

# FRIENDS of the GREAT VICTORIA DESERT PARKS

Newsletter Number 40, June, 2011.

## WATERHOUSE CLUB 2010 MARALINGA BIOLOGICAL SURVEY HERPETOLOGY REPORT

by Dr. Mark Hutchinson, Senior Research Scientist and Curator of Reptiles, South Australian Museum

Prior to the 2010 fieldwork, 37 species of reptiles had been recorded in the restricted 'Section 400' area around Maralinga. 27 of these had a tissue sample available for genetic study, the remaining 10 having been collected prior to the start of biochemical genetic work.

During the survey, 29 of the 37 known species were recorded, of which six represented the first opportunities to collect tissue samples for these species in the Section 400 area. In addition, the survey recorded a further 18 species of reptiles and one species of frog. The frog is the desert burrowing species *Neobatrachus sudelli*, likely to be the only species in the area. The Waterhouse Club Expedition thus raised the total herpetofauna of Section 400 from 37 to 55.

Among the species recorded were several that represent significant additions to our knowledge of reptile distributions in the southern arid zone of Australia. A blind snake, *Ramphotyphlops margaretae*, was recorded for the first time in South Australia. This is only the third specimen of this species ever recorded, previous specimens having been collected from the Lake Throssell and Neale Junction in Western Australia, approximately 800 km away at the western end of the Great Victoria Desert. The find raises the possibility that the species might occur through much of the Great Victoria Desert.

Two species, the thorn-tailed gecko, *Strophurus assimilis*, and the narrow-banded snake, *Brachyuropsis fasciolatus*, represent significant range extensions westward, into a gap between South Australian populations on the Eyre Peninsula and Western Australian populations in the eastern Goldfields. Two records of a small burrowing skink, the ribbon slider, *Lerista taeniata*, and a dangerous desert brown snake, the gwardar, *Pseudonaja mengdeni*, represent important new records of poorly-mapped species from the western SA deserts.

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MEMBERS SIGNED UP FOR THE FIELD TRIP IN AUGUST MUST BE FINANCIAL.



Crested Dragon *Ctenophorus cristatus*, Thorny Devil *Moloch horridus*  
Photos Jan Forrest.

**President:** Neville Hudson nhudson105@bigpond.com

**Secretary:** Gordon Smith 08 8556 2308

**Treasurer:** Ross Mathews, 9 Harrow Road, ST. PETERS 5069 S.AUST.

Membership fees are \$25 annually, due on 1st January each year.

**Newsletter Editor:** Jan Forrest OAM - forrestjan@adam.com.au

Articles for newsletter may be posted to Editor, Friends of the Great Victoria Desert, C/- South Australian Museum, North Terrace, ADELAIDE, 5000

**Meetings:** three meetings are held annually in the Camden Community Centre, 7 Carlisle Street, CAMDEN PARK.

**Webmasters:** Bill Dowling arbill@internode.on.net and Fiona O'Connor www.fgvd.org.au

**Our book:** 'Field Guide to Shrubs and Trees of the Great Victoria Desert' may be obtained from Doug Smith 08 8268 4625



## FROM THE PRESIDENT Neville Hudson

### Further Information from the 2010 Tracks and Scats Surveys.

Newsletter editor Jan Forrest has highlighted the ecological diversity of the Maralinga section of the Great Victoria Desert and given further information about the nuclear testing program that was carried out there. This information complements the last edition where we gave some reports about our 2010 Field Trips to the area. Some additional results from further analysis of data collected are interesting.

During the trip I collected 10 animal scats that I believed came from predators such as dingo (dog), fox or cat. The scats were sent to Barbara Triggs, author of the publication "Tracks and Scats", for analysis. When the results were returned I found that three of the 10 scats were from macropods, (Kangaroo or Euro). My scat identification skills need to improve!



