



In this issue

Message from the Editors	1
Message from your student representative	1
A focus on...	2
Poster making	2
Student news	3
Notice Board	5

Next issue

October 2008

Submit articles to
Carol Simon
(csimon@sun.ac.za), or
Bettine van Vuuren
(bjvv@sun.ac.za).

MESSAGE FROM THE EDITORS

Dear Members

This issue of the Aardvark is mostly dedicated to our student members. This is an opportunity for you to showcase their work and tell us about the interesting projects you are working on and other things you are involved with. We have also approached Alan Hodgson and Sue Nicolson for some advice on how to put together a good (award winning) poster. In our "Focus on ..." we shine the spotlight on Jan Nel. Given that June / July, the time of year dedicated to conferences, is fast approaching, we also include some conference advertisements. Happy reading.

Bettine van Vuuren and Carol Simon

MESSAGE FROM YOUR STUDENT REPRESENTATIVE

My name is Leon Meyer and I am a Masters student at North-West University and the new student representative for the ZSSA. I am originally from Klerksdorp and am the youngest of three children. Sports is my favourite past time activity and it just gets me going and gives me new energy when I stay fit. I especially love cycling and hockey, but rugby is also in the run for the top two spots. Back at the university, I am doing my research with the AACRG (African Amphibian Conservation Research Group) and my project focuses on the influence of seasonal variations on *Batrachochytrium dendrobatidis* on frogs in the Drakensberg Mountains and from the Kwazulu-Natal coast, through the Free State and the North-West provinces.

To all the students, I would like us all to become not only colleagues in research, but friends. I am a fun guy and love to meet new people and hear everybody's work experiences and where they come from and what they want to do with their studies. It helps me to get a perspective on all the zoological work that is being done and the work and research that is still available for new students to do. I want to attract new students to join the ZSSA and want you to feel free to contact me with any inquiries and by doing so the student network will grow and become "legendary".

Please feel free to contact me at any stage, my contact details are:

Leon Meyer
Cell: 082 797 4044
Leon.Meyer@student.nwu.ac.za

School for Environ. Sciences (AACRG), North-West University
(Potchefstroom Campus), Private Bag X6001, Potchefstroom 2520

graphs and tables. This gives you the opportunity of seeing whether your design will work, and if unnecessary clutter can be removed. A few large clear graphs or illustrations should dominate and the text be kept to a minimum. There is nothing wrong with some blank space!

A good poster has the following features:-

- It is eye-catching and colourful (without being garish, so do not use too many colours that clash). The background should not detract from the content: a common mistake is to use a photograph as a background, which is distracting and can hide text.
- Text that is clearly readable at a distance of about 1 m. The title (short and eye-catching) should be in larger text (but do not use upper case).
- A synthesis of important findings in as few words as possible. Therefore, avoid blocks of text and use telegraphic text and bulleted outlines. **Try to keep the word count (other than headings) to 500 words.**
- Simple, clear tables and graphs; do not cut and paste straight from a statistics package! Take the trouble to re-draw graphs specifically for the poster.
- Clear organisation so that the reader can work through the poster in a logical way.
- Poster judges will look for sound research with clear and unambiguous results, and conclusions that are supported by the results.
- Finally, the poster must be free of typographical and spelling errors.

Most scientists now make posters using computer software packages (e.g. Powerpoint, Corel Draw) and useful templates are readily available. The final poster is printed on A0 paper or similar, then laminated for protection. Such software is great for experimenting with the design, but printing the poster is expensive if errors must be corrected. Poster preparation needs to start well before a conference: many people do not realise how time-consuming it can be to produce a really good poster.

There is some good advice (even the importance of dressing to match your poster!) on the Society for Conservation Biology's website

<http://www.conbio.org/studentaffairs/posters/>

STUDENT NEWS

The reproductive performance and ecology of black rhinoceros

Roan Plotz, Wayne Linklater and Graham Kerley



Roan Plotz returned to Hluhluwe-iMfolozi Park (HiP) recently to begin a second field season investigating the causes of apparently poor breeding performance amongst the Park's black rhinoceros (*Diceros bicornis*) population. HiP is a strategically important population because it serves as a major source of individuals for ongoing meta-population management and range expansion and so maintaining or improving calving and survival rates is important to the recovery of this critically endangered species. Concerns have been raised that apparently long inter-calving intervals, increases in home range size, and a decline in population size might indicate deteriorating breeding rates. The reasons for poor breeding performance are not well understood but might be attributed to predation of young calves, particularly by spotted hyena and lion, or poor resource conditions for females such that pregnancy rates are poor.

