced from and further information available* from http://uncommonlives.naa.gov.au/contents.asp?sID=29, http://www.icv.org.au/history4.shtml and http://www.samuseum.sa.gov.au/

Marree Mosque
Source: http://uncommonlives.naa.gov.au/contents.asp?sID=29

# Measuring Leakage from the GAB

Water is discharged from the GAB by bores, natural springs (our much admired mound springs) and vertical leakage. Numerical modelling by the Bureau of Rural Sciences indicates that this third component, vertical leakage, is the largest source of discharge and accounts for 58% of the outflow from the South Australian portion of the GAB. Due to the very large size of the GAB there have been few field measurements of this vertical leakage that can be used to independently verify the estimates derived from modelling, despite the leakage comprising such a large proportion of the GAB water balance in South Australia. Yet careful harvesting of the vertical leakage is considered to be the key to the sustainable use of the GAB resource. Increasing water resource demand requires better understanding of natural discharge processes in the GAB. This will lead to improved protection of the unique ecosystems and cultural values of the mound springs, which are dependent on flow from the GAB, and greater security of supply for all users of the GAB resource.

Auger rig taking soil sediment samples near Marree.

Vertical leakage is comprised of two components. The most obvious leakage occurs along the southwestern margin of the GAB and coincides with the clusters of mound spring complexes. Commonly around the mound springs are large areas of salt flats that are the most visible expression of the vertical leakage. The South Australian mound springs occur where the main GAB aquifers outcrop while under artesian pressure (e.g. Hermit Hill and Public House springs), or along folding and fault structures where the aquifers are close to the surface (e.g. Elizabeth Springs, Reedy Springs). The GAB discharge that feeds the springs also feeds a shallow water table and where this water table is close to the surface (within 4-5 m), slow evaporatively driven discharge occurs through the soil profile and evaporates from close to the soil surface, leaving the salt behind to form the salt flats. This near surface discharge often occurs along the trend line of the aquifer outcrop or fault lines that control the distribution of the mound springs and so covers a much larger area than that of the mound springs. As a result, the flow out of the springs represents only the tip of discharge iceberg flowing out of the GAB in these areas. There is another component of indirect diffuse vertical leakage that forms a continuum with the near surface discharge; that is the vertical leakage from the GAB aquifer at depth that permits some discharge into overlying sediments and associated aquifers. This component of discharge can potentially be occurring over huge areas and at very slow discharge rates and so is difficult to measure.

A project commenced this year that aims to quantify the near-surface discharge along the southwestern margin of the GAB. The project is being run by the University of Melbourne and funded by the federal government's Australian Research Council, BHP-Billiton, Great Artesian Basin Coordinating Committee, Santos Limited and the South Australian Arid Lands Natural Resource Management Board. In June, a crew of five ventured into the South Australian deserts to gather the first data for this project. We had an auger rig mounted on the back of a Landcruiser for collecting sediment samples and a truck full of complexly wired gear for measuring evapotranspiration in the discharge areas. We were lucky enough to spend a couple of days with the FOMS first field trip and visit some of the areas where we will be conducting field work in a field trip during November. During the June-July fieldwork, the first set of field data were collected around Marree (Hergott Springs), and the Public House Springs and Reedy Springs areas off the Strzelecki Track. Three different methods were used to estimate the discharge rates. Two of the methods directly measured short term evaporation rates during the field trip using the assumption that the evapotranspiration from the land surface was equal to the discharge from the GAB-fed water table (allowing for the effects of any recent rainfall). The third method used variations in the salinity through the soil profile to model long-term discharge rates. The data from the three methods gave generally complementary results and indicated that discharge rates from the salt flat areas around the mound springs were one to two orders of magnitude higher than the discharge rates further from the mound springs where there were no obvious salt accumulations at the surface. One of the challenges for the project will be to understand the local controls on the variations in discharge and to be able to scale up from the field measurement to produce regional scale estimates of discharge along the southwestern margin of the GAB.

Bowen Ratio equipment measuring evapotranspiration near Reedy Springs

Our next field trip is in November 2007 where we will be collecting data in the Lake Eyre South region, between Marree and William Creek, where many of the major spring groups are located. We are looking forward to visiting these fascinating areas again and will keep FOMS informed of the findings of the project over the next two years.

**Written & Photos by Dr Justin Costelloe, Research Fellow, Dept of Civil & Environmental Engineering, University of Melbourne.**

# Friends of Mound Springs

If you wish to become a member, please send $10 together with your name, phone number, postal and email addresses to Tony Latz, Treasurer of FOMS, 10 Waratah Way, Stonyfell SA 5066. Membership runs with the financial year.

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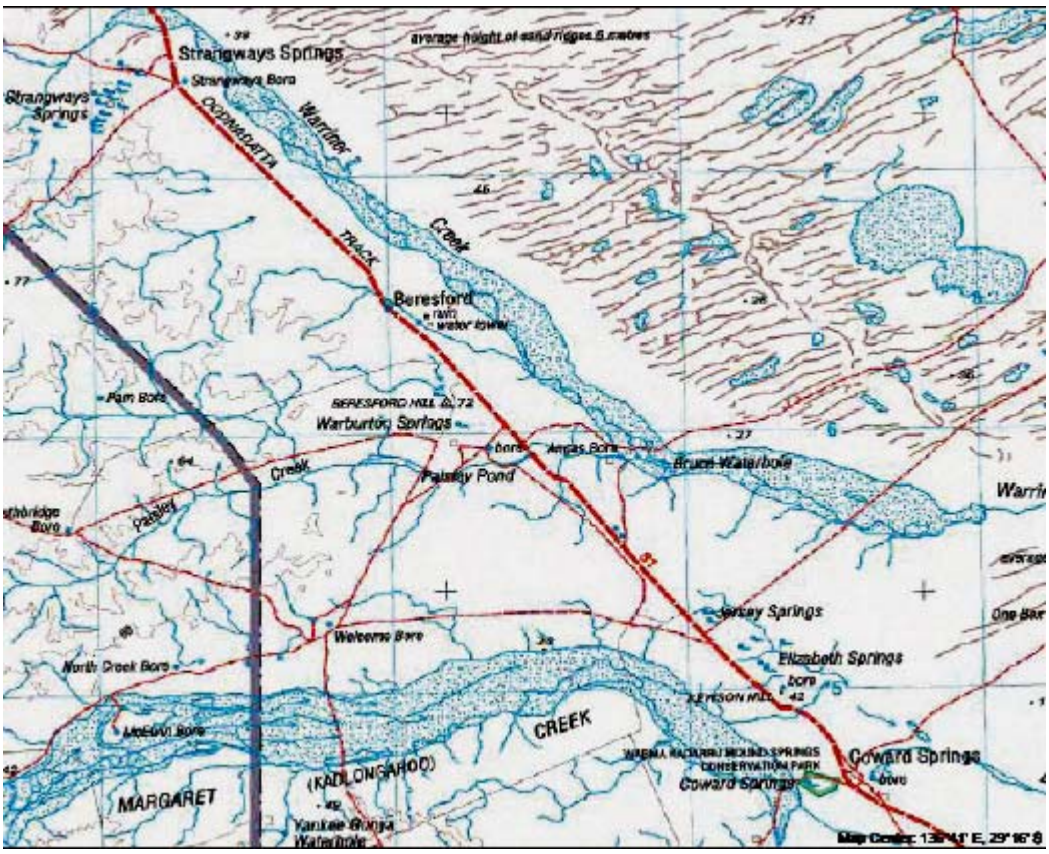


Source: http://www.ntlis.nt.gov.au/imfPublic/imf.jsp?Site=nreta