Of the seven scats from predators there was evidence that rabbit was their main prey. However, one scat that suggested a fox had eaten a Sandy Inland Mouse, (*Pseudomys hermannsburgensis*). In another scat Barbara found what she considered was definite evidence of a Marsupial Mole (*Notorcytes typhlops*). This is a most interesting find and improves our knowledge of the distribution of the Marsupial Mole.

Observation notes and photos taken during an animal tracking survey suggested we had found further evidence of a Marsupial Mole in the same area. Our initial excitement has been quelled by further examination by people with lots of experience in the field. They have concluded that the track was made by a hawk moth crawling across the sand. All of these experiences help us improve our skills so that we can be better at carrying out future surveys and we can teach other people who join us.

### Dr. Mark Shephard's address about Princess Parrots (*Polytelis alexandrae*) at the June Meeting.

Mark gave an excellent address which included a lot of information about the parrot and his personal experiences in researching and finding this beautiful bird. The first European discovery of the bird was at Howell's Ponds, NT in 1862. The bird was named as a dedication to then Princess Alexandra engaged to the future English king, Edward VII. Although there had been sightings in northern South Australia none had been seen in the SA section of the GVD until 1986. Since then there have been a few sightings within the Unnamed Conservation Park (Mamungari). Ross Allen recorded seeing and photographing ten on the 10th Sept 1986. Mark, with Ruth and George Aspley, saw four on 12th October 1989. He was able to take some photos.

Mark noted that the landform and vegetation type in the area north of the No Camping zone in Mamungari appears to be similar habitat to that where the bird is often recorded in other places. He suggested that Princess Parrots could forage and perhaps breed there. One of the dominant features of this vegetation type is the Marble Gum, (*Eucllyptus gongylocarpa*). Old trees of this species that have hollows are potential nesting sites. This year's field trip will be in an area with similar vegetation and participants will be making a special effort to locate the bird and possible breeding sites for future surveys.

The other parrot frequently associated with the Great Victoria Desert, the Scarlet-chested Parrot *Neophema splendida*, was also considered as the logo for the Friends of GVD Parks. But, the Princess Parrot was selected and Len Beadell's drawing is used as the logo.

### The May –June Reconnaissance Trip.

To gather information that will assist with the main field trip in August a group of five members undertook a reconnaissance trip to the Maralinga Tjarutja Lands in late May and early June. Phil Gaukroger, Peter Facy, Phil Prust, Bill Dowling and Jan deWit spent 14 days and covered 3,500 kms. They found the roads and tracks in the field trip area in good condition. There are many new roads that have been created for the Rodinia Oil Company that is exploring for oil there. Rodinia and companies working for them have begun work to drill several bores. The reconnaissance group established contact with these companies and we have been offered assistance if required during the field trip.

At Oak Valley they made some preliminary field trip arrangements with community members including Janet Queama, Chairperson of the Oak Valley Community. It is possible that some Oak Valley people will accompany us in August.

About 50 vegetation plots, including some that have not been re-photographed for over 27 years, were photographed and areas that will require a visit in August were selected. In addition to finding possible camping and survey sites they discovered a new stand of the exceedingly rare *Eucalyptus wyolensis*.

Members of reconnaissance group were very pleased with what they found and have provided us with information that will contribute to the enjoyment and success of the surveys trips in August.

**Letter of Appreciation from Alinytjara Wilurara Region.**

This week I have received a letter from Philippa Schmucker, Program Manager for the Alinytjara Wilurara Natural Resource Management (AWNRM Board), thanking the Friends of the Great Victoria Desert Parks for our contribution in the delivery of biodiversity programs.

Philippa acknowledges the hard work, time, and resources that have been contributed to the region over the past 3 years. This has included work such as flora and fauna, sand plot (animal tracking) and threatened species monitoring. The full letter can be viewed on our web site.

We are pleased to be assisting the AWNRM Region and enjoy a good working partnership with their staff based both in Ceduna and in the Adelaide office on Goodwood Road. Some officers from the AWNRM will be accompanying us during this year's field trip.