We began Roan's study last year by installing horn-implant transmitters in 7 adult female rhino with the help of Ezemvelo KwaZulu-Natal Wildlife's Game Capture unit, and hope to install up to 13 more this year. Using radio telemetry, Roan is able to make frequent observations of each female to track her reproductive state, body condition, habitat use and quality, and interaction with other rhino. The ability to monitor the reproductive status of rhino in the field has been enhanced by the development of a rapid, inexpensive, and non-technical colour-change pregnancy test that uses dung, just like the modern human colour-change pregnancy test uses urine. The combination of radio telemetry and pregnancy testing technologies mean that regular samples of fresh dung can be used to measure pregnancy, pregnancy loss, and calving rates across the population and between seasons for the same females

If pregnancy rates are poor and there is evidence for pregnancy loss, and these correspond to poor maternal body and range condition, then the population's breeding performance is probably resource limited. However, if pregnancy rates are high but there is significant calf loss that is unrelated to maternal condition and home range quality, then the evidence implicates other factors, perhaps predation, as limiting breeding performance. Whatever the result the outcome will assist in better managing the population because there is uncertainty about whether greater removals of black

rhinoceros for translocation to other reserves will improve performance by reducing density. Field work for this study will be completed before the middle of 2009.

Roan Plotz: Ph.D. candidate in the Centre for Biodiversity and Restoration Biology at Victoria University of Wellington and advised by Wayne Linklater and Graham Kerley. Roan's work is currently supported by the US Fish & Wildlife Service, Rufford Small Grants, Australian Geographic Society, and Enkosini Conservation Trust.

Wayne Linklater: Centre for Biodiversity and Restoration Ecology, Victoria University of Wellington, New Zealand.

Graham Kerley: Centre for African Conservation Ecology, Nelson Mandela Metropolitan University, South Africa.

Genetic structure across the Knersvlakte barrier in the endemic Cape rock elephant-shrew (*Elephantulus edwardii*)

Hanneline Smit



African endemic elephant-shrews (Order Macroscelidea) consist of four genera confined in their distribution to sub-Saharan Africa, with the exception of a single species present in North Africa. Southern Africa is

rich in elephant-shrew biodiversity with nine of the 16 recognized species found in the subregion and the Cape rock elephant-shrew (*Elephantulus edwardii*) being the only strictly South African endemic elephant-shrew. The distribution of the Cape rock elephant-shrew spans several recognized bioregions in South Africa (Succulent Karoo, Nama Karoo, and Fynbos) and is associated with a habitat of rocky outcrops. The phylogeographic population structure of the Cape rock elephant-shrew was described and the pattern correlated to the processes and vicariant events that might have shaped it. For this 106 elephant-shrew specimens, of which 64 are housed in South African museums, sampled from 26 localities throughout the species distribution were included in the study. The study emphasizes the importance of the inclusion of samples preserved in museum collections.

Two major evolutionary clades, the northern Namaqua and central Fynbos clades, were described within the Cape rock elephant-shrew. The northern Namaqua clade is found along the Atlantic seaboard close to the South African / Namibian border with the central Fynbos clade distributed

throughout the Cape Floristic Province. The Knersvlakte bioregion {30.5S 18.6E} was identified as the most likely geographic barrier to gene flow between these two distinct clades. Two independent methods of molecular dating indicate that these two evolutionary lineages separated ~1.7 million years ago, a date also of importance in the evolution of other Southern African vertebrates as well as humans. Importantly, the geographic delimitation of the Knersvlakte corresponds closely to genetic structure reported for other rock dwelling vertebrate species, the red rock rabbit (*Pronolagus rupestris*), and the rock agama (*Agama atra*), indicating a shared biogeographic history for South African rock-dwelling taxa. It appears that various landscape changes, including sea level fluctuations as well as topographical and climatic events might have either singly, or in concert, repeatedly enforced the population fragmentation across the Knersvlakte. Finally, within the relative safety of the Cape Fold Mountains at the southern tip of Africa, four evolutionary lineages were identified within the central Fynbos clade. The high degree of diversity and endemism of the renowned Cape Floristic Province are credited to climatic changes from the Pliocene and Pleistocene epochs. These environmental fluctuations coincide with the separation times (0.7 - 0.24 MYA) between the four evolutionary lineages found within the central Fynbos clade.

For a full description of this work, see Smit HA, Robinson TJ, Jansen van Vuuren B, 2007, Coalescence methods reveal the impact of vicariance on the spatial genetic structure of *Elephantulus edwardii* (Afrotheria, Macroscelidea). *Molecular Ecology* (16: 2680-2692).

Hanneline Smit has just completed her PhD at the University of Stellenbosch and has taken up a joint postdoctoral position (to continue her work on comparative phylogeography) at the University of Stellenbosch (with Bettine van Vuuren) and University of California, Berkeley (with Rauri Bowie). Her PhD work was supervised by Terry Robinson and Bettine van Vuuren.

Lab-rats in the field....

Nina du Toit



Contrary to popular belief the "lab-rats" (as we are sometimes referred to) also enjoy fieldwork, so at the end of January this year we set out on a sampling trip none of us would soon forget. Accompanied by our supervisors Bettine van Vuuren, Conrad and Sonja Matthee as well as Claudine Montgelard from France, we departed from