



Research fieldtrip to the Baviaanskloof



Photo: Rebecca Joubert

Members of the team conducting a longitudinal survey of the Baviaanskloof Megareserve

Two postgraduate students, Kerry Bobbins, (MSc, Geography Department) and Rebecca Joubert (PhD, Environmental Science Department) recently returned from a research field trip to the Baviaanskloof Megareserve, a World Heritage Site, in the Eastern Cape. Both students are investigating the geomorphology of the Baviaans River system, a dryland river characterised by extensive reaches of dry cobble and boulder river bed and numerous tributary alluvial fans which terminate along the main river valley. Water flows within the Baviaans are

episodic, occurring as high magnitude flood events every few years. Kerry's research involves exploring the characteristics and form of alluvial fans within the western Baviaanskloof and Rebecca's research involves exploring linkages between different geomorphic processes across scales of space and time within the Baviaanskloof.

The field trip was led by project supervisors, Prof Fred Ellery (Environmental Science) and Prof. Kate Rowntree (Geography) and field assistance was provided by Bennie van der Waal (research assistant) Anna Schoch

(research assistant) and Pearl Mzobe (MSc student) of the Department of Geography. The 5 days of field work involved intensive surveys of the Baviaans River and tributary stream alluvial fans within the western Baviaanskloof. One of the most exciting endeavours included walking a 21 km reach of the Baviaans River whilst recording changes in longitudinal

slope using a Differential GPS and conventional dumpy level survey techniques.

Evenings were spent enjoying warm, hearty meals together at the Studtis Olive Farm Guest House in the western Baviaanskloof, whilst reflecting on activities and experiences of the day.



Photo: Rebecca Joubert

Special points of interest:

- NASA CREATES WORLDS FIRST GLOBAL FOREST MAP USING LASERS: VISIT WWW.TREEHUGGERS.COM
- 2010 IS THE INTERNATIONAL YEAR OF BIODIVERSITY
- 22 SEPTEMBER IS WORLD CAR-FREE DAY

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The Okavango Delta— A Virtual Tour with Fred The 2010 Amy Jacot-Guillarmod Lecture



Prof Fred Ellery

“THE
OKAVANGO
DELTA—AN
ECOSYSTEM
ENGINEERED
BY LIFE”

By: Zukiswa Kota

That Hippopotami play a crucial role in the creation of water channel systems in the Okavango was just one of many interesting facts that Professor Ellery revealed in his talk on the 19th April 2010. The Royal Society of South Africa and the Academy of Science of South Africa hosted the 2010 Amy Jacot-Guillarmod lecture entitled *The Okavango Delta - an ecosystem engineered by life*. This fascinating lecture was delivered by Professor Fred Ellery to an audience made up of Rhodes University staff, students and members of the Grahamstown and science community. Preceding Earth Day, the lecture was an insightful reminder of the natural wonder surrounding us from dramatic landscapes and geomorphologic formations to fluvial trends and patterns.

Following a brief introduction by Professor Fred Hendricks the Dean of humanities, Professor Ellery began by thanking the organisers of the evening. He went on to mention his shared love for wetlands with Jacot-Guillarmod after whom the series is named. Amy Jacot-Guillarmod (whose full name was Amy Frances May Gordon Jacot-Guillarmod) was a botanist and limnologist whose contributions to science included papers on wetlands. Professor Ellery also thanked Professor Terrence McCarthy, A friend and colleague. Mrs. Karen Ellery received a twinkle-eyed mention for her “direct and indirect contribution to knowl-

edge of the Okavango Delta”.

Professor Ellery went on to highlight how multi-disciplinary work can contribute to the growth of knowledge in this fascinating area of research. Through several 15 000 km² coarse resolution satellite imagery, the audience viewed Okavango topographical changes. In addition to factors relating to the rainfall catchment area, Professor Ellery attributed the formation of delta to processes occurring deep within the earth’s crust; the Great Rift Valley and the depression creating by rifting in which the Okavango delta sits. The Professor then took the audience through a virtual tour of the Delta- beginning in the four-leafed clover in which the river can be as wide as 60 metres. Fascinatingly, the alluvial fan to the north of the delta supports Southern Africa’s largest wetland, according to Professor Ellery.

In the permanent swamps, Professor Ellery spoke of calm

waters rich with a variety of plant and animal species. As a result of water loss, the rivers become narrower- 20 metres wide. Seasonal swamps, according to Professor Ellery, are more welcoming for human habitation with islands commonly found in these areas. Finally; majestic woodland typically of miombo stands and the Boteri river brought an end to the tour. Understandably, the explorer David Livingstone described the delta as ‘majestic’. The hydrology of the area also proved to be of interest with more than 98% of the water entering the system being lost into the atmosphere as evapotranspiration.