**Friends of GVD Parks Badges are For Sale.**

Iron on badges with the group's logo (Princess Parrot) are now available for members to purchase. Contact me or the secretary Gordon Smith ph. 08 8556 2308 or email wesrosie@bigpond.com.au. The cost for the badges is now \$3.00 each, this is cost price. Buy now to avoid a possible price increase. There will be no cost for postage at the stage. The badges can be ironed on to clothing items such as shirts.

**A Brief look at the History of Friends of GVD Parks.**

A meeting to form The Friends of the Great Victoria Desert Parks was held on the evening of Wednesday 16th March 1994 at the Old Treasury Building in Adelaide.

Mark Shephard, the inaugural President, now Patron, wrote the following words to encourage people to become involved in a friends group. **“I envisage that such a friends group would have only a very small, yet specialized membership, but could work effectively in promoting the outstanding qualities of the area to the general public, and effectively assist in conservation measures.”** Seventeen years later the current membership is over one hundred, many people

are now aware of the outstanding qualities of the area and we have assisted with conservation by adding to the body of scientific knowledge through extensive flora and fauna surveys.



*Eucalyptus wyolensis* Photo: Bill Dowling  
Mystery tracks Photos: Neville Hudson

**MEMBERSHIP FEES ARE NOW DUE**

Members are encouraged to pay their subscriptions via Electronic Transfer as follows:

- Account name “Friends of Great Victoria Desert Parks”
- BSB number 805023.
- Account number 02321735.
- Within the reference section record name and “subs” .

On the completion of an electronic transfer please notify the treasurer rmathews@evansayers.com.au

NEWS FROM DENR and FRIENDS OF PARKS

MANAGING BUSHLAND WEEDS - Lobethal

Thursday 22nd September 7.30pm - 9.30pm and Saturday 24th September 9.30am - 11.00am Cost: Free

To register or obtain more information contact: Sheree Edwards (08)8389 5915, mobile 0419 037 303 or email sheree.edwards@adelaide.nrm.sa.gov.au

FRIENDS OF PARKS FORUM - Kimba

It's not too late to register. Friday 2nd - Sunday 4th September 2011. Registration form and tour options with payment to be received by 15th July to Mrs. Susan Grund, PO Box 72, KIMBA. 5641.

REGULATORY REVIEW QUESTIONNAIRE

Is the impact of regulatory requirements causing concern for community groups?

Responses are required by 5th August, 2011.

Go to https://www.surveymonkey.com/s/9HQ7LHH.

Further information from the Office of Volunteers can be found at http://www.ofv.sa.gov.au/actreview.htm.

GRANTS FOR HISTORY PROJECTS NOW

AVAILABLE - applications close on 1st August, 2011. For more information contact History SA 8203 9888 or www.community.history.sa.gov.au/grants.

NOMINATIONS FOR THE 2011 PREMIERS NRM AWARD AND SA LANDCARE AWARDS are now being sought.

The most outstanding finalist from each category will receive a cheque for \$500 to recognise their remarkable achievement.

Entries close on 29th July 2011.

www.nrm.sa.gov.au for information and application from for the Premier's NRM Award.

www.landcareonline.com.au for information on the SA Landcare Awards.

COMMUNITY ACTION GRANTS NOW OPEN

Community groups around Australia can now apply for grants of between \$5000 and \$20,000 to help protect and conserve their local environment and natural resources.

Information on how to apply is available at www.nrm.gov.au or by calling 1800 552 008.

Applications close on Monday 1st August, 2011.

DENR 2011 AWARDS for presentation at the Friends of Parks Forum at Kimba in September.

Closing date for nominations, Friday 5th August, 2011.

Three awards for Outstanding Achievement for Volunteer group projects and one award for individual contribution. Further information from Volunteer Support Unit DENR.

WATERHOUSE CLUB 2010 MARALINGA BIOLOGICAL SURVEY

A very successful survey was conducted in the Maralinga area for ten days from 28th October to 6th November 2010 by six scientists and 31 expeditioners from the SAMuseum's Waterhouse Club.

The six science leaders were:

Catherine Kemper (mammals and science leader)

Mark Hutchinson (herpetology)

Graham Carpenter (birds)

Peter Hudson (terrestrial invertebrates and salt lake invertebrates)

Jan Forrest (terrestrial invertebrates)

Nick Birks (spiders and scorpions)

Substantial scientific assistance was also received from Andrew Black, Carolyn Ireland and Don Reid.

The survey made several exciting observations, including a new species of blind snake for South Australia and substantial range extensions for some mammal and reptile species. No doubt there will be many 'good finds' amongst

the invertebrates collected but it will take months/years to discover some of these.

These collections contributed to our understanding of the patterns of distribution of species in South Australia. Maralinga sits on the Ooldea "Range", an elevated sandy belt arcing around the eastern margin of the Nullarbor Plain. It lies on the boundary between the more southerly, winter rainfall mallee of the Eyre Peninsula and the more inland, summer rainfall Great Victoria Desert. Species recorded in the survey clearly show the crossover between the two faunas with a mix of Eyre Peninsula and Great Victoria Desert species occurring together. This overlap zone represents an area of special richness in the arid zone of South Australia.

Several of the scientists expressed an interest to return to the region at some stage in the future.

The Herpetology report on page one is the first of a series of reports from this expedition. Further editions will include information from other disciplines.



Photos Jan Forrest: Mallee Fowl Nest, Bustard.



**MARALINGA and EMU**

Maralinga is situated on the edge of the Great Victoria Desert. South of Maralinga is the Nullarbor Plain and the east west railway line and the stations Ooldea and Watson.

Emu is located north of the Anne Beadel highway in the Great Victoria Desert.

Maralinga is an area of approximately 3000 square kilometres encompassing Maralinga village and the test areas know as ‘Sector 400’. In its heyday over 3000 people lived at Maralinga Village, today there are 5 buildings left.

An area of approximately 3000 square kilometres encompassing Maralinga village and the test areas known as ‘Section 400’ is aboriginal territory. Entry is forbidden without formal approval. Traditional owners may visit and hunt but not camp.

Between 1953 and 1963 the United Kingdom conducted a program of nuclear weapon development trials at Maralinga and Emu and these trials dispersed radioactive materials over small areas.

Two major trials, Totem 1 and Totem 2 were performed at Emu, then in 1956 at Maralinga four major nuclear trials code-named One Tree, Marcoo, Kite and Breakaway were carried out and in 1957 three trials code-named Tadge, Biak and Taranaki were undertaken. The largest trial was at Taranaki where 27 kiloton was used.

All nuclear devices at Maralinga and emu were exploded on 31m towers, with the exception of Marcoo (ground level), kite (airdrop at 150m) and Taranaki (balloon-borne at 300m).



Right: 1957 ‘Taranaki’ mushroom cloud ex newspaper.  
Far right: signs on the perimeter of ‘Section 400’  
Below: Concrete marker for ‘ground zero’ 2010  
Photos: JForrest