At the end of the lecture, the audience had an opportunity to ask questions and a discussion about the geopolitical nature of the Okavango and the water resource issues related to cross-border agreements.



Department of Environmental Science: Newsletter



IDRC Project gets off the ground

The Department has recently received CAD \$600,000 funding from the Canadian based International Development Research Centre (IDRC) for a four year research project entitled "Vulnerability, coping and adaptation within the context of climate change and HIV/AIDS in South Africa: investigating strategies and practices to strengthen livelihoods and food security, improve health and build resilience." This research will be carried out with our partners at the University

of Alberta (Canada). The main objectives of the research are:

- to increase the understanding of the complex inter-relationships between climate change HIV/AIDS, vulnerability and food security, and adaptation responses within the Eastern Cape;

- to support the identification and implementation of community-based adaptation practices through a social learning research process;

- to develop partnerships and

constituencies to help bring about relevant change to policy and practice;

- to build capacity amongst multiple stakeholders, from students to municipal officials and community members, to understand the complex processes around vulnerability and the ability to cope and adapt with multiple livelihood stressors.



The IDRC Team



Community Based Natural Resource Management Course

By John Caddick: The CBNRM short course was run over the week 2-7 August 2010. The course was attended by students and external participants from throughout the southern African region, with South Africa being the most common origin for the students and Botswana the most represented in the external participants. The breadth of experience coming into the course from the external participants highlighted the importance of CBNRM on the international stage.

The course focused on issues surrounding governance of community based natural resources. The first two days of

the course were used as an introduction to CBNRM so as to give all participants a base-level understanding of CBNRM theory and concepts. Governance and its importance in the context of CBNRM was discussed and case studies from home (RSA) and abroad were presented by the course facilitators and participants to provide a wider understanding of CBNRM.

A fieldtrip to the Bathurst commonage was conducted on the 3rd day of the course. The purpose of the field trip was to develop skills of identifying and managing local CBNRM areas, including governance of



James Gambiza and participants on the commonage in Bathurst

these areas. Feedback from the fieldtrip and discussion sessions were conducted on the final two days of the course to unpack issues surrounding CBNRM governance at home and abroad.



Nick Hamer: The Inside Story

After growing up in Northern England, I went on to study BA (Hons) History at Leeds University from 1990-1993. With a growing interest in environmental issues I took a number of opportunities to get my hands dirty, such as by

volunteering on an organic farm and in conducting household and commercial waste audits. I then completed an MSc in Environmental monitoring at the University of Bradford and stayed on in Bradford to work with the

Local Agenda 21 Unit at the City Council.

1998 I was tempted away from the delights of Bradford by an opportunity to work on a sustainable tourism project in

The Spekboom



Nick Hamer: The Inside Story (contd...)



Nick with son Jasper

Vienna. I was doubly fortunate to get the opportunity to live and work in such a wonderful city for a year, as well as to meet my wife to be (Alex), a South African working at another Viennese organisation. After returning to Yorkshire for a couple of years, Alex managed to convince me that living in South Africa would be an exciting opportunity. After moving to Gra-

hamstown in 2001, where Alex started work as a lecturer at Rhodes, I have been fortunate

to work on numerous interesting projects relating to sustainable development. These include the development of the Makana Local Environment Action Plan, assisting with a poverty study at Dwesa-Cwebe and investigating the effectiveness of poverty alleviation projects in the Peddie district. While based as a research associate at ISER, I have enjoyed the opportunity to work in collaboration with colleagues at the Environmental Science, Environmental Education, Anthropology and Economics departments.

In 2009 I decided that I would like to focus my work more

closely on issues relating to climate change, which led to my working with Sheona Shackleton on several funding proposals. These have yielded successful results, with seed funding received for the US funded Higher Education Development programme, which will hopefully result in an initiative to develop Higher Education capacity on issues relating to climate change adaptation. Our proposal to the Canadian International Development Research Centre (IDRC), looking at "Vulnerability, Coping and Adaptation within the context of Climate Change and HIV/AIDS" was also successful.



Charlie back from sabbatical in India



Charlie at the crafters Bishnoi Village

Charlie Shackleton recently spent six months in India as part of his year-long sabbatical. He returned to the department in mid July with a distinct Indian accent and a predilection for spicy vegetarian food.

The first five months were spent collaborating with scientists at the Agricultural University of Bangalore as well as ATREE (the Ashoka Trust for Research in Ecology & Environment). Key elements of the collaborative work related to

use of alien invasive plant species by rural communities, as well as management of non-timber forest products in the dry forest regions of the Western Ghats. He also used the time to catch up on a backlog of writing from some of his South African research.