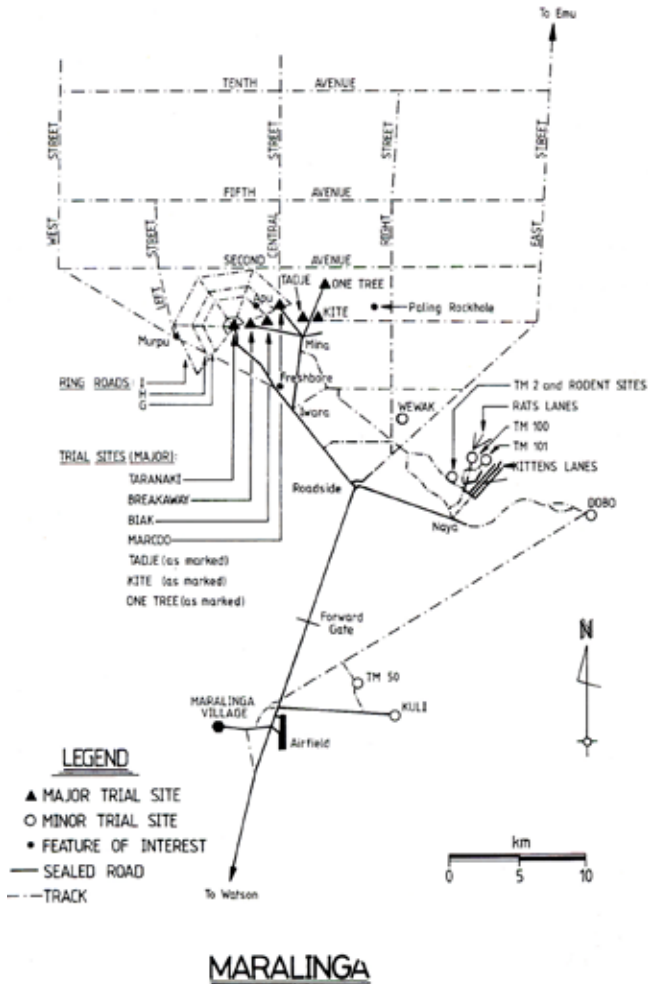
At the instant of detonation there is a burst of intense gamma and neutron radiation, followed by the formation of a mushroom cloud containing highly radioactive material.

This cloud can rise to a considerable height and the radio active material may be carried large distances by the wind. The radioactive debris that is deposited downwind on the ground is called ‘fallout’.

Five minor trials were performed at Emu in 1953 and several hundred were performed at Maralinga between 1955 to 1963 as part of the UK atomic weapons development program.

These minor trials were essentially developmental experiments designed to investigate the performances of various components of a nuclear device, separately and in combination, and almost all involved radioactive materials with conventional high explosives.



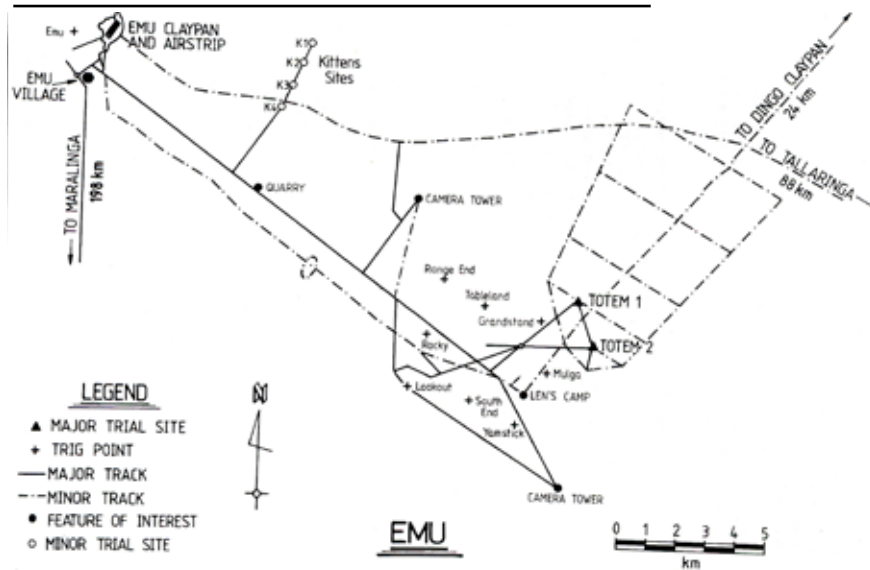


The four main types of minor trials were code-named:

- Kittens, performed at Emu and on the Kittens lanes at Naya
- Rats, performed on the Rats lanes at Naya, north of TM100 and at Dobo.
- Tims, performed at Kuli, TM2 at Naya, TM50, TM100 and TM101
- Vixen, performed at Wewak and Taranaki.

In 1967 the British government undertook Operation Brumby, a clean up of the sites. In 2000 it was decided by the Australian government that the levels of radiation were too high to allow the area to be handed back to the traditional owners so a second cleanup was undertaken by the Australian government. The UK government provided 40 million pounds and the Australian Government 1.2 million dollars for this operation.

*Jan Forrest*



You could land the space shuttle on the Maralinga airstrip!



**2010 MARALINGA BIOLOGICAL SURVEY  
HERPETOLOGY REPORT cont from page 1.**



Sand Goanna *Varanus gouldii*. Photo: PBessell  
Mark Hutchinson at vertebrate trapline  
Vertebrate trapline and Native Hibiscus. Photos: JForrest

Herpetological collections included samples of a gecko, the tree dtella, *Gehyra variegata*, currently under study at the SA Museum by University of Adelaide PhD student Mark Sstrom. This species is known to have markedly distinct eastern and western populations, with different chromosome arrangements and pronounced DNA sequence differences.

Chromosome preparations were made from eight of the specimens representing five populations spread over a large part of the survey area and south on to the northern Nullarbor Plain. All represented the western chromosomal group, which accords with the DNA data already obtained from specimens from the west of South Australia. The results are intriguingly different from those reported in the 1970s. In the earlier study, all animals karyotyped from this region were reported to be of the eastern, not the western chromosome group. It is possible that both forms are present and by chance we have only ever sampled western animals while the other study by chance only sampled eastern animals, but this seems unlikely. The differences between the two karyotypes (chromosome arrangements) are sufficiently subtle that the earlier study may simply have misinterpreted its results, as they were using methods that produce poorer quality results than the tissue culture methods available to us. As this earlier study did not publish any illustrations of their Maralinga area chromosome results, we cannot re-check the early work to explore the discrepancy further. However we plan further field work between the Stuart Highway and Maralinga to more precisely map where eastern and western populations meet or overlap.

The collections contributed to our understanding of the patterns of distribution of species in South Australia. Maralinga sits on the Ooldea "Range", an elevated sandy belt arcing around the eastern margin of the Nullarbor Plain. It lies on the boundary between the more southerly, winter rainfall mallee of the Eyre Peninsula and the more inland, summer rainfall Great Victoria Desert. Species recorded in the survey clearly show the crossover between the two faunas with a mix of Eyre Peninsula and Great Victoria Desert species occurring together. This overlap zone represents an area of special richness in the arid zone of South Australia.

List of the reptile species recorded to date within the Maralinga 'Section 400'

Asterisk indicates first recorded in the area during WHC expedition.  
Parentheses indicate species not recorded during WHC expedition

**Dragon lizards (Agamidae)**

- Crested dragon *Ctenophorus cristatus*
- Military dragon *Ctenophorus isolepis*
- \*Central netted dragon *Ctenophorus nuchalis*  
(Painted dragon *Ctenophorus pictus*)
- Linga dragon *Diporiphora linga*
- Thorny Devil *Moloch horridus*
- Dwarf bearded dragon *Pogona minor*  
(Nullarbor earless dragon *Tympanocryptis houstoni*)

**Australasian geckos (Diplodactylidae)**  
 Fat-tailed gecko *Diplodactylus conspicillatus*  
 Desert stone gecko *Diplodactylus wiru*  
 Southern sandplain gecko *Lucasium bungabinna*  
 Beaded gecko *Lucasium damaeum*  
 Beaked gecko *Rhynchoedura ornata*  
 \*Thorn-tailed gecko *Strophurus assimilis*

**Typical Geckos (Gekkonidae)**  
 Purple dtella *Gehyra purpurascens*  
 Tree dtella *Gehyra variegata*  
 Bynoe's gecko *Heteronotia binoei*

**Odd-tailed geckos (Carphodactylidae)**  
 Pale knob-tailed gecko *Nephrurus laevis*  
 Smooth knob-tailed gecko *Nephrurus levis*  
 (Starred knob-tailed gecko *Nephrurus stellatus*)

**Legless lizards (Pygopodidae)**  
 (Barred snake-lizard *Delma australis*)  
 Spinifex snake-lizard *Delma butleri*  
 \*Painted snake-lizard *Delma petersoni*  
 (Burton's legless lizard *Lialis burtonis*)  
 \*Black-headed scaly-foot *Pygopus nigriceps*

**Skinks (Scincidae)**  
 Southern spinifex ctenotus *Ctenotus atlas*  
 \*Brown ctenotus *Ctenotus helenae*  
 Leopard skink *Ctenotus pantherinus*  
 Eastern desert ctenotus *Ctenotus regius*  
 Sandplain ctenotus *Ctenotus schomburgkii*  
 Spinifex slender bluetongue *Cyclodomorphus melanops*

Broad-banded sandswimmer *Eremiascincus richardsonii*  
 Great desert slider *Lerista desertorum*  
 Eastern two-toed slider *Lerista labialis*  
 \*Ribbon slider *Lerista taeniata*  
 Desert skink *Liopholis inornata*  
 \*Common snake-eye skink *Morethia boulengeri*  
 (Dwarf skink *Menetia greyii*)  
 \*Western bluetongue *Tiliqua occipitalis*  
 \*Sleepy lizard *Tiliqua rugosa*

**Goannas (Varanidae)**  
 \*Desert pygmy goanna *Varanus eremius*  
 (Pygmy mulga goanna *Varanus gilleni*)  
 Sand goanna *Varanus gouldii*  
 Black-headed goanna *Varanus tristis*

**Blind Snakes (Typhlopidae)**  
 \*Southern blind snake *Ramphotyphlops australis*  
 \*Rough-nosed blind snake *Ramphotyphlops bituberculatus*  
 (Centralian blind snake *Ramphotyphlops endoterus*)  
 \*Slender blind snake *Ramphotyphlops margaretae*

**Venomous snakes (Elapidae)**  
 \*Narrow-banded snake *Brachyuropsis fasciolatus*  
 Half-girdled snake *Brachyuropsis semifasciatus*  
 \*Desert whipsnake *Demansia reticulata*  
 Mulga snake *Pseudechis australis*  
 \*Gwardar *Pseudonaja mengdeni*  
 \*Ringed brown snake *Pseudonaja modesta*  
 \*Desert banded snake *Simoselaps bertholdi*

**FRIENDS OF GREAT VICTORIA  
 DESERT WINDCHEATER**

An order form for windcheaters will be emailed to members mid July with a VERY short turn around time. Here are the details:

- Hooded
- Navy blue with FOGVD Logo in yellow
- Mens and Ladies sizes, true to size.
- A measurement chart will be included with order form
- Cost- no more than \$35



**DIARY DATES**

**MEETINGS**

**NEXT MEETING:** Friday 4th November, 2011 7.30 at Camden Community Centre, 7 Carlisle Street, CAMDEN PARK at 7.30. The Agenda for the meeting will be available in the Members area of the Friends of the Great Victoria Desert website [www.fgvd.org.au](http://www.fgvd.org.au) prior to the meeting. No guest speaker has been arranged for this meeting. Reports from the August field trip will be presented and members are encouraged to bring along field trip images to show and stories to tell.

**FOLLOWING MEETING DATE:** AGM to be advised - Friday 17th or 24th February, 2012 see members area of the Friends of GVD website <http://home.vicnet.net.au/~fgvd/index.htm>.

**2011 FIELD TRIP DATES:** 15 - 26 AUGUST 2011 from Ceduna/Nullarbor

**COMMITTEE MEMBERS**

Neville Hudson	President	08 8556 6782
Gordon Smith	Secretary	08 8556 2308
Ross Mathews	Treasurer	
Doug Smith	Marketing	08 8268 4625
Jan Forrest OAM	Editor	08 8297 8230

**WEB LINKS**

**DEH information on Mamungari Conservation Park:**  
<http://www.parks.sa.gov.au/mamungari/index.htm>  
**Friends of Great Victoria Desert:**  
<http://home.vicnet.net.au/~fgvd/index.htm>