During his stay he was invited to deliver lectures to different institutions including ATREE (The contribution of non-timber forest products to rural livelihoods and poverty prevention in southern Africa - a fairly dry place), the Agricultural University of Bangalore (The impacts of HIV/AIDS on natural resource use and management in southern Africa) and the Nature Conservation Foundation (Private land conservancies as conservation instruments in South Africa). He also offered a week long

course for PhD students on Writing Scientific Journal Papers for Inexperienced Researchers.

Charlie had opportunities to visit several other parts of India, either for work or pleasure. These included the coast of Kerala State in the southwest, Bhubaneswar and Simlipal biosphere reserve in Orissa State the northeast, as well as a month long holiday with his family through Rajasthan, and via Agra up into the Himalayas – a clearly phenomenal trip. Charlie says that he will definitely be returning to India as the sheer diversity of landscapes, cultures, foods, histories and environmental approaches are amazing, and he hopes that some of the funding proposals he has developed with colleagues there will soon provide the means.



Profile of a post-doc: Dr Georgina Cundill

Zuki: What is your academic background?

George: I come from an interdisciplinary background. I majored in Anthropology and Environmental Science for a BA degree, and was supervised by an ecologist while I pursued a Masters and Phd through the faculty of Humanities.

Throughout my academic development, I have sought to understand social-ecological system interactions in a way that is user-inspired within the field of natural resource management, and in a way that contributes towards the growing academic appreciation of the complexity of interactions that influence the ability of resource users and managers to effectively manage the ecosystems on which they rely for their livelihoods.

Z: What are your current research interests?

G: Over the past four years I have been working in two broad thematic areas. The first of these relates to the role of social learning in natural resource management. This is fast becoming a key theme in the natural resource management literature, but at present many of the concepts and theory that underpin social learning remain poorly understood. The second theme deals with institutions and governance arrangements for the management of natural resources that are held under various forms of common property arrangements. In particular, I have been exploring the outcomes of institutional change for ecosystems, and the ways in which communities adapt (or fail to adapt) their institutions in the face of ecosystem change or external interventions. These two thematic areas hold many potential synergies that I hope to explore as part of my post doctoral research planned for 2011.

Z: What are you currently engaged in at the Department of Environmental Science?

G: Since returning to Rhodes, I've been preparing post doctoral research proposals for 2011, helping the Environmental Science staff with some teaching, giving a few guest lectures, and getting papers ready for submission before September (when I'll be out of action until February/March next year as I am expecting a baby).

Z: Woohoo- congratulations! How does it feel being back at Rhodes (and South Africa)?

G: It's fantastic to be back- for so many reasons. I spent 2009 working at a research centre in Chile specialising in climate change research, where part of my role was to facilitate interdisciplinary science within the centre. This experience taught me to appreciate the benefits of a) the Department of Environmental Science as an intellectual hub for interdisciplinary science, and b) Rhodes University as an institution that actively encourages academics to pursue interdisciplinary research and to train students at the interface between social and ecological systems.

Being back in South Africa is always wonderful – after being away for a year, I appreciate the feeling of home-coming, belonging and understanding that only the country where one is born can give you. Also, being able to walk into a bank or shop and explain what I am looking for in my home language is always a bonus!

Z: What were the highlights of your stay in Chile?

G: There were lots. I guess if I had to pick one, it would be the three weeks we spent in Patagonia before the work part started. We hired a car in Bariloche (in Argentina) and headed south. We camped in some fantastic places - surrounded by glaciers, glacial lakes and rivers. Argentina actually offers free camping in most National Parks if you are willing to go without a

shower...it was great!

Z: Where else have your travels taken you?

G: I have worked in Peru, Chile (on a previous occasion), England and

Ireland. I've also travelled in Argentina, Brazil, Egypt, Israel, Czechoslovakia, Sweden, France, Spain, Italy, Germany, Belgium, Scotland, Malaysia, the Philippines and Canada.

Z: What has been your favourite place in the world to vacation/work?

G: Tough one! I'd say the trip I enjoyed most was the 3 months we spent backpacking in the Philippines – it was cheap, we lived in shacks on the beach made of palm fronds, cooked fresh fish on open fires and ate coconuts every day. Justin was looking for waves along the east coast so we were island hopping and pretty far off the tourist trail. That's pretty hard to beat. But as a country, I'd say I enjoyed Peru most of all – the Andes are magical, and the archaeological sites scattered throughout Peru completely boggle the mind and leave an abiding sense of wonder. Ireland was probably the friendliest country and the one I enjoyed working in most of all.

Z: Where do you see yourself in 10 years time?

G: Should I have a ten-year plan? Oh dear. Let's cut it in half. In five years time, I'd like to have a permanent academic or research position somewhere in South Africa, preferably at Rhodes or UCT. I really enjoy teaching, and love working on collaborative research projects, so if I can do both I'd be very happy. (contd on page 6.....)



“THROUGHOUT MY ACADEMIC DEVELOPMENT, I HAVE SOUGHT TO UNDERSTAND SOCIAL-ECOLOGICAL SYSTEM INTERACTIONS IN A WAY THAT IS USER-INSPIRED”





Fred Ellery honoured



Fred examining a series of burnt peat deposits in an incised reach of the Baviaans River, Baviaanskloof

Fred, President of the South African Chapter of the International Mire Conservation Group (IMCG), has been elected as an honorary lifelong member in recognition of his contributions in research, teaching and wetland conservation efforts during his career. This honor was conferred on Fred at the General Assembly of the IMCG in Goniadz, Poland where support for his election was unanimous.

Fred has devoted his working life to understanding wetlands in southern Africa. Mires are a special category of wetland where peat makes up the predominant sedimentary fill. These systems are particularly intriguing in a tropical and subtropical context because the organic matter should decompose given high temperatures that typify our region.

The most spectacular peatlands in South Africa occur on the coastal plain of KwaZulu-Natal and the southern Cape, where the oldest known peatland in the world, the Mfabeni Mire is located.

In receiving this award, Fred paid tribute to the small but active group that makes up the South African Chapter of the IMCG: "The honor of my election is something that I share with colleagues, because of their dedication and hard work in changing the way that we think about, engage with, and treat, these remarkable ecosystems." He pointed out that the chapter fights tirelessly to promote the wise use and management of mires, because in a rapidly transforming country like South Africa, mires are amongst the first natural features to disappear—especially in a region where water scarcity is a daily reality for many. The destruction of individual mires may provide some local benefits in the short-term, but the negative impacts on down-

stream users of water resources far outweighs local benefits.

Fred's work has increasingly focused on mires that are linked to coastal floodplains and lakes. In settings where floodplains are aggradational, mires constitute a potentially important carbon sink. Given the reality of global warming and the urgent need to address this global problem, he has recognized the importance of mire conservation. The peatlands of the Okavango Delta in Botswana, have also been the subject of ongoing work for him, and together with many colleagues, important principles for the sustainable management of this ecosystem have been developed. There are ongoing questions that are being addressed, and through the new generation of young scientists that is emerging, his hope is to develop the kind of understanding that ensures effective use and management of mires in southern Africa and Africa more generally.

"THE NEGATIVE IMPACT OF THE DESTRUCTION OF INDIVIDUAL MIRES ON DOWNSTREAM USERS FAR OUTWEIGHS THE SHORT-TERM LOCAL BENEFITS"



Post-doc profile contd...

Z: What is an environmental scientist?

G: I suspect it means slightly different things to all of us. To me, environmental science is about recognising the complex-

ity of interacting systems of people and nature, and attempting to understand these complexities in a way that enables management decision making. I guess if I was pushed I'd say that the characteristic that differentiates what we do from other disciplines is our emphasis on decision

making and the ways in which

the information that we generate can be used to improve management and governance.

Z: Are you an environmental scientist? Why/Why not?

G: Based on the definition above, yes. But of course I gave that definition with myself in mind! I tend to call myself a social-ecologist because I come very much from both an anthropological and a systems ecology perspective. **Z:** What were highlights of your undergraduate years?

G: There were a few. Academically, I'd say that meeting Christo Fabricius was a major one - he became my post graduate supervisor and men-

tor and opened more doors for me than I can count (both career-wise and in terms of alternative ways of looking at problems). Personally, I made friendships that I am sure will last a life time. But by far the biggest highlight was meeting Justin, my husband, and going on road-trips down the coast in his old VW combie (which we still have, although petrol costs these days mean we also have an adult car...).

Z: Thanks, George J I look forward to brightening *The Spekboom* with pics of your mini-Environmental Scientist in 2011



Department of Environmental Science: Newsletter



Tree hugging with a difference: Arbor Day 2010

By Zukiswa Kota

What do you do on Arbour Day (besides planting indigenous trees, that is)? Well, at the DES, the HOD raises a metaphorical glass to trees and nature in general, another lecturer raises his arms high in quiet blessing, another looks on smilingly and another urges students to get their hands dirty! This all happens in front of freshly-dug holes.

On Friday 3rd September 2010, staff, post-grads, 2nd years and

guests gathered on the Bangor House lawns for a terrific braai (even by vegetarian standards) to observe the day as a department. With Sheona and James' creative input, the senior post grads were able to name their tree. The tree was eventually named *Ironic* (perhaps partly owing to its being a white Ironwood). Unfortunately the double-barrel surname given to the honours tree escapes us currently...as do its first and middle name!

For those who absolutely have to know, the following species were planted:

Olea Africana
(Wild Olive)

Ptaeroxylon obliquum
(Sneezewood)

Schotia brachypetala (Weeping Boerboen)

Verpris lanceolata (Ironwood)





The Spekboom